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VIDEO TOASTER® USER

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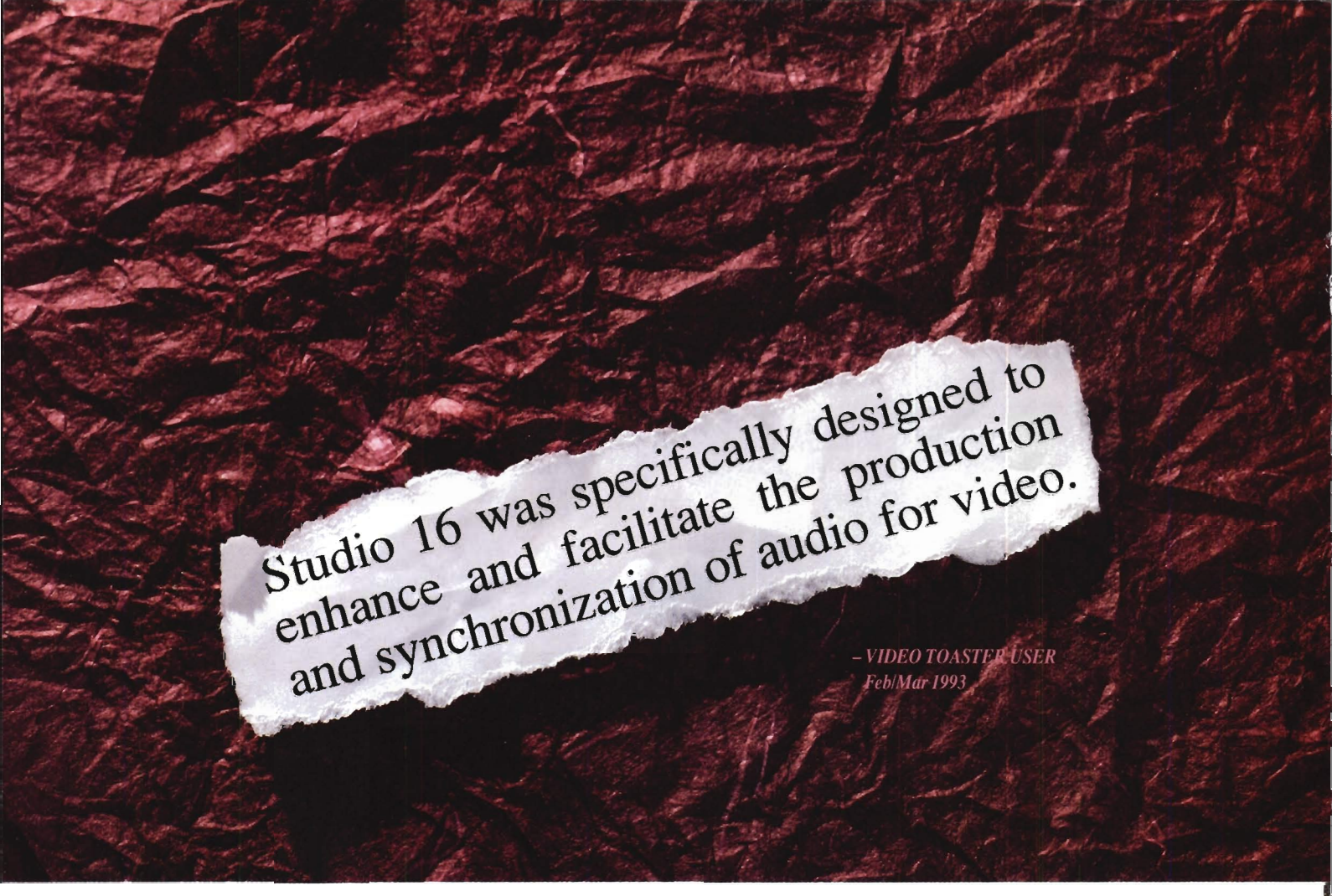
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Feb/Mar 1993

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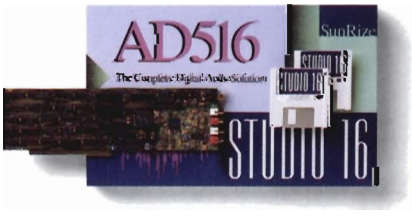

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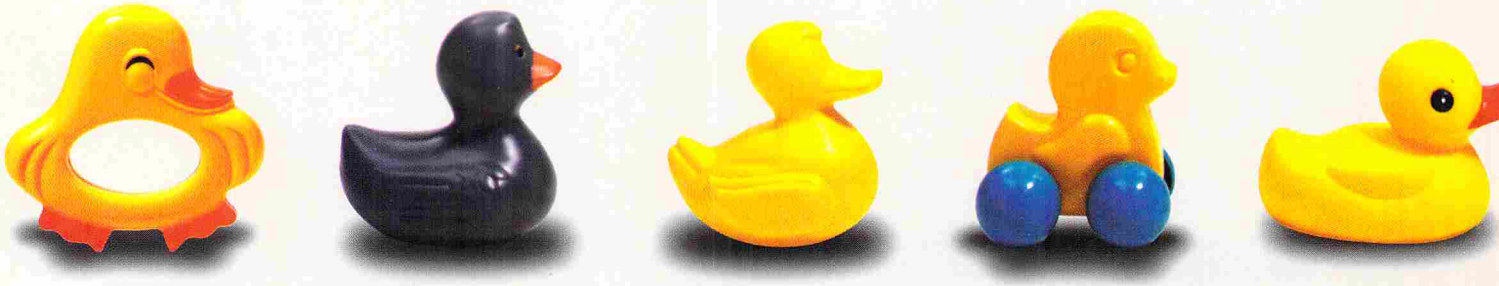

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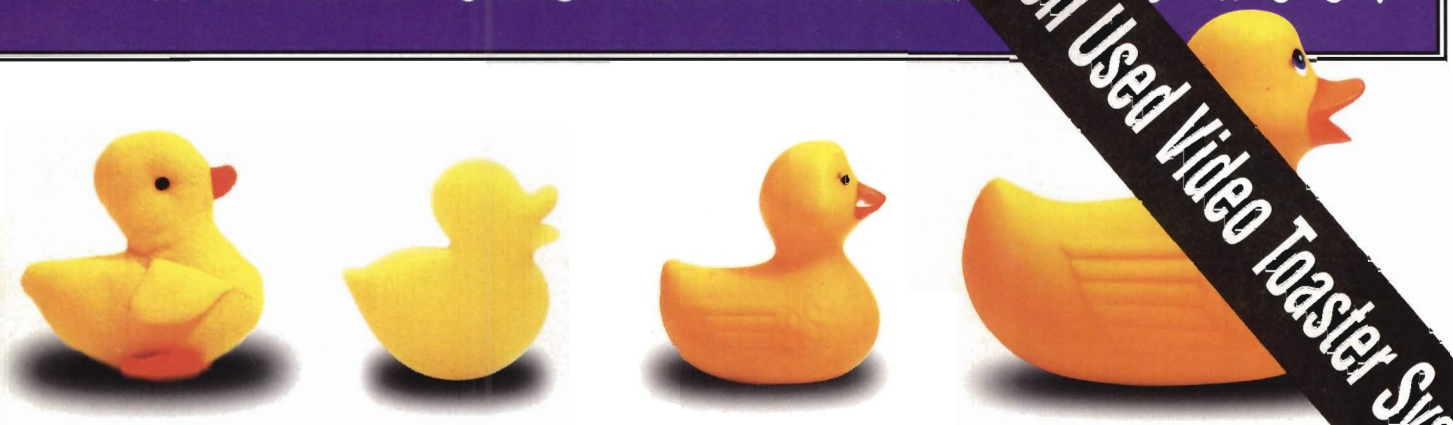

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Is your Toaster an "unsolved mystery?" Do you hope to master LightWave 3D? We offer individualized Toaster training at our site or yours. Or, if you prefer to use video as your training tool, we have two new video series; one on video basics, the other on LightWave 3D. Just call for information.

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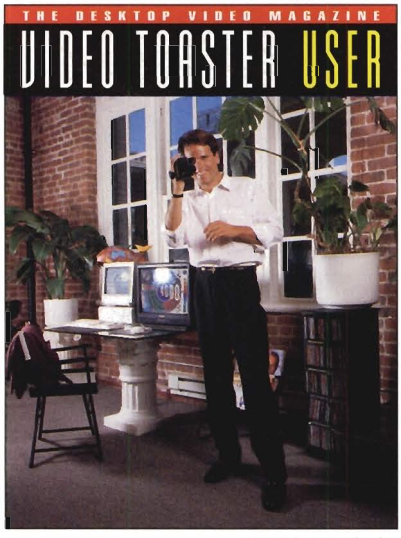
VIDEO TOASTER USER

AUGUST/SEPTEMBER 1993 ISSUE NUMBER 13



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Model: Jeff Holland

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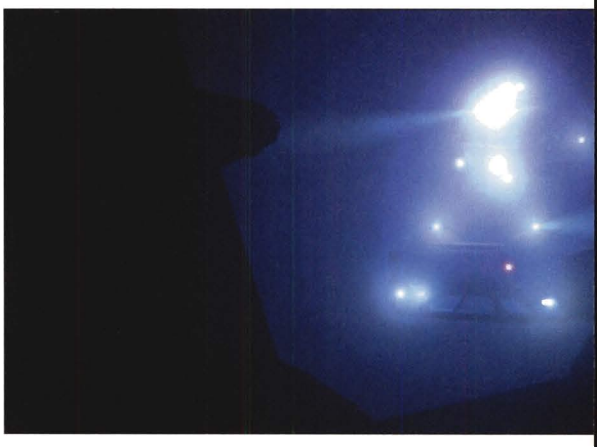

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SUBSCRIBER UPDATE

With the Toaster 4000 shipping and Toaster System 3.0 coming right behind it, Toaster users are faced with making a number of important decisions regarding the upgrade of their existing systems. Should you buy an Amiga 4000 and take NewTek up on its generous Toaster 4000 upgrade program? Maybe you want the whole enchilada with NewTek's "Double Up" program. Perhaps the software-only upgrade works best for you. These are just a few of the issues you'll be addressing in the next few weeks.

We are currently gathering and analyzing the relevant Amiga 4000, Toaster 4000 and Toaster System 3.0 upgrade data from NewTek and Commodore so that we may provide you with the most up-to-date information possible. We will outline our findings in a special report titled: *Video Toaster Upgrade Options*. This special report will be distributed free to all Video Toaster User subscribers.

Regardless of which Video Toaster system you use, the best way to get the maximum value from your investment is to have a complete and thorough knowledge of its inner workings. Nobody, in my opinion, knows more about the Toaster and how each of its different components work together than Lee Stranahan. And unlike many others who possess vast knowledge of a technical nature, Lee has that rare talent for transferring knowledge from his brain to yours.

Fortunately, Lee also has a talent for traveling; and he's going to need it because we have him on the road for the rest of the year. He'll be traveling from town to town spreading his special brand of real-world Toaster know-how.

Starting in Texas in the mid-July, Lee will visit over 40 cities across the United States between now and the end of the year. The chances are good that he'll be visiting a town close to you. See our ad on page 108 or call 1-800-322-2843 for more information on Lee's Toaster Across America Tour.

For a more immediate dose of Video Toaster information, start turning these pages!

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Suggestions and comments should be sent by written correspondence to: AVID, Letters to the Editor. Be sure to include your name, address and telephone number.
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Direct your Toaster-specific questions to John Gross. Direct your general video questions to Rick Lehtinen.
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Specific product information or press releases should be sent to the Managing Editor by mail or FAX 408-725-8035.
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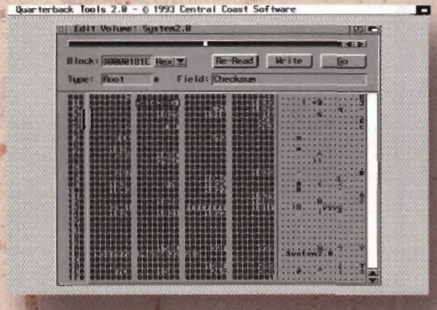

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- Quickly and easily moves fonts, printer drivers, and system files between disks.
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Brain Cloud

- Makes a floppy disk unaccessible to AmigaDOS.
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General

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- Requires Kickstart 1.2 or later (Kickstart 2.0 or later recommended).
- Suggested retail price: $125.00.

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LETTERS TO THE EDITOR

Dear Paul Montgomery, NewTek
and Video Toaster User Magazine:

I'm writing to you in response to my NAB trip where I learned of the new Video Toaster 4000 and the general upgrade policies that are going to be offered to current Toaster users.

While I'm sure you can't please everybody all the time, there is one area of concern to me. There are a number of users, like myself, who bought Video Toaster packages very recently (in my case, within the last 60 days). Like other serious users, I made sure I left the store with the best system possible, which in this case amounted to an $11,000 purchase.

It's very disconcerting to spend this kind of money on the latest technology. While it is probably unavoidable that this will happen to some customers, there is a solution for it.

As a former product manager at Microsoft Corp. for the last five years, we offered a special upgrade path for users who purchased our products within the last 90 days. Usually, we gave them the product (upgrade) for free.

While I'm not suggesting you give the product away for free, I do believe that between NewTek and Commodore, a somewhat easier upgrade path for users who just purchased systems should be offered. This will sustain customer loyalty and diffuse some of the frustration among users that I'm sure you've already experienced. Whatever the upgrade policy is, a somewhat more generous offer should be available to customers who purchased systems just prior to your announcement of Video Toaster 4000.

I hope this request will be seriously considered, not only for my benefit, but for the benefit of many loyal NewTek customers who want to continue supporting your product and your company.

Thank you.
Sincerely,
Bob Safir
Digital Magic
San Jose, CA

Editor responds:

Thank you for writing to VTU. I have forwarded a copy of this letter to Paul Montgomery at NewTek in Topeka. After talking to Montgomery, I suggest you and anyone else in a similar position call NewTek and explain your circumstances. He assured me that instances such as yours will be reviewed on a case by case basis and that a fair and equitable arrangement will be made.

Dear Editor:

I want to commend Video Toaster User on the excellent reports in your April/May issue on the subject of professional desktop videography. Thomas Dawson's and Ann Moore's articles were well-structured and insightful. Yet, your readers need to consider the next strategic phase in their business development, namely professional training and contacts.

No discerning, paying client will risk letting you learn on the job, no matter how many neat toys you own. I was particularly pleased to note the listing of professional resources, ITVA being one of them. As a volunteer leader of this 14,000 member worldwide association of visual communicators, I can attest that ITVA offers a wealth of cost-effective (heck, downright cheap), international conferences, workshops, publications, plus the networking leads and much, much more that you just won't find anywhere else.

Many of our members are Toaster users in corporate, cable and institutional settings. Many are just coming to this marvelous technology. Many could be your future clients. There is so much to learn, no matter what end you come from. An ITVA membership could be the best investment you make in your professional career. Call 214-869-1112 to find out why. Tell them Rick sent you.

Richard M. Weiss
President, Trident Productions
ITVA Vice President

Editor's Note: The following letter was forwarded to us by Jennifer McKnew (featured in the December '92/January '93 issue of Video Toaster User*). Jennifer, who is currently working as an animator for the upcoming NBC/Steven Spielberg series* seaQuest, DSV, *wanted to share this inspiration story with our readers.*

Dear Jennifer McKnew:

I am unsure exactly how to open this letter, writing to someone simply to compliment his work, is something entirely new for me. You are a bit of a celebrity from my point of view. I work in a small production studio at a technical college in Green Bay, WI. It's a world away from the hustle and bustle of the big cities you are used to, but it's a great place to raise a family. I am a 31-year-old father of two beautiful girls, 6 and 9. Now to the reason for this note.

I just got the opportunity to read the article in the December/January 1992 issue of Video Toaster User highlighting your career and talking about some of your work. We have two Amigas, including a 2000 with an 030/50MHz and 16 MB on board, and the all important Toaster. I am only tapping the surface of the uses for the Video Toaster. It is great to see, however, the level you've reached in your exceptional work. It gives me a goal to shoot for. I can only hope that some day I'll even be able to take a small step toward to the level you have attained. Because only a small part of my time can be devoted to the Toaster, I'm limited to flying logos and 3D titles. My father has been in the commercial art business for more than 35 years, and I've gotten lucky in the fact that some of his skills have rubbed off.

I was sitting in awe of the three images on the "American Music Awards." I remember wondering how much the equipment they used cost, probably $50,000 or $100,000 or more. Then when I saw the same graphics were created on a Toaster, I was really taken back. Understandably, working in a digital environment you have more options. But I can only say that your talent is on a level worthy of envy and high praise. It may sound very corny, but I was "inspired" to see where you've taken yourself. I will remind myself of this article and of you and your achievements whenever I find myself frustrated by an object motion or a surface texture that isn't quite right. I was never very good at understanding computers, but with the Amiga and the Toaster, something just clicked. The article gave me new resolve to experiment and to learn more and more. You are a wonderful talent.

I look forward to seeing more of your work recognized for its excellence. This note may have been vague, but I hope I got my point across. You are a unique and wonderful talent.

Still learning,
Kurt A. Hess

Sound Off!

Have a comment about something you read in Video Toaster User magazine? Write us at 21611 Stevens Creek Blvd., Cupertino, CA 95014 (Attn: Letters to the Editor), or fax your letter to (408) 725-8035. VTU reserves the right to edit your letter for brevity and clarity.

Corrections

The information listing for the following dealers were erroneously reported in Video Toaster User's Buyer's Guide (June/July). The correct information is:

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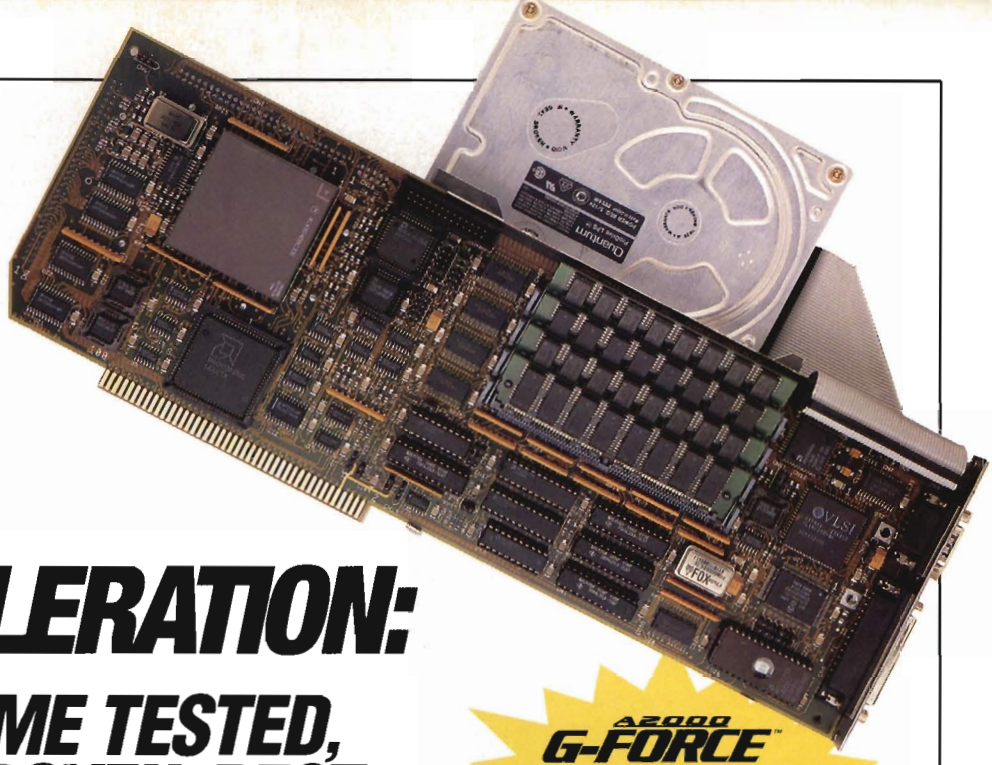
(314) 445-6163
Fax (314) 445-0757

In the User Groups listing for the Washington state area (page 127, June/July), we misprinted a partial listing and incorrect address for Spectral Multi. The Washington Area User Group and Professional Video Toaster Forum are held at two different locations. Please turn to page 145 of this issue for the correct information.

FOR THE AMIGA® 2000 SERIES



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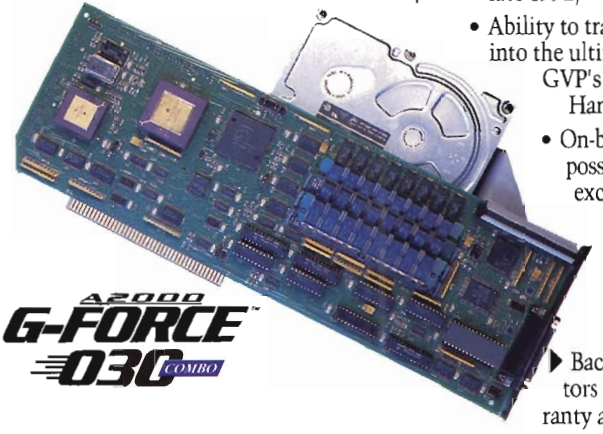

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600 CLARK AVENUE
KING OF PRUSSIA, PA 19406
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FAX 215•337•9922

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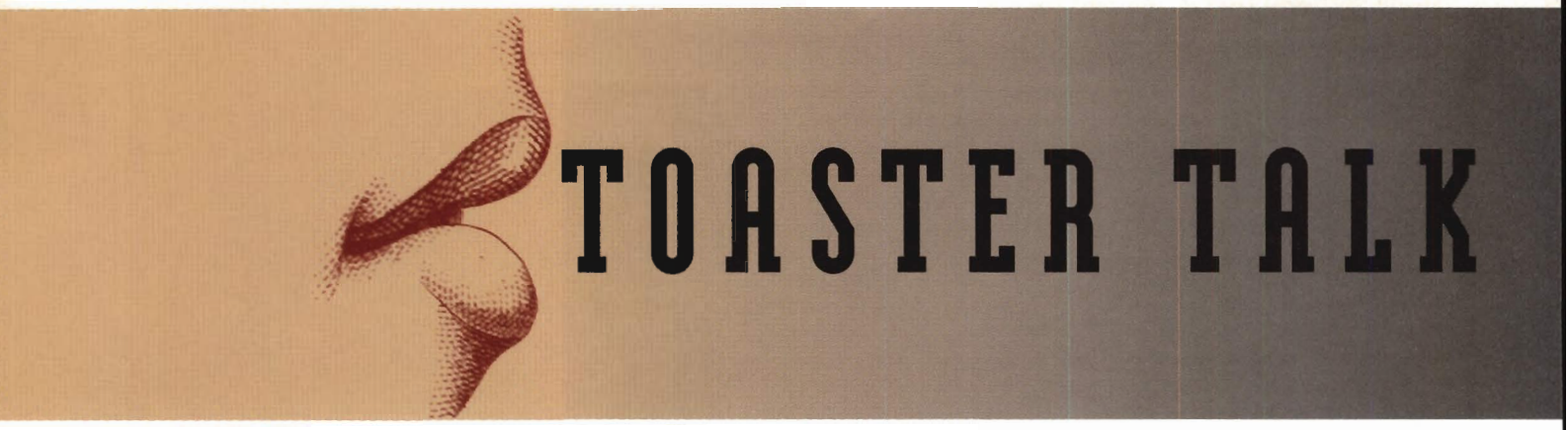
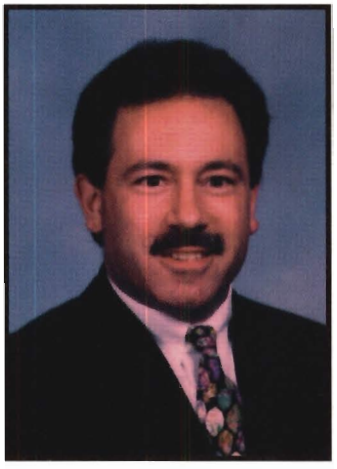


TOASTER TALK

By Phil Kurz



As a child, I was fascinated with the heavens—so much so that my cousin and I would spend hours drilling each other with flashcards that displayed the constellations of both the northern and southern hemispheres.

After a few months, we could recognize nearly 20 celestial bodies, including Mars and Venus, specific stars and constellations. We would go on endlessly reciting to each other obscure facts printed on the back of each card. We knew the size and type of certain stars, the order of the planets from the sun and the number of moons circling each planet.

However, studying flashcards wasn't enough. We had to get to the country, away from the bright city lights, to see for ourselves the wonders that we could only imagine. By the time I was 10, I made my first excursion into the country with my cousin's family. As dusk came on, the two of us ventured far out into a cow pasture, telescope and tripod in one hand, flashlight in the other. As night came on, we were literally stunned as we gazed into the night sky. There before our eyes were what must have been a million stars looking down at us, dwarfing us—two small children on a tiny planet.

We set about putting our knowledge to work, identifying stars and constellations, observing the Milky Way and looking for Mars and Venus. Time passed quickly, and before we knew it, it was nearly 11 p.m.—time to check in with my aunt and uncle. Affixing our flashlight to the tripod and setting our luminous star chart carefully below, we raised the red flashing trouble light on the flashlight and turned it on. The red light beat out a steady rhythm in the pasture as we turned our backs on the makeshift observatory and headed for the cabin.

It wasn't until we returned to the field that I realized the power of one small light in an ocean of darkness. There on the crest of a gentle rise in the pasture stood our beacon, sending out its pulsing red light, guiding us toward our portal to wonders.

A Beacon in the Night

I'm reminded of that story as I take on the editor's role of *Video Toaster User* magazine because I believe that our magazine can become a beacon in the night, guiding Toaster users to a knowledge and understanding of a device that unlocks a universe of creative possibilities.

As thousands of new personal video producers are drawn to video production and the Video Toaster, the need for timely how-to information swells. We will deliver that information in the pages of *Video Toaster User* with straight how-to articles and columns that illustrate the steps involved in Toaster operation and video production. We will also provide tutorial features that examine what a specific video device is, why it's needed, what it does and how it works. We will also continue to bring our readers informative product reviews, spelling out the strengths and weaknesses of software and hardware products, so that you can know what to expect from a product before you spend your money. Finally, we'll learn from those who have mastered the Video Toaster and who can inspire us to new levels of creativity and provide us with unique insights into the Toaster.

By now, you may be wondering who I am, how I can make such promises and whether or not I'll be able to pull it off. Fair enough. I am Phil Kurz, and until a couple of months ago I was the editor of *AV Video* magazine, a leading professional video trade journal. As editor of *AV Video,* I pioneered coverage of the emerging desktop video market and the rise of the NewTek Video Toaster. Last year, I edited and co-authored with Brent Malnack a 250-page how-to guide to using the Video Toaster called "Mastering Toaster Technology."

As to whether or not I can accomplish the mission I have laid out, I can only say that Jim Plant, publisher of *Video Toaster User,* has done a marvelous job of laying the foundation for this magazine. He has assembled a talented group of writers, editors, artists and designers who are all up for the challenge. My task is to lead this team in the direction I have spelled out. I've done it before, and I believe that together we can do it again.

The Wonder of It All

Sometimes when I sit down at the Video Toaster, I am reminded of the feeling of awe I experienced that first night I stared into the country night sky. The possibilities seemed endless then, if only I could get from here to way out there.

However, unlike my childhood experience, *Video Toaster User* won't leave you stranded in a field. Climb on board our starship and together we can explore the expanding universe of personal video production.

VTU

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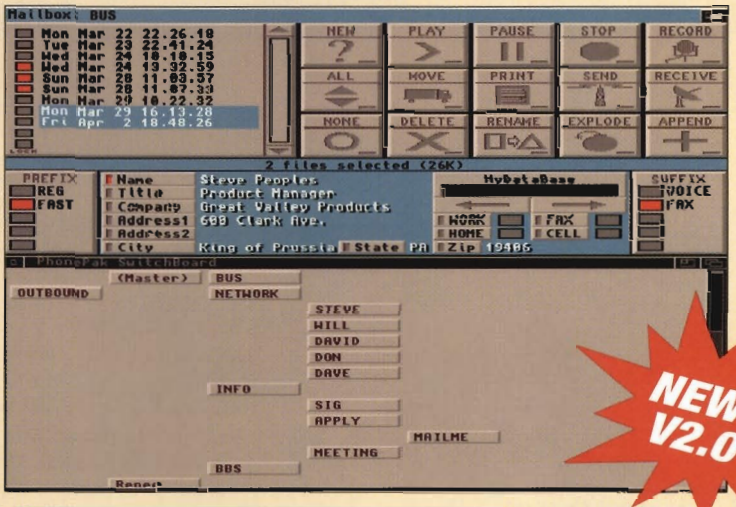
AND VOICEMAIL POWER...

A2000
A3000
A4000

YOU NEED PHONEPAK VFX™!



NEW! V2.0

Some Significant Features	Fax Machine+ Answering Machine	PhonePak VFX 2.0
Automatic voice/fax switch	Maybe	Yes
Voice and fax messages in the same call	No	Yes
Multiple mailboxes	No	Yes
Voice message/fax privacy	No	Yes
Plain paper fax printing	No (Unless you spend a lot more)	Yes
Paperless faxing (both out and in)	No	Yes
Near-laser quality fax generation	No	Yes
Batch/broadcast faxing	No	Yes
Scheduled fax transmission	No (Unless you spend a lot more)	Yes
Call screening	Yes	Yes
Centrex/PBX call transfer	No	Yes
Auto dialer*	30 numbers	Unlimited
Message forwarding/paper alert*	No	Yes
Time and date stamp*	Yes	Yes
Remote access to voice messages*	Yes	Yes
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Street price	$499+$99=$598	$299/line

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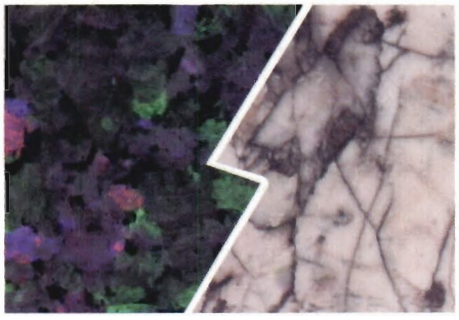
NEW PRODUCTS

By Karla Holland



Back To Nature

Infinite Solutions introduces the *Nature's Backdrop* series of textures for the Video Toaster. Each volume of the three-volume series includes 10 high-quality, full-screen images in Framestore format for use in the Switcher, ToasterPaint, CG and LightWave 3D. With this format, there is no need to use cumbersome decompression software or be forced to install them onto a hard drive. These textures can be used directly from the floppy disks, or copied to a hard drive.

The first disk of each Nature's Backdrops set includes a read-me information file and a Browser screen, which contains miniature representations of images for each volume as a quick reference. The first three volumes are titled Exotic Stone Surfaces; each set includes a variety of different stone textures such as Marble, Granite, Slate and Sandstone. More sets are planned for future release, with surfaces such as wood, fabrics, paper, etc.

Volumes sell for $69.95 each or $149.95 for all three (plus $4.95 for shipping and handling).

Infinite Solutions
14780 SW Osprey Drive, Suite 240
Beaverton, OR 97007
(503) 641-2734

EditLink 3300

Future Video announces the arrival of their accurate and affordable computer-based A/B-roll edit control systems, designed for use with low-end industrial and consumer-grade VCRs and camcorders. The *EditLink 3300* series consists of three VTR control systems for NTSC or PAL/SECAM applications, and supports VTRs fitted with either a Panasonic 5-pin or a Sony Control-L/LANC terminal. EditLink 3300 series controllers may be used with Macintosh, Amiga, or IBM compatible personal computers. Single-event A/B-roll software diskettes are included with the controller.

EditLink 3300 series controllers connect to the computer via an RS-232C interface. Three independent programmable GPI triggers are fitted to enable similarly-equipped switchers and SEGs (including the Video Toaster, Panasonic WJ-MX50, or a WJ-MX12 with a retrofitted GPI trigger) to be activated by the controller. EditLink 3300 controllers are able to remain in direct communication with all three VTRs simultaneously, reducing the time required to perform an A/B-roll edit.

The EditLink 3300 series presently comprises two models, both of which read Sony's Hi-8 RC Time Code (RCTC). EditLink 3300's suggested list price is

$1,295. EditLink 3300/TC also reads SMPTE/EBU (LTC) time code and lists at $1,795.

FutureVideo Products, Inc.
28 Argonaut, Suite 150
Aliso Viejo, CA 92656
(714) 770-4416
Fax (714) 770-4667

NVN Goes Amiga

National Videotex Network (NVN), which offers a selection of information services to Macintosh and IBM users, has expanded its offerings to include an *Amiga Forum* service. This forum, like other NVN forum-type services, is used for interaction and communication among users with an interest in a specified topic. There are two methods to do this: an instantaneous messaging system, and scheduled live conferences with guest speakers. Users also have the benefit of news, technical support, advice and tips from Amiga and Video Toaster experts, plus some of the best non-commercial video-related software available.

A basic membership of $5.95 per month allows unlimited access to a wide variety of news, sports, business, travel, entertainment, education and communication services. Connect charges for premium services such as the Amiga Forum, are just $5.00 per hour on evenings and weekends and $8.00 during prime business hours. These fees apply at 9600 baud access as well.

Consumers may subscribe to NVN online, and should set communication software to 1200, 2400 or 9600bpx, 8 data bits, no parity, 1 stop bit and full duplex, and dial 1-800-336-9092. Then enter the code AM. and follow the prompts. Contact the National Videotex Network by voice at 1-800-336-9096 for more information or to subscribe.

National Videotex Network
(800) 336-9096

Three New Products from MacroSystemUS

MacroSystemUS has three new products to offer Amiga users, *VLab Y/C*, *VLab Real-Time Video Digitizer Card*, and the *Retina* high-resolution display adapter. With VLab Y/C, building lengthy video segments does not require frame-by-frame digitizing. With its Interleaved Frame Recording (IFR) software, the user specifies a key frame and the IFR control can digitize subsequent frames as the tape plays. Three separate sequences are built and then pieced together for playback. The VLab Y/C is compatible with all S-Video capable camcorders, VCRs and laser disk players. It provides the highest-quality frame grabbing available, allowing end users to get the full quality out of their Hi-8 and S-Video camcorders and tape decks. Suggested retail price is $599.95.

VLab RealTime Video Digitizer works in the A2000, A3000 and the A4000 series of Amiga computers, and the VLab 1200 allows users of the A500 and A600 computers. VLab real-time digitizes any video frame from your connected source—from cable and broadcast TV to VCRs and video cameras. It can framegrab at up to six frames per second, and digitizes in full color. It is supported by popular graphics software, and the VLab software allows you to do frame grabbing, sequencing, and some image manipulation. It has built-in color, contrast and gamma correction, plus both luminance and chrominance correction and filters. The VLab software requires AmigaDOS 2.0 or higher and is fully ARexx compatible. It is also compatible with the Video Toaster, OpalVision, Retina, and Harlequin. Suggested retail price is $499.95.

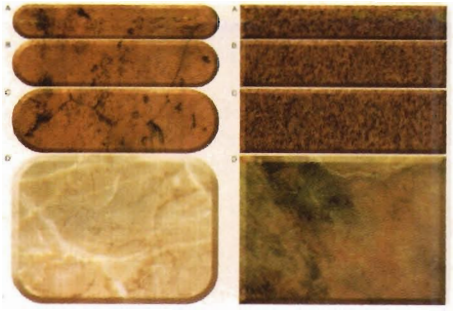
Also available from MacroSystemUS is the Retina Card. No longer do professional Amiga users have to look with envy upon the high-resolution displays of the PC or Mac. The Retina Card, is a high-resolution

display adapter for the Amiga. Now users can not only render high-resolution images, but they can interactively model, draw, design, and publish while seeing entire objects, pages or documents. Retina is the first single-card solution to be tied directly to the Amiga's operating system by using state-of-the-art software to seamlessly integrate all the best features of the Amiga's interface with high-resolution true-color capabilities. It is fully compatible with all Amiga models having Zorro II capability and running AmigaDOS 2.0 or later. Each Retina requires a standard zorro slot, leaving the video slot available for specialized uses. Use Retina with the Video Toaster for unparalleled 24-bit displays. Suggested retail price is $599.95 with 2 MB and $699.95 with 4 MB.

MacroSystemUS
17019 Smugglers Cove
Mt. Clemens, MI 48038
(313) 263-0095
Fax (313) 263-9639

Kara Textures

Here's another release from the makers of Kara Fonts. Kara Computer Graphics has just released *PlaqueGrounds*, a new package consisting of 104 24-bit high-quality textured plaques to use with 24-bit and AGA paint programs (Video Toaster compatible). Plaques are dimensionally rendered in eight different



textures consisting of Adobe, Granite, Sandstone, Marble-light gray, Copper-Patina, Wood, Marble-pink vein, and Brass-Brushed. It is available in four styles and four sizes, from 638x93 pixels to 638x397 pixels.

The 104 Plaques set requires 4 MB of hard drive storage (JPEG) and includes a JPEG utility to decompress Plaques to IFF24 as you need them. The PlaqueGrounds package of six disks retails for $99.95.

Kara Computer Graphics
2554 Lincoln Boulevard, Suite 1010
Marina Del Rey, CA 90291
(310) 578-9177

So You Want To Be In The Movies

Interactive Video Systems has released a digital, non-linear editing system that allows Amiga animators to create, edit and playback animations using a hard disk drive as the storage medium, eliminating the need for tape as a working medium. *MovieMaker* can be used as an online production tool for industrial

users or as an off-line tool for film or television production. Frame rate, image resolution, CPU speed and hard disk transfer rates interplay to determine overall system performance.

MovieMaker includes a frame conversion module to convert virtually any Amiga image format into MovieMaker format. The product supports external display devices, and allows instantaneous, non-destructive cut and paste of imagery much like a word processor allows cut and paste of words. A suite of VCR-style controls complements the mouse/joystick controls.

It plays back in full-frame, full-motion NTSC and PAL, with a 16-bit stereo soundtrack using IVS' new Perisound 16 stereo audio sampling and playback card. Software support for Perisound 16 comes in the form of Audio Editing Software (AES)—a graphical front end for sampling and editing 16-bit sound files. AES also supports time code for exact timing and placement of the edited audio file into a MovieMaker movie format. List price is $895.

IVS
7245 Garden Grove Blvd. Suite E
Garden Grove, CA 92641
(714) 890-7040
Fax (714) 898-0858

Pride Stands Tall

Pride Integrated Video Systems announces their *PIV-2001* video editing system for the Amiga. From cuts-only to fully-integrated A/B-roll editing with the Video Toaster, the PIV-2001 solution combines software and hardware to create a complete desktop video workstation. Standard features include: eight RS-422 serial ports, eight GPI triggers, compatibility with any Amiga model, PAL/NTSC operation, +/- 0 frame accuracy with time code, EDL management, full Video Toaster control, EDL storage of Effects, CG and Framestore pages, GVG-100 switcher/mixer support, and online help. Expansion options include: additional RS-422 ports, parallel and RS-232 deck support and a Jog/Shuttle wheel. For a limited time, Pride is introducing the PIV-2001 system at a price of $1,995.

Pride Integrated Video Systems
2715 Australian Avenue
West Palm Beach, FL 33407
(800) 678-3942
Fax (407) 832-9874

A Master Plan

Are you tired of making backgrounds for every single animation? VRS Media comes to the rescue! Volumes one and two of the *Master Designers' Objects Series* 3D clip art for use in LightWave have been released. Each volume of the series includes dozens of high-resolution objects for professional applications. Volume one, Bed & Bath, features a complete bedroom and bathroom, each filled with furniture, appliances, fixtures and bric-a-brac. Volume two, My Neighborhood, features three complete traditional elevations—a colonial, country and split level.

In Master Designers' Objects Series, each object is modeled and optimized for individual rendering. Surface attributes have been pre-assigned to take advantage of LightWave's rendering characteristics. Each volume contains original, seamless texture maps which can be used in other projects.

Future volumes are expected to include Living Spaces, a living room and family room; Kitchen & Dining Room; Street Life, urban street environments; and Commerce (ready-made sales and holiday influences for commercials).

Retail price is $79.95 and may be purchased directly from VRS Media. To order or to be placed on a mailing list for a catalog of releases, call (305) 667-5005.

VRS Media
7116 SW 47 Street
Miami, FL 33155
(305) 667-5005

A Wooded Wonderland

Look what's new from Bearded Wonder Graphics: *The Ultimate Wood Collection/Sampler*. This collection contains four types of digitized 24-bit JPEG textures: Plain, Plank, Parquet and tile; in three styles: Plain, Polished and Rough. The Ultimate Wood Collection has 48 textures and 122 images; the Sampler set has 13 textures and 39 images—HAM versions are available.

But wait, there's more: Bearded Wonder's *Ultimate Rock-Stone-Minteral Collection, Vol. I, II, III and IV*. 50 of these digitized and image-processed textures are contained in each volume. Image-processed textures include simulated color glass and color chrome. Samples of digitized and image-processed textures are in each volume. Suggested list price is $110 per volume.

Both collections are easily scaled and can be used in 3D, paint, presentation, desktop publishing and video. User tips are also included. JPEG loaders are required for both collections.

Bearded Wonder Graphics
1866 Ocean Ave.
Brooklyn, NY 11230
(718) 998-1767

J-Pegger

Heifner Communications and Express-Way Software have released a new software utility for the Amiga line of personal computers and Video Toaster workstations. *Pegger* is a fully-integrated JPEG utility based on the compression algorithm from the Joint Photographers Experts Group. It allows programs that don't support JPEG images to work with them automatically. Everything from 3D animation systems to graphic and multi-media programs benefit from the enormous savings in hard drive

Continued on Page 14

New Products Continued From Page 13

space Pegger's JPEG compression provides.

The "Snoop" capability automates the JPEG processing for programs that don't support JPEG, so they can load or save JPEG files. Pegger can compress a 100 MB 24-bit or HAM8 library to under 10 MB, and with it a 50 MB hard drive can now hold more than 1,000 frames of high resolution 24-bit files instead of just 60 or 70 frames.

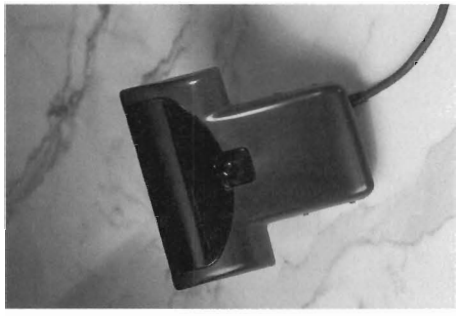
In addition to selecting individual files to process, entire file directories can be set up to be batch processed. Even if your computer crashes while Pegger is processing files, when restarted, it continues processing the files where it was interrupted. List price is $95.

Heifner Communications, Inc.
4451 I-70 Drive NW
Columbia, MO 65202
(800) 445-6164
Fax (314) 445-0757

We Want Color

It's here! Migraph introduces the first color hand scanner for Amiga systems in the United States. The *ColorBurst* can scan up to 262,144 colors, 64 true grayscales, and monochrome line art for Optical Character Recognition.

The ColorBurst has five scanning modes and six scanning resolutions with 50-400 dots per inch (dpi) based on the currently-selected scanning mode. Migraph's *ColorKit* software scans, displays, and saves color, grayscale (64 true grayscale levels can be scanned at 400dpi), and monochrome images in IFF file format, including 24-bit IFF. ColorBurst is compatible with Workbench v1.3, v2.x, and v3, and supports the new AGA chipset. It requires an Amiga with 2 MB of RAM; however 4 MB and a hard disk are recommended.



The ColorBurst is sold separately for $549 list; and when bundled with Migraph OCR Jr., is $599 list. Both are available direct from Migraph and through selected Amiga dealers and distributors.

Migraph
92700 Pacific Highway S, Suite 14
Federal Way, WA 98003
(206) 838-4677
Fax (206) 838-4702

Under The Sea

Take the popular Sony TR-101 video camera on your next snorkeling, diving or tropical adventure,

with a new protective housing from Ewa Marine. The *Ewa Model E-176* (VST) housing snugly fits this new Handycam compact camcorder to completely seal out any penetration of water. And, for above-water activities, it protects the camera from sand, spray or snow.

Made in Munich, Germany, the flexible, see-through Ewa Marine E-176 housing is lightweight, airtight and waterproof down to 30 feet under water. Custom access areas permit easy operation of the camera's control buttons and settings. An optical glass port is mounted in the front of the housing for distortion-free viewing through the camaera lens.

The Ewa Marine housings are collapsible for easy packing, and are equipped with an adjustable carry strap. The Ewa E-176 also fits the other compact Sony models, including TR-4 through TR-7, TR-9, TR-31, TR-51, TR-71, TR-81 and TR-200.

For more information on Ewa Marine's complete line of housings for video and still cameras, contact:

Pioneer Research, Inc.
216 Haddon Avenue
Westmont, NJ 08108
(800) 257-7742
Fax (609) 858-8695

Three New Mics

Sima announces the release of three new camcorder microphones, the *Stereo CamMike*, *LapelMike* and *Stereo TwinMike*. The Stereo CamMike offers studio-quality sound from stereo camcorders by building in two unidirectional condenser elements. The CamMike can also be used with mono camcorders. The lightweight microphone (only 2.6 ounces) attaches easily to any shoe mount or accessory video bracket, and has a 200 to 15,000 Hz frequency response and 600 ohm impedance. An earphone monitor is included. The suggested retail price is $49.95.

The LapelMike is a clip-on lavalier microphone, which minimizes background noises while videotaping speeches, interviews and special narratives. The new condenser microphone features an omnidirectional pickup pattern and provides clear sound at a distance. The LapelMike has a built-in power supply (battery included) a handy on/off switch for conserving battery life and a 25-foot cord. Frequency response is 50 to 18,000 Hz with -65 dB sensitivity, and 1,000 ohm impedance. The suggested retail price is $29.95.

With two unidirectional microphone barrels that adjust and separate up to 180 degrees, the Stereo TwinMike can tune in, in true stereo, sound from separate and distinct sources. The Stereo TwinMike offers a high setting for picking up sound at a distance and a low setting for close-by recording. It is also compatible with mono camcorders, and attaches to any shoe mount or accessory video bracket.

Stereo TwinMike includes an earphone monitor and uses one AAA battery (not included). Frequency response is 100 to 15,000 Hz with 1,000 ohm impedance. The suggested retail price is $59.95.

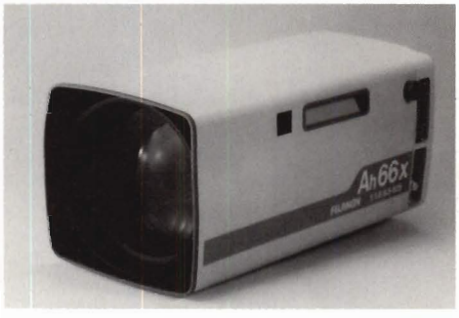
Another product released by Sima is the *Video Pro-Magic*, a digital art effects generator and audio mixer. With a list of high-tech effects including Strobe, or stop-action feature, offered in high, medium, and low speeds; Freeze; Paint; Mosaic, with both large and small patterns of both positive and negative images; Picture-in-Picture; and Multiscreen, which revolves a moving image around the screen, leaving a series of still images behind, so you can turn video post-production into video art.

With Video Pro-Magic, you can add music, narration, or both, to the original video soundtrack (an omnidirectional microphone is included). A source select switch for controlling the two videotape inputs, AC adapter, S-video connectors for S-VHS and Hi-8 formats, and audio/video connecting cables are included. Available at major electronic retailers throughout the U.S., the retail price is under $500.

Sima Products Corporation
8707 North Skokie Boulevard
Skokie, IL 60077
(708) 679-7462
Fax (312) 286-7227

Field Production Lenses

Fujinon's Broadcast and Communications Products Division introduces two new field production lenses: the *Ah66X9.5ESM* for 2/3-inch cameras



and *SH66X7.3ESM* for 1/2-inch cameras. The Ah66X9.5ESM is F1.6 from 9.5 mm to 313 mm and F3.2 to 625 mm. Maximum photometric aperture (T number) is T1.8 and minimum object distance is 2.7 m.

The Ah66X9.5ESM and Sh66X7.3ESM utilize Fujinon's latest Electron Beam Coatings (EBC), which reduce ghosting and flare. The lenses also employ enhanced servos that provide smooth, fast operation.

For more information about the Ah66X9.5ESM and Sh66X7.3ESM or any of Fujinon's broadcast, industrial video, or HDTV lens products, contact:

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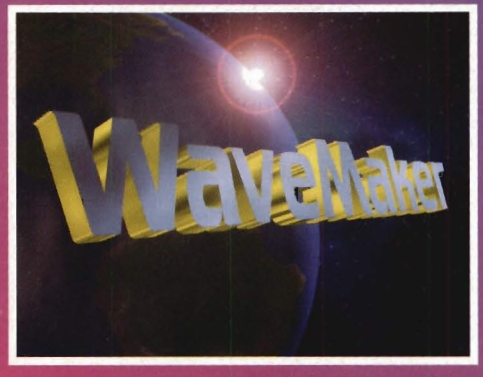

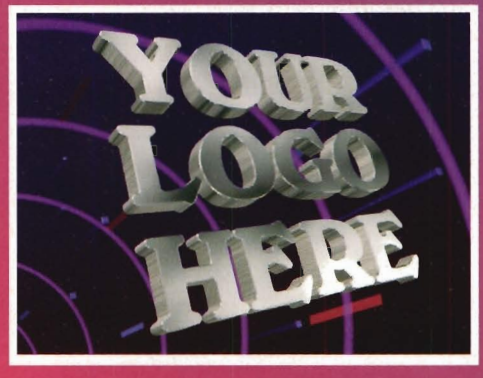

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Pixel 3D Professional is considered essential by LightWave 3D users everywhere. That's because it lets you create useful 3D objects, including text and logos. Here how it works...

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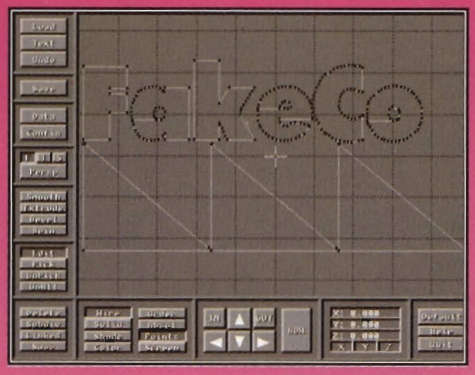

Step Two : Load the graphic into Pixel 3D and it's automatically converted into a 3D object! Then use PixPro's Smoothing functions to create objects that look great, even up close.

Step Three : If you like, edit the object further within PixPro. Then add depth to the object, using PixPro's Extrude function. PixPro includes options to extrude different colors to different depths.

Step Four : Then use PixPro's powerful Bevel feature, which even has a user adjustable router bit. Then save the object in any of PixPro's 15 different formats, including LightWave 3D and AutoCad DXF.

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THAT'S IT! Set up the scene in LightWave and render away! Pixel 3D Professional is the easiest way to create logos, 3D text and other objects that you need for day-to-day graphics work. You can also convert objects from one 3D format to another, reduce points and polygons, edit point data and much more. All these features have made Pixel 3D the essential tool. Just ask any PixPro user - it pays for itself on the first job.

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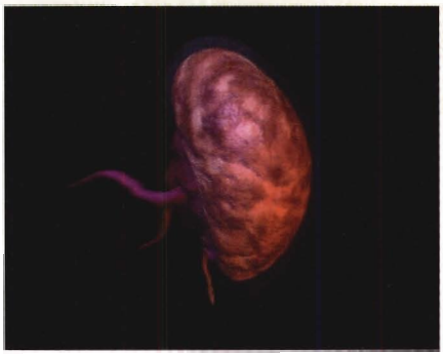
PRO•FILES



Rick Finn

Rick Finn is an independent video consultant based in White Plains, NY. His productions range from work in the new movie *Sidekicks* to corporate high-end training tapes for the Revlon Corporation.

Finn started out at a major production facility in New York in the mid '80s. He worked as both a first assistant cameraman and off-line editor. While there, Finn was involved in a variety of projects. "We did everything from all of shock-jock Howard Stern's pay-per-view shows to many of the daytime soaps, as well as projects for MTV," he recalls. "It was a lot of fun.

"I wasn't sure which path I wanted to take: camera work or editing," he recalls. "I liked them both, but before I had a chance to decide which way I wanted to go, Griffin-Bacal steered me into doing production work for them with a company called Commodore." He worked with Griffin-Bacal as a full-time freelancer. "It's the way I really prefer to work," Finn explains. "As a full-time freelancer, I'm offered a project, and if I choose to accept it, I work on nothing else until the project is completed."

He played a large role in Commodore's early Amiga commercials and promotions. "I was excited when the Amiga first became available," he comments. "I felt that the Amiga was the perfect computer for my needs." Through his work with Griffin-Bacal and Commodore, Finn learned of an up-and-coming Amiga developer called NewTek. "I attended Amiga user group meetings and learned more about NewTek and its products," he says. Some of Finn's earlier productions include using Digi-Paint and Digi-View to produce graphics for MTV's *Totally Arnold* and *Amuck in America*. "I wanted to fit the Amiga into everything I was doing, but I found it difficult, until the Toaster shipped in late 1990."

Finn's first serious Toaster project was an NBC special called *This Country's Rockin'*. "The producers I worked with on *Rockin'* were open to new ideas—especially if it was going to save them money," he says. "We used the Toaster to produce the opening of the show. It turned out great." From here, Finn went on to work with the Walt Disney Company.

"I was Post-Production Supervisor for Television Animation for Walt Disney in California," he says. "What that means is that I supervised all the post-production work done for all the Disney Saturday morning cartoons." Finn introduced the Toaster to the Disney animation departments. "I was the main proponent for going to computer-based animation," he says. During his time with Disney, Finn left several Toasters in his wake. While in California, he made contact with ESPN, where he produced several segments involving alternative sports. "It's funny," he says, "I shot all kinds of sports: wind surfing, moto-cross, skydiving; and most of it ended up on *MTV Sports*." His strong production background and sports coverage next led Finn into work in the upcoming movie *Sidekicks* with Chuck Norris and Joe Piscopo. Contacts made in the movie led him to his latest project, *World Class Kickboxing Championships* for Showtime. "I use the Toaster for practically everything in the show—graphics, titles, you name it," he comments.

With a wide variety of experience behind him and new projects piling up, including next year's Kickboxing Championships and a new cooking show with one of the best known chefs in the world, Finn isn't slowing down a bit. "I can't wait to get my new Toaster 4000!" he exclaims. "The list of new features is mind-boggling. My favorite new feature, I'm sure, will be real-time animation playback. "

Rick Finn
White Plains, New York
(914) 422-3009

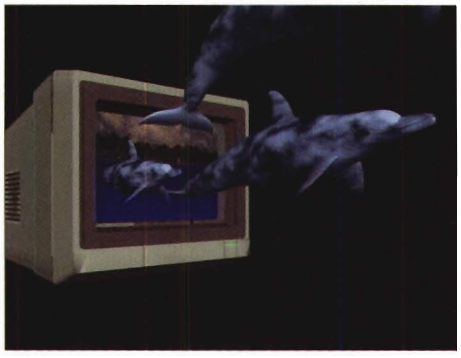
UPDATE

Atomic Toaster Catalog

Harold Russell (*Profiles August/September 1992*), president of Atomic Toaster Catalog/Media Services is pleased to announce the opening of a second office in Los Angeles. "This office will focus on the Toaster training/seminar side of the business," Russell explains. Atomic Toaster Catalog is to date the most comprehensive source for Toaster-compatible hardware and software.

Toaster Marmalade

Mark Stross (*Profiles April/May 1993*),



founder of Toaster Marmalade and president of the Los Angeles Video Toaster Users Group has also opened a second office in the Los Angeles area. "With *Mysteries Beyond the Other Dominion* (Sci-Fi Channel) going into its second season and other projects coming up, we just plain ran out of room here," Stross says. The second office will manage the corporate functions of Toaster Marmalade. Staffing the second office will be Business Manager Bob Perort and Creative Partner Dan Brown.

Optic Nerve

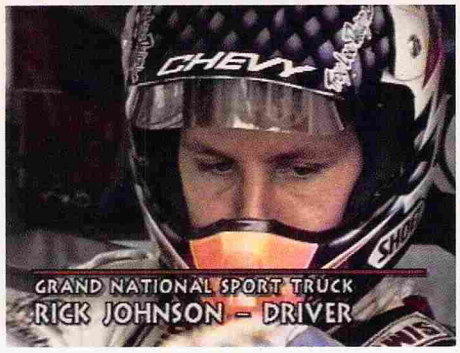
Everett Burrell and partner John Vulich (featured in "Creature Feature" *October/November 1992 VTU*) will be doing the makeup effects for *Babylon 5*, the TV series (the syndicated pilot aired this spring). They use the Toaster to design makeup effects. Referring to the production crew of *B5*, Burrell says jokingly, "We're all a bunch of Toaster geeks." The most recent project Optic has completed is the makeup effects for *Hot Shots, Part Deux* starring Charlie Sheen. Other Optic Nerve productions have worked on include the not-yet-released *Fantastic Four: The Movie,* and *Necronomicon*. "We were excited to discover for ourselves how great LightWave images look on film," he says. Optic Nerve utilized ToasterLink/Mac, outputting experimental animations to a film recorder. "We are breaking into computer animated creature effects with *Necronomicon*," notes Burrell.

Justice Brothers

Ed Justice, Jr. is president of Justice Bros, an oil-additive manufacturer based in Los Angeles. "We basically make vitamins, aspirins, laxatives, and cheeses for cars," he explains. Justice Bros have been in the media spotlight since the company's inception. Now they use the Video Toaster to keep them there.

"My dad and uncles built race cars just after World War II for Curtis Craft, who was the largest racing outfit back then," he explains. "After a while, they decided that they weren't going to get rich pounding metal, so they got in the oil-additive business." In 1950, an opportunity arose for the brothers to sponsor an Indy 500 race car. "They scraped up all the money they had to make the sponsorship work," he says. It paid off. The car won the race their first time out. "They didn't the have money or plans for a victory banquet," he remarks. The Justice Bros. became a household word. "Remember, this was before the Superbowl and all those tennis championships," he says. "The Indy 500 was *it*."

Justice Brothers quickly learned the value of promotion. "My dad started doing live TV commercials to promote Justice Bros oil additives," he says. "This was when television was in its infancy. The TV stations had 24 hours to fill, and hardly any programming to fill it. The station would accept just about anything no matter how many plugs for the product there were."



Ed Justice has always been a photography bug. "I used to freelance for the automotive magazines all through high school and college," he states. His dream, however, has always been to break into the movies. "I felt that still pictures didn't do justice to the sport of car racing," he says. "When we built our company's world headquarters, we dedicated an entire wing to video and media," he says. "The idea was that one day, when we earned the money and could afford to buy all this huge equipment, we would just put it in."

A few years ago Justice attended a birthday party on the sound stage of TV's *Life Goes On* that was being videotaped for later broadcast. To his shock, the crew was using a new kind of consumer-level Hi-8 camcorder. "I couldn't believe that they were using a consumer camcorder. I asked them, 'Are you really going to use that? The quality is that good?' and they said, 'Oh sure, we'll dump it to Betacam or one-inch and then edit from there," he says. Justice was beginning to see that his dream of getting into motion pictures just might come true.

"I started to research the possibility of putting together a low-cost edit suite by reading every video magazine I could find," Justice says. It was then he came across the peculiar ads for a thing called the Toaster. "For a long time I didn't really know what the Toaster was other than a lot of equipment for not a lot of money, in a desktop computer," he remembers. "I went back to the magazine ads and found a really good deal on a Toaster, decks, monitors—everything."

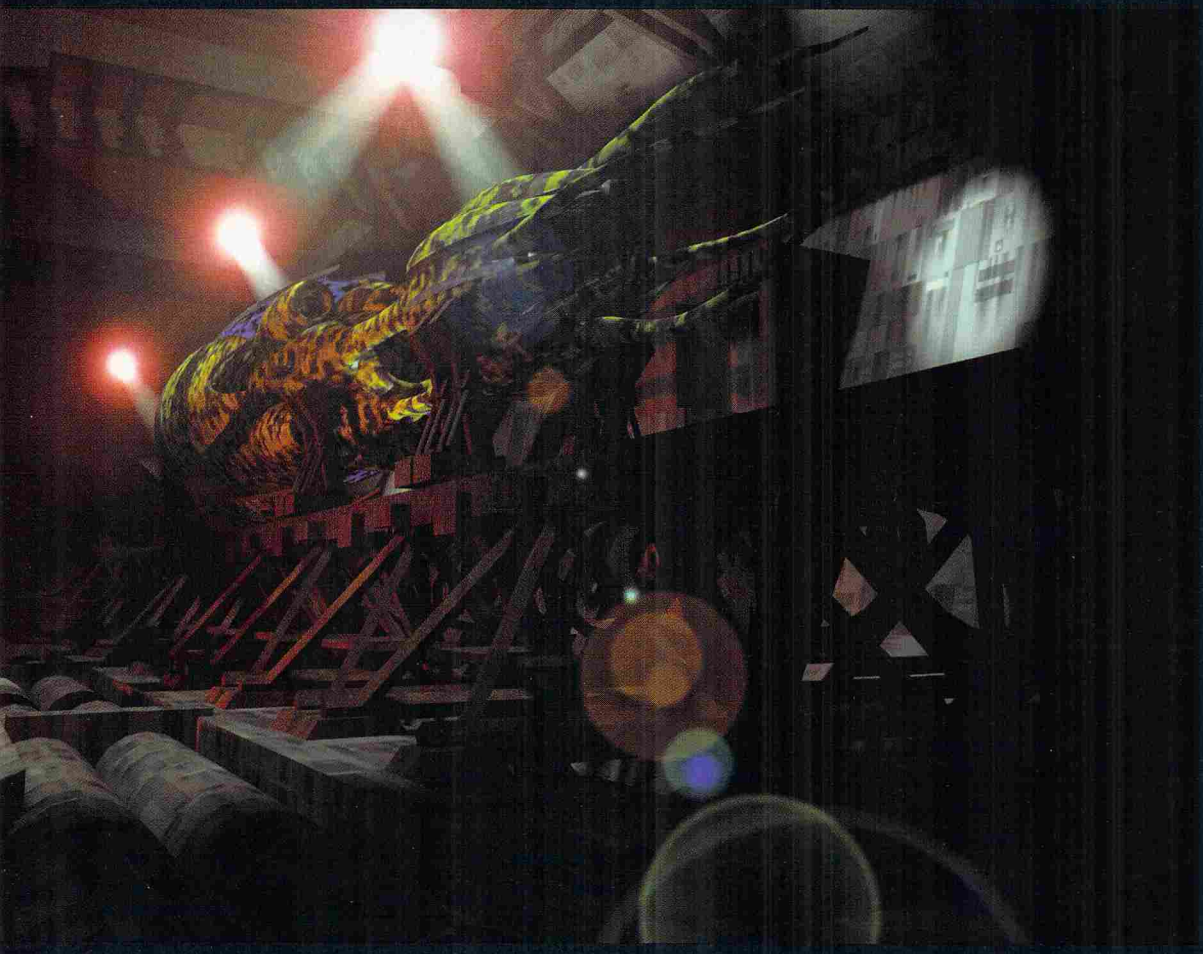
Justice immediately started his first production. "I may be the president of the company, but my dad is chairman of the board," he comments. "I convinced him that this was the way to go, and now I had to show him." Justice's first production was an off-road truck test drive. After shooting for a half-day, Justice took all his footage back to headquarters and started to edit. "At first, it was a little slow, but learning was easy. Using the Toaster and learning to edit wasn't as hard as I thought," he says. The tape was a hit. "I look back on that first tape and wonder if I knew what I was doing, or if I was just really lucky," he says with a smile.

Justice is constantly seeking to refine his technique. "I've taken art and music appreciation courses, and I've found it has really helped me production-wise," he says. "I've also responded to every free video I've come across. I've got a whole roomful of free videos—you wouldn't believe it," he remarks.

Justice continues to produce training and informational tapes as well as run the Justice Brothers Company. His latest production is a video tour of their world headquarters, and future projects will include an in-store demo tape. "Video adds so much more depth to an idea than the printed word," he says. "With the Toaster, I'm able to quickly and easily try new and different ideas —and it's all right here, at my fingertips."

Ed Justice, Jr.
Justice Brothers Oil Additives
Los Angeles, CA
(818) 359-9174

Next year Babylon 5 will be a TV series...



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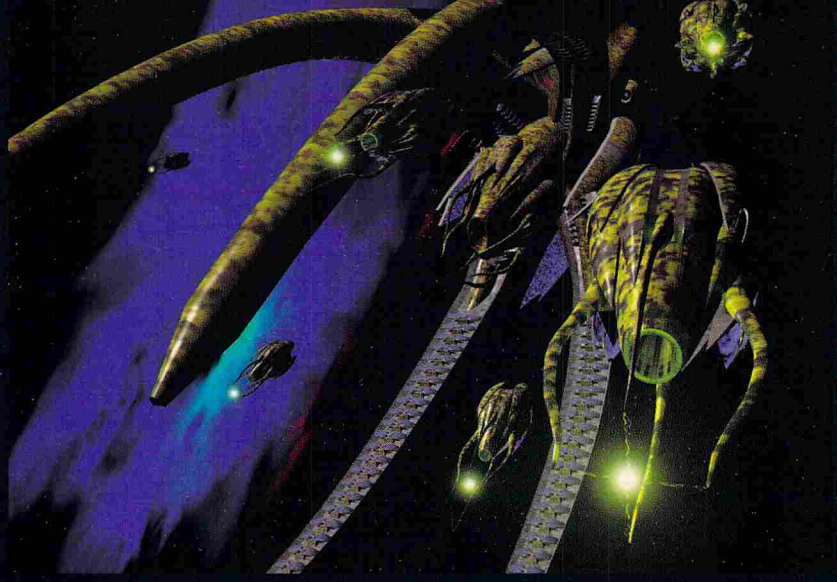

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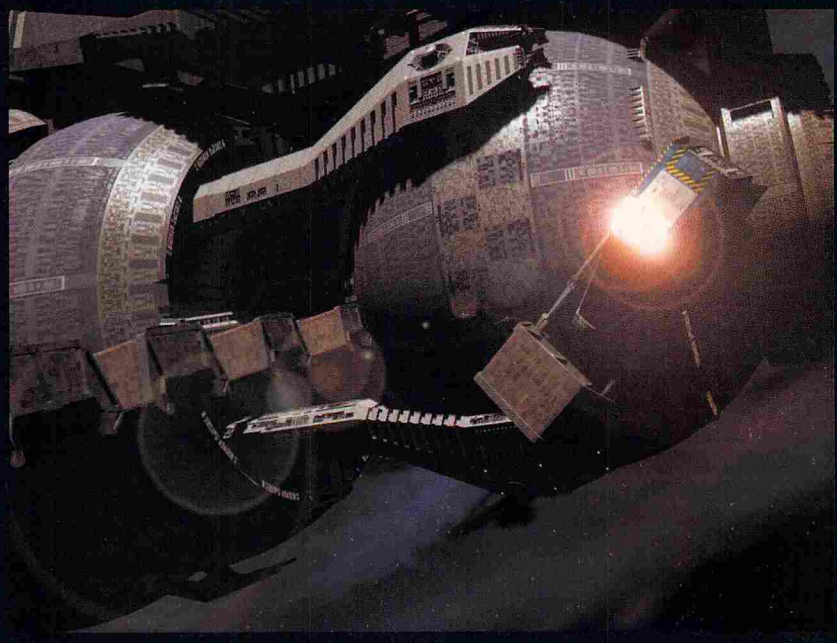

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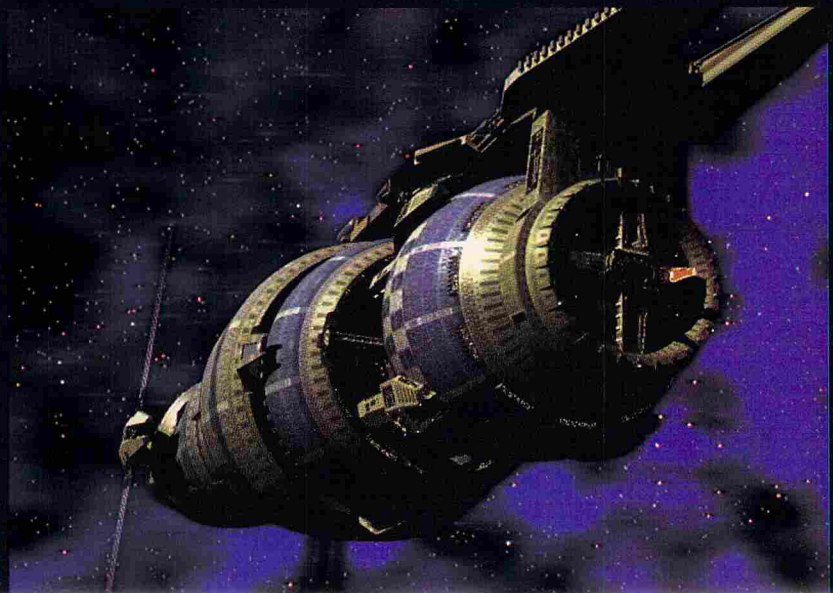

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Q&A DEAR JOHN

By John Gross

The release of the Video Toaster 4000 has generated a lot of interest. Below are some of the most common questions I have been asked recently:

Q: Now that NewTek has released the Toaster for the Amiga 4000, is my current Toaster system obsolete?
Reid Fleming
Deerfield, SD

A: Not at all! NewTek is offering different upgrade options. You can upgrade just the software or both the hardware and software. Of course, if you do not have an Amiga 4000, you cannot use all of the new hardware's options, such as real-time LightWave animation playback. Depending on which or how Toaster applications are used, this may not be a problem for you.

Q: I'm primarily interested in doing freelance LightWave animations. I have an Amiga 2000 and have a lot of experience with 3D programs. A friend said he would sell me his extra Toaster card. Since money is tight right now, do you suggest that I wait and buy a Toaster 4000 card or should I just buy my friend's current card?
Bill Gartland
Schaumburg, IL

A: If you are going to primarily use LightWave, you could get by with either card. If you use the new version of LightWave on your 2000, however, you miss a few things—real-time playback of LightWave animations and a few extra colors used for selection purposes. Other than that, the versions are identical, and you can use the new LightWave with either a current Toaster card or Toaster 4000.

One thing to keep in mind is the future. The Toaster 4000 is the start of NewTek's future developments and for this reason, I would definitely recommend purchasing the new card. You can install the new card in your 2000, make money doing freelance animations, and then buy an Amiga 4000. This enables you to do real-time HAM8 playbacks of LightWave animations and build for the future. At this point, if you have enough money, get another Toaster card and install it in your 2000 to use as a second rendering machine for your LightWave work. Before you know it, you'll have a whole rendering farm!

Q: Will the New Toaster card fit any Amiga? How much room does it take?
Jennifer Cimarron
From America Online

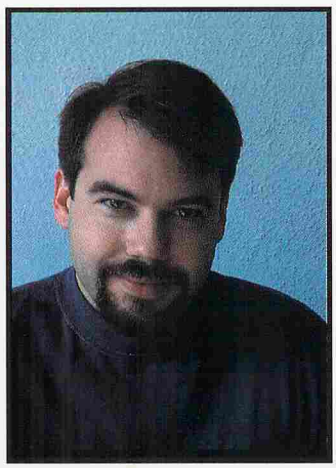
A: Because the new Toaster has adjustable BNC connectors, it fits in an Amiga 2000, 3000, 3000T or 4000. It does not fit in a 500, 600, 1000 or a 1200. When the 4000T is released, it will fit that as well. The new card is the same size as the old Toaster and fits in the video slot without using any additional slots. Because the Toaster is a double board, it actually covers up some slots when installed in a 4000 (two PC slots and one zorro slot). This is because Commodore doubles up slots by putting them in a row, and the video slot was moved to the bottom of the daughterboard (as opposed to being on top, as in the 3000). This can be a problem if you have several other internal cards that need to go into the computer. While this may present a problem now, I don't anticipate it lasting for long. There are many third-party vendors that are capable of finding a solution for those who need more slots.

Q: What are the main differences between the new Toaster and the old Toaster?
Sydney Maywood
Maywood Video
Prescott, AZ

A: The main difference between the versions is that the new Toaster, when used in an Amiga 4000, allows for AGA chipset abilities such as real-time playback of LightWave animations and multi-colored animated wipes. Plus, the new Toaster has an improved genlock and more user adjustments. Of course, the new look, all the great effects and major new releases of ToasterCG and LightWave just add to the fun.

Q: Does the new Toaster support PostScript fonts?
Denise Stone
Albany, NY

A: You bet! PostScript is supported in both LightWave and ToasterCG. As a matter of fact, over 250 PostScript fonts are included with the new release.



Q: How many seconds of LightWave animations can I play back in real-time with the new Toaster?
Steve Henderson
Yreka, CA

A: It depends on the amount of RAM installed in your 4000. At the moment, if you install all 18 MB of RAM on the motherboard, you get approximately 5.5 seconds of real-time playback. If you install a RAM expansion board, you can increase this time; but it should be noted that as soon as the animation exceeds the motherboard's 18 MB limit, the animation does not play back in precise real-time. It slows down slightly, but is fine for most purposes. By the way, animations can be played back at either 30 frames per second (video speed) or 24 frames per second (film speed).

Q: I have a GVP G-Force 040 accelerator for my 2000. I heard that there is a command that can speed up LightWave rendering time?
Tony Bishop
From America Online

A: If you look in your user-startup file, you should see a line that reads: GVPCPUCtrl >Nil: FastROM. If you modify this to read: GVPCPUCtrl >Nil: FastROM MoveSSP, you should notice a significant

Continued on Page 24

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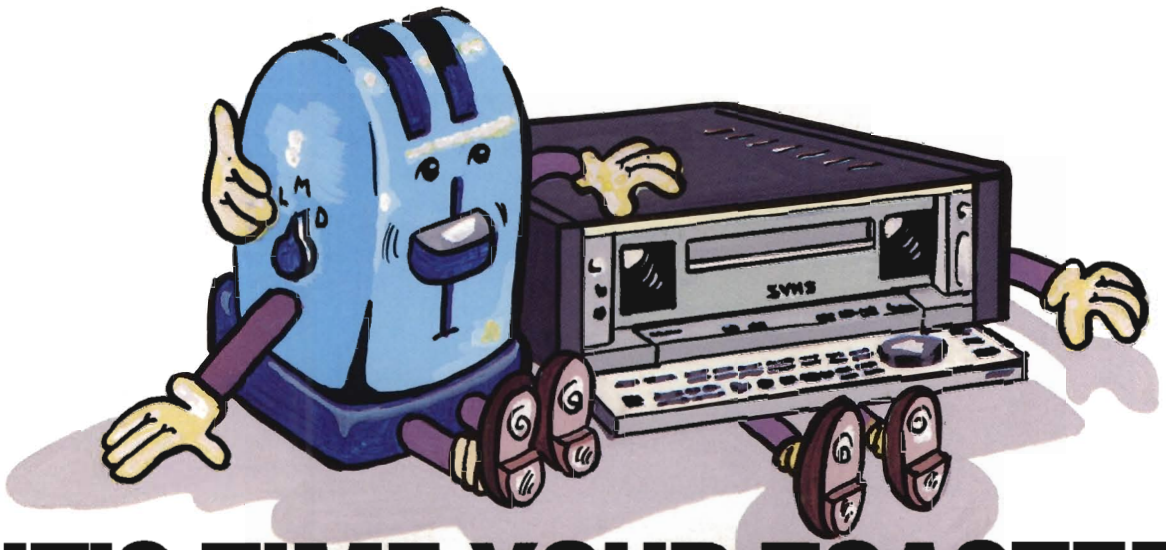

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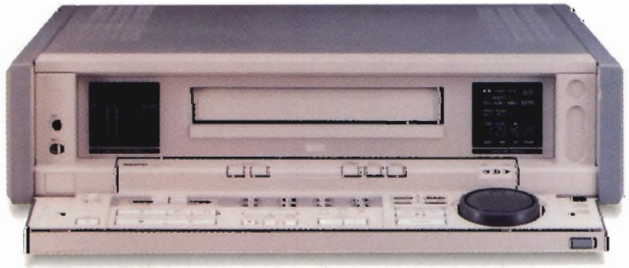

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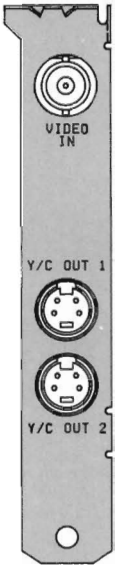

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Dear John Continued From Page 22

speed increase in rendering. GVP says that you can achieve up to a 550% increase in speed. If you use a GVP install disk that is version 1.2 or higher, this line is automatically added to your user startup file.

Q: I am presently setting up shop outside of Boston to specialize in 3D animations, and I have ordered an Amiga 4000 with a 340 MB hard drive and 18 MB of RAM. I am waiting for the Toaster 4000 board and LightWave 3.0.

Can you give me some pointers on TBCs? I need dual inputs that offer the best quality and am going back and forth between the TBC III and the Kitchen Sync. I'd like to go Y/C in.

I am also tackling the recording aspect. I understand that there are boards that act as a recorder (with their own hard drive). This allows you to skip the single frame recorder as you record five to 12 minutes of quality real-time animations. Any hints, etc. would be gladly accepted.

Bob Burstein
Animotion
From CompuServe

A: Both the Kitchen Sync and the DPS TBC boards would do the job for you. The Kitchen Sync has dual inputs on one card while the DPS boards require two cards. Personally, I have found the DPS boards to be quite acceptable.

As for real-time recording, you may wish to check out the DPS Personal Animator. It plays back LightWave-rendered images in real time allowing you to record them without the use of a single frame controller (hard drive not included). Coupling the Personal Animator with the new DPS TBC IV allows for real-time grabbing of video to a hard drive, enabling you to rotoscope it or use it for image sequence maps in LightWave.

Q: I have an Amiga 2000 with 9 MB of 16-bit RAM, two floppies, one 40 MB and one 120 MB hard drive. I have added a Mega Midget Racer (68030, 25 MHz with 2 MB of 32-bit RAM and a 50 MHz math coprocessor). I am running two Sony AVA50 8mm decks, a Sharp video camera and two VHS decks.

I plan to add a Toaster 4000 to my system soon. NewTek has stated that it will fit my 2000, although some of the features won't be available (AGA, etc.).

With both the MMR and the Toaster installed, do I have room to install a flicker fixer? If so, what brand do you recommend? What multi-sync monitor do you recommend? Do I have room to install a Megachip (2 MB of chip RAM) since the MMR plugs directly into the 68000 socket? Will a blackburst generator be required, or do I need a TBC such as the Kitchen Sync? What TBC do you recommend, and will it fit inside my system?

John Livingston
King City, CA

A: In talking with NewTek, they mentioned that they have not had a very high success rate with the MMR/Toaster combination. Often MMRs with low RAM can throw off the timing of the Amiga's motherboard. Because you have 2 MB of RAM, you may be all right; however, you won't know until you try it.

With the Mega Midget Racer installed, you cannot install a Flicker Free adapter or a Megachip. Because of the way the MMR is installed, there is not much room left over for other products.

A blackburst generator is not essential, but is often very handy to make sure all of your sources are using the same synchronization. In order to use any of your decks as inputs to the Toaster, they must be running through a time base corrector. Every deck must have a TBC, and the TBCs must all be synced up to the same synchronizer (the blackburst generator would come in handy here). Most TBCs will work for your purposes. To my knowledge, the least expensive TBCs on the market are the DPS boards and the Kitchen Sync.

Q: After I create an object with many points, how do I convert all the points to individual polygons in one shot? When I make a polygon after selecting all points, I only get a multi-point polygon. I need individual polygons of one point only.

Paul Toal
From CompuServe

A: You don't! To turn a point into an individual polygon (useful for stars, rain, fireworks, etc.) you need to select the individual point, then hit *p* (or select Make from the Polygon menu) to turn it into a polygon. This is a single-point polygon that can be assigned a surface name and rendered in LightWave. The actual stars and random stars found in the Space directory are good examples of single-point polygons.

A quick and easy way to generate large fields of single-point polygons is to begin with one. Copy it, move or rotate it and then paste the copy back in the original position. Now copy both polygons, move/rotate and then paste. Keep repeating this procedure and in very little time you can have a large number of points/polygons. If you always rotate the copied points around the 0,0,0 origin and never move them, you end up with a perfect set of stars such as the ones found in the Space directory.

By the way, if you use null points to parent objects or target the lights/camera. make sure when you create the null that you *do not* make it into a polygon. Otherwise you always end up with a dot in your animations. You can create a point and then save it out as an object without having to turn it into a polygon. This way, it shows up in Layout for you to use, but never renders in your final image.

One other tip: Single-point polygons (dots) or two-point polygons (lines) always render at the same thickness, no matter how far away or close they are in your scene.

In the last issue of *VTU*, a reader asked if there was a way to render LightWave frames directly to a tape drive. I recently received a letter from Bill Wiatroski at Moonlighter Software Development in Orlando, FL. Thay have a new product that allows you to do this.

The product is called TapeWorm-FS and allows any SCSI tape drive to act as an AmigaDos volume. For more information about TapeWorm-FS contact Hap Aziz at (407)384-9484.

VTU

John Gross is a Video Toaster graphic artist primarily using LightWave 3D. He conducts seminars on Toaster use and is currently working as an animator on the upcoming Steven Spielberg television series seaQuest. *Questions can be sent to him at:*
8615 Chalmers Drive, Los Angeles, CA 90035
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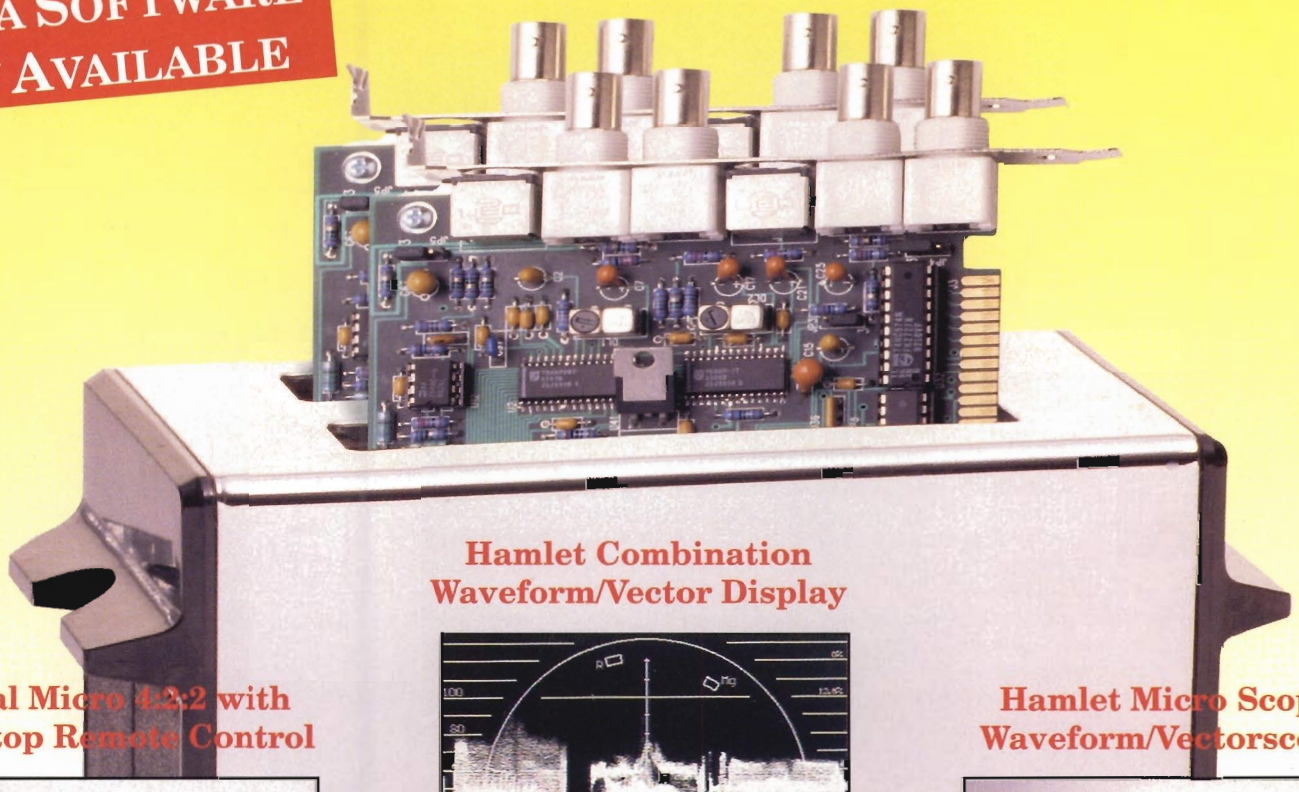
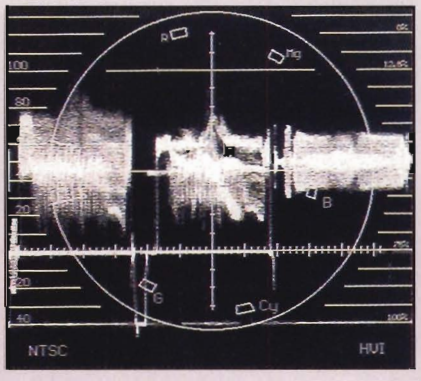


Hamlet Combination Waveform/Vector Display



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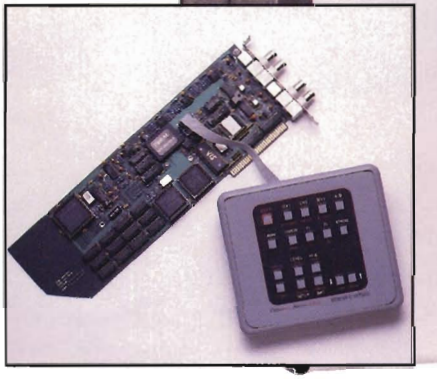

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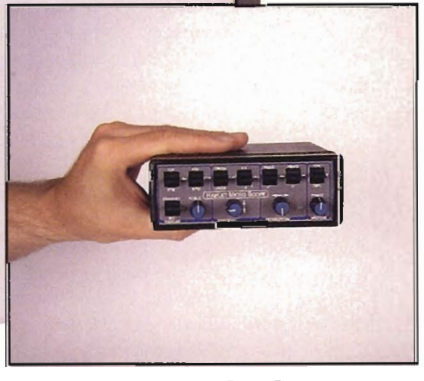

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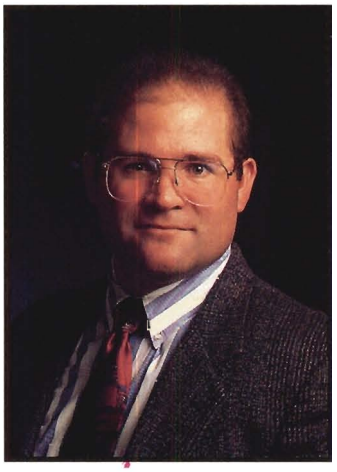
By James Hebert



Using the Video Toaster's Luminance Keyer Part II

What do you do when you're in the middle of a two-part article and the product changes between issues? Oops. It happens.

Last time, I began a discussion of the Video Toaster's luminance keyer, with additional information on chroma keying and alpha channels. That column closed with an invitation for you to experiment with the Toaster's luminance keyer based on what you had learned, with the promise of further clarification to come.

Then they changed the Switcher. NewTek announced and released the Video Toaster 4000, an all-new Toaster with a vastly streamlined look and feel. Fortunately, the luminance keyer has not changed that much. In fact, it's been made simpler to use, since it now provides you with additional clues to its operation, especially where ToasterCG is concerned.

Therefore, this coverage of the luminance keyer will include both the old and new Video Toaster—System 2.0 and System 3.0.

System 3.0 renames the Program bus to Main bus. This makes sense to newer, less video-familiar users, while remaining comfortable for professionals. In System 2.0, the luminance keyer controls consist of the small panel showing the scissors icon and three-digit numeric display, plus the Overlay bus. In System 3.0, these two sets of buttons have been combined into a single panel under the title *Superimpose*. Since these controls should be used together when luma keying, this makes sense. Functionally, the controls remain alike as well.

The Toaster utilizes the Overlay/Superimpose bus whenever you engage an effect that involves one video source appearing over the other. This indicates that the Toaster Switcher is using its overlaying capabilities to complete the transition. You've probably noticed the Overlay bus in System 2.0 automatically highlighting certain buttons at the moment you engaged certain effects. In this way the Switcher shows you what it is doing in order to achieve the effect.

Depending on the selected effect, either the program or preview source is being overlaid atop the other as it moves on- or offscreen.

•If the effect brings the preview source on-screen to replace the program source, the Toaster typically leaves the program row in digital mode (three buttons will be highlighted, the source and the two framebuffers). The manual sometimes refers to this as a "digital on" effect. The preview source passes through the digital channel, then uses the overlay row to move on-screen where it replaces the program source. The result is that the program source remains in digital mode once the effect is completed.

•If the effect takes the main source offscreen to reveal the preview source behind it, the Toaster typically leaves the preview row in digital mode. The manual refers to this as a "digital off" effect. The program source passes through the digital channel, uses the overlay row to move offscreen, and ends up on the preview row. The result is that the preview source remains in digital mode once the effect is completed.

Fortunately for us, the Toaster performs these steps automatically.

The luminance keyer is a particular kind of overlay control. You should know that it is not truly a transition as much as it is a special effect that may be *added* to certain transitions, and used by them. Therefore, you use the luminance keyer to add to the effects that the Switcher can already do.

Whereas Switcher effects use the Overlay/Superimpose bus to overlay the entire screen area of one source atop the other, the luminance keyer overlays only part of that source atop the other. Using a control called the *clip level*, you can adjust how much of this overlay source is seen.

The trick that most people find difficult to master with luminance keying is *how to control* the key. How do you determine what portion of the picture is being cut out? Sometimes it seems the clip level cuts out portions of the image you want to see. Since this form of keying is based on brightness, the Toaster looks at the video image on a scale of 0 to 256. From the darkest part of the picture to the brightest, the entire image fits somewhere within this range. When you adjust the clip level, you are either raising or lowering the cutoff point within this 0 to 256 range.

This does not take into account *color*, and here you find some confusion. Sometimes, areas of the screen image that appear to be the same color are in reality not, and they have different brightness values. The value difference may be too minute for your eye to register. If you are keying an actress in front of a background, and suddenly a portion of her dress reveals the background video source unintentionally, then for a moment the lighting on her clothing went beyond the clip level. I point this out to reinforce the idea that luminance keying is based on brightness, not color.

Continued on Page 28

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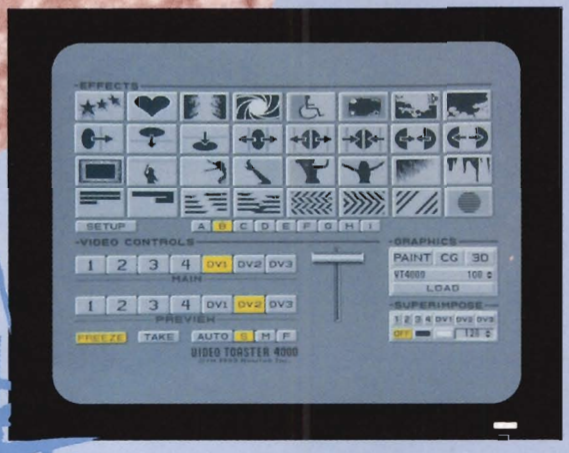

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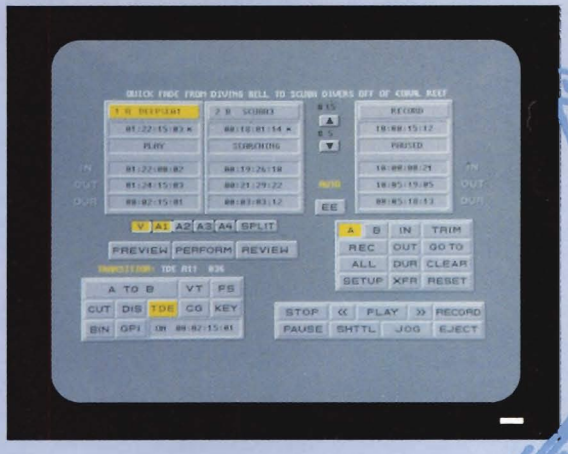

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Using the Video Toaster's Luminance Keyer

To better control brightness within a scene, spend some time adjusting your lights. Better lighting is the key to achieving more consistent, easily-manageable keys. Keep this in mind as well: It does not matter what you use as an overlay source. It can be live video, recorded video, or a still image in the framebuffer. It's all video, so it's all the same to the Video Toaster. Any one kind of source may be laid over any other kind of source.

Let's look at this using two examples, without and with luminance keying involved.

Assume you are editing a tape on golf technique. To segment the tape, you design chapter breaks in the form of full-screen titles to fly on-screen. As one segment closes, the screen flies on with the title for the next segment. The text is white, and the background is black. This is a simple and effective transition, yes. But a sequence like this can be made far more eye-catching with the addition of the luminance keyer.

How could the keyer be used here? In one of two ways, depending upon how you design the text and how you choose to activate the keyer. If you key out the black portion of the title screen, the white text appears overlaid in front of the golf pro (the result looks like a ToasterCG key page on display). Combined with a digital effect, the text can be made to fly on- and offscreen. If you key out the white portion of the title screen, the lettering appears as a hole in a black screen, with parts of the golf pro visible through the holes. This too could be used in conjunction with an effect to fly the title card on- and offscreen. Although in this instance it would not be as effective.

Here are the steps for setting up a flying key:

Step 1. The trick to using the luminance keyer is to design the graphic, then place it in a framebuffer (let's say DV1).

Step 2. Activate the keyer by selecting DV1 on the Overlay/Superimpose row, then select your incoming source on the Main/Program row. Make certain you are keying the proper color, white or black.

Step 3. Drag the mouse over the clip level until the keying is correct and the edges of the lettering are clean.

Step 4. Click on the scissors icon (System 2.0 or earlier) or the OFF button (System 3.0) to deactivate the key. Select DV1 on the preview row.

Step 5. Click on the keyer to activate keying. Since there is no source selected on the Overlay/Superimpose row, there will be no apparent change. However, the keyer is active, ready to go to work on the preview source for the next transition you engage.

Step 6. Select a flying digital-on transition. Familiarity with the Toaster's effects helps here, since some effects cannot work with the keyer.

Step 7. Trigger the effect (Auto or Spacebar).

To fly a keyed graphic off, select the flying digital-off transition, and trigger it at the appropriate moment.

To work this into the golf sequence, you might edit the footage so that the key flies on as the last scene fades to a patterned or gradient background, then flies off as the background fades into the next segment. There are a number of ways you could work with these elements for a smooth visual segue that is neither jarring nor distracting.

Next time, we'll include a series of images showing you the exact nature of the luminance keyer within the Toaster, and how you can use it (plus the Art Card special effect, a useful luma key tool) for additional tricks in your production work.

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In the June/July issue, I wrote a preliminary review of ToasterCG. Little did I know how preliminary it would be! Many aspects of ToasterCG's operations and features changed. Following is an update to the ToasterCG feature set.

Selecting Text, Boxes, and Brushes

Selection is simple. Move the pointer over the element you wish to select and click the left mouse button. Drag over several items to select each of them. Double-click on a line to select everything on that line. And shift-double-click to select all items on the page. Furthermore, you can hold the shift key and select individual elements from all over the page, or deselect them as well.

PostScript Font Support

ToasterCG supports PostScript fonts in sizes ranging from 10 to 400 lines in height. On Crawl pages, this is limited to 300 lines. This also applies to the resizable fonts that Commodore includes with Amigas from the 3000 onward.

Variable Transparency

On Key Pages, there are four transparency settings: 0%, 33%, 66% and 100%. Essentially, 0% is solid and 100% is fully-transparent. On Framestore pages, transparency may be set to any value between 0 to 100%. Scroll and Crawl pages cannot utilize transparent elements.

When working with transparency, be aware of shadow and outline settings. Shadows and outlines are computed as solid black shapes that lie behind each character. Therefore, a 50% solid letter will not appear truly transparent if it is in front of a 100% solid shadow. In most cases, you may wish to use only a shadow or an outline—rather than both—with its transparency value set to the same value as the character face transparency value.

This is a difficult idea to explain. The best method is to try it out. Practice with transparency. Type the letter M a dozen times across a key page, select each letter, and choose different face, shadow, and outline settings. Vary the transparency settings in a regular pattern, such as 0%, 20%, 40%, 60%, 80% and 100%. Render the page and determine which settings give you the results you like best.

The Palette Menu

Here's another surprise that you might experience within the Palette. Say you compose a Key or Framestore page using several different fonts, each in a different color. Then you decide that all of these elements need a cast shadow that is 50% transparent. Select all items on the page (hold shift and double-click on any one item to do this), go to the Palette menu and set up the shadow. Upon exiting the menu, you have not only changed the shadow settings, you have changed the text color settings as well!

Since there is no undo button in ToasterCG, I recommend that you work with ToasterCG and get used to its operations carefully. Before performing major changes, you may wish to make a copy of the page and try them out on the copy first. It's much simpler than going back to recreate a full page of graphics.

Working with Brushes

I also recommended creating a special directory for brushes to use in ToasterCG. You no longer need do this. NewTek has created and provided it with the software.

Saving Books

Saving books has been made somewhat simpler. You can save the current 100-page book directly to the hard drive from within ToasterCG itself (the Save Book button). However, if you then clear out memory and design a new book, you need to return to the Setup screen and designate a new Project before you save this new book. Otherwise, you write the new book over the old one.

As a safety feature, I think it's best to return to Setup and save a new Project (which saves the current book as it is created) every time you work on new material.

Loading ToasterCG

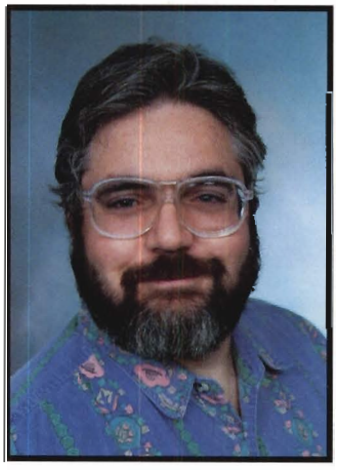
Since ToasterCG must create each of the PostScript font sizes you use every time you load a book, it can take a few moments for the application to load. In case you mistakenly clicked on the CG button, a status window shows you ToasterCG's progress as it loads. Click on the *Abort* button if you wish to cancel loading the current book.

VTU

James Hebert wrote and edited most of the Video Toaster manual. He divides his time between his newborn son Garrett, writing about the Toaster, changing Garrett, writing about the Toaster, feeding Garrett, writing about the Toaster, and sleeping whenever he can.

Dr. VIDEO

By Rick Lehtinen



Welcome back to Dr. Video's Q and A session. Each month the doctor answers general questions on all topics related to video production. Whether it's lighting, equipment, electronics or what-have-you, Dr. Video's mission is to find solutions to any problems confounding you or mysteries befuddling you. Don't worry if your question seems too simple or too advanced—Dr. Video takes on all comers.

Q: Will the current crop of time base correctors, single frame controllers, black generators and so forth work in the new Toaster 4000?

RM-III
San Bernardino, CA

RX: So far, almost any Toaster peripheral that has worked in the 2000 will also work in the 4000. Many of these Toaster add-ons fit in the PC slots. They depend on the Amiga for physical housing and power, but have no actual connection with the bus. This means they would work not only in the 2000 or 4000, but in almost any PC as well.

A more important question looms: Will the Toaster for the Amiga 4000 play in the 2000 (or 3000)? The answer: Yes, but be prepared to lose some of the fancy wipes and animation effects. These rely on the Amiga 4000's AGA chips. A Toaster version 2.0 or earlier, however will not play in a 4000.

Q: The Toaster at our cable company has a phase difference of up to 10 degrees. This isn't good enough. What can we do?

TM
Oregon City, OR

RX: You should not encounter phase errors of this magnitude. Auto Hue should take you much closer than this, down to about three degrees. If it doesn't, call NewTek Tech Support.

One trick: The Auto Hue adjustment should be made using short (12 inches or less), high-quality, video cables. It is an internal adjustment to the Toaster, therefore it is appropriate to test it in isolation, without all the other equipment hooked up. This is counter-intuitive for broadcast engineers, who often prefer to test things while they are installed.

Q: I've read that in the Amiga 4000 there are only four expansion slots. I want to use the Toaster and some additional cards, but I'm not sure they will all fit. What can I do?

FM
Bodega Bay, CA

RX: Many Toaster insiders are buzzing about this topic. It seems that the lack of card slots on the 4000 has many people betting on a big market for expansion chassis. Some boxes expand the number of slots available by stretching the bus into an adjacent box. Other chassis pass RS-232 or MIDI code. In most cases, these expansion chassis also provide an extra power supply. Chassis are available in many sizes and prices from several different manufacturers.

Q: I get quirky lines in my Toaster video output. They are not quite random, but I can't pin them down either. They seem to happen most often during digital effects. Help!

GK
Baldwin, KS

RX: You didn't mention what kind of program material you were working with. Sometimes a high white level, such as the reflection off a metallic object, can cause an artifact in certain camera models. Also, high whites in general can overload certain pieces of video equipment (such as a TBC). It is feasible that your quirky lines could result from such an overload. If the problem seems chronic, check to see if all your terminators are installed or set correctly.

One Toaster-specific problem sometimes occurs when using the Amiga monochrome output. The RGB signal lines used by the standard Amiga 1080, 1084 and 1084S monitors are an integral part of the Toaster's signal processing system. If an Amiga RGB monitor is not used, these lines must be terminated. The terminator is simply a 23-pin plug with a few 75 ohm resistors installed. These tie the R, G, and B lines to the ground. Although it would be an easy thing to make yourself, several third-party Toaster suppliers sell RGB terminators. They cost about $10.

Q: I've heard you can get good deals on used equipment from TV stations. How do I do it?

DW
Sandy, UT.

RX: With caution. In the first place, most broadcast tools, especially cameras, have a hard life. TV electronic news gathering (ENG) equipment is carried to diverse locations, set up, taken down and stored several times a day. Between shoots it bounces around in the trunk, or on a shelf in a van. No matter how careful the photographers are, the gear gets beat up.

Back at the shop, meanwhile, diligent engineers are

Continued on Page 52

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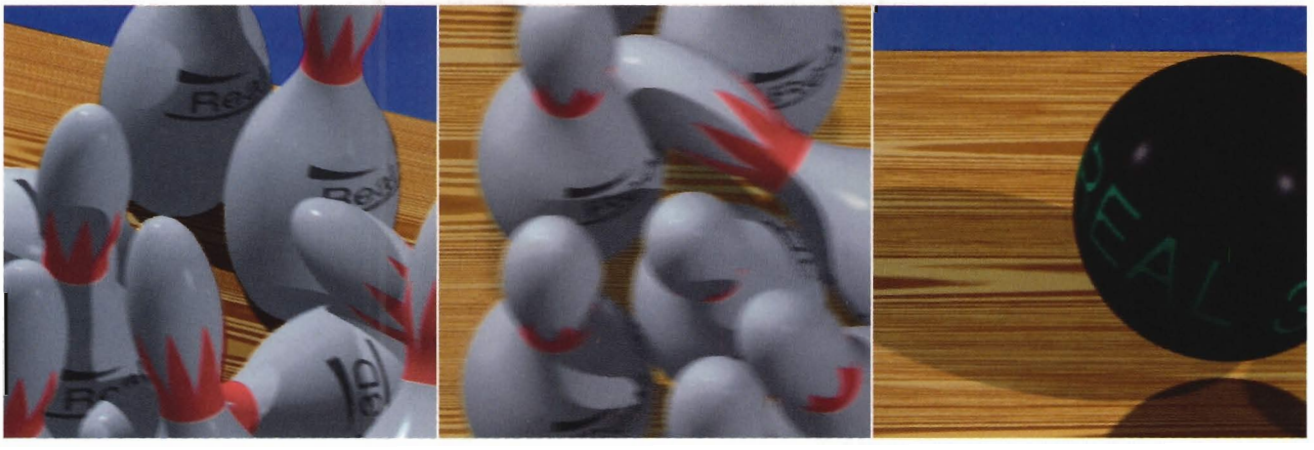

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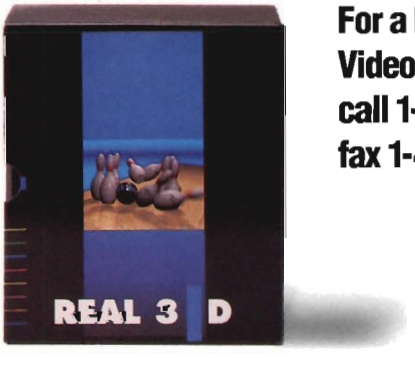

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Dr. Video Continued From Page 30

doing their best to keep the stuff running. When it just can't be fixed economically, they try to get rid of it. If this is where you come in, you may be buying trouble.

Broadcast equipment that is not on the road, but which serves in-house at the station, is also likely to be well-used. Although not nearly so wearing as the mobile life, a few years of 24-hour operation can take its toll on equipment.

On the other hand, broadcast equipment is usually very well-built. (It is not unlikely that the sales tax paid on the equipment when it was new was more than the cost of your Toaster.) Most broadcast equipment is reliable, and if properly serviced, can be restored to like-new condition. If you know what to look for, there may be some bargains.

Remember, however, that you most likely bought your Toaster in the first place because it did many of the chores done by expensive broadcast production equipment. Remember also that keeping some of it running will be a major headache, not because it breaks, but because it is designed to accept periodic alignment. If you know what you are up to, or have good engineering help, keep that checkbook handy. *[Editor's Note: For more information, see "Buying Used Demo/B Broadcast Equipment" by Frank Kelly in this issue.]*

Q: How can I use my camera to capture 35mm slides for use with my Toaster?

DM
Kelso, WA.

Rx: There are several ways to do this. The simplest is probably to shine the slide on a screen or wall, and shoot the wall with a video camera. Unfortunately, you may find that the image thrown by most common slide projectors includes a hot spot near the middle. You may be able to flatten this by suspending a gel or piece of mesh between the projector and the screen, possibly in combination with using a rear projection screen.

A better way is to rig some sort of light box to backlight the slides. This allows a more uniform light across the slide face.

A nifty little camera attachment is available from some photography specialty shops. It consists of a little tube that screws onto the lens front (as if it was a filter), and a slide holder on the opposite end. For less than $25, such a setup gives fairly good results.

Unfortunately, all of these solutions depend on the video camera—by definition the resolution is NTSC. This is okay if you want to use the image as a video source for your Toaster, but if you want to use the image in ToasterPaint, the NTSC lines tend to show.

The answer is to capture images in higher than NTSC resolution, or at least make it easy to perform a translation. NewTek earned much of their working capital to develop the Toaster by marketing such a device. DigiVue Gold includes a paint system, a dongle to convert the video signal into something that can plug into the parallel port, and a color wheel with red, green, and blue filters. This allows users to scan color slides with a mono camera.

Another intriguing solution is a little slide scanner from Nikon that plugs into either a PC or Mac using an included SCSI interface card. (An Amiga version is coming.) Although it costs around $2,000, this tool gives performance roughly equal to other products costing up to 10 times more.

Of course, there is always PhotoCD. A local camera shop can print a slide (or a print, for that matter) onto a CD, which you can then call from a CD-ROM drive on your Amiga. This service is usually most economical if you copy one roll at a time. Make sure you ask the photo finisher to order the transfer in the resolution you need.

Q: I can't get my Toaster to do match frame editing for love nor money. Who is broke, me or my Toaster?

RL
Payson, AZ.

Rx: There have been some reported problems doing match-frame edits on a Toaster. The problem is obscure, and usually only happens when you insert edit over previously recorded material. Not all editing systems exhibit the problem, and then not all the time. The cure is known, and it is part of the Toaster 4000.

Toaster 2.0 owners can achieve a fix in most cases by turning their Toasters off, then on again. Usually repeating this action one or two times makes the problem disappear. See my feature article, *The ABCs of Video* in this issue for a more detailed explanation.

VTU

Rick Lehtinen is a Phoenix, AZ-based author covering the broadcasting, communications, desktop video and computer graphics industry.

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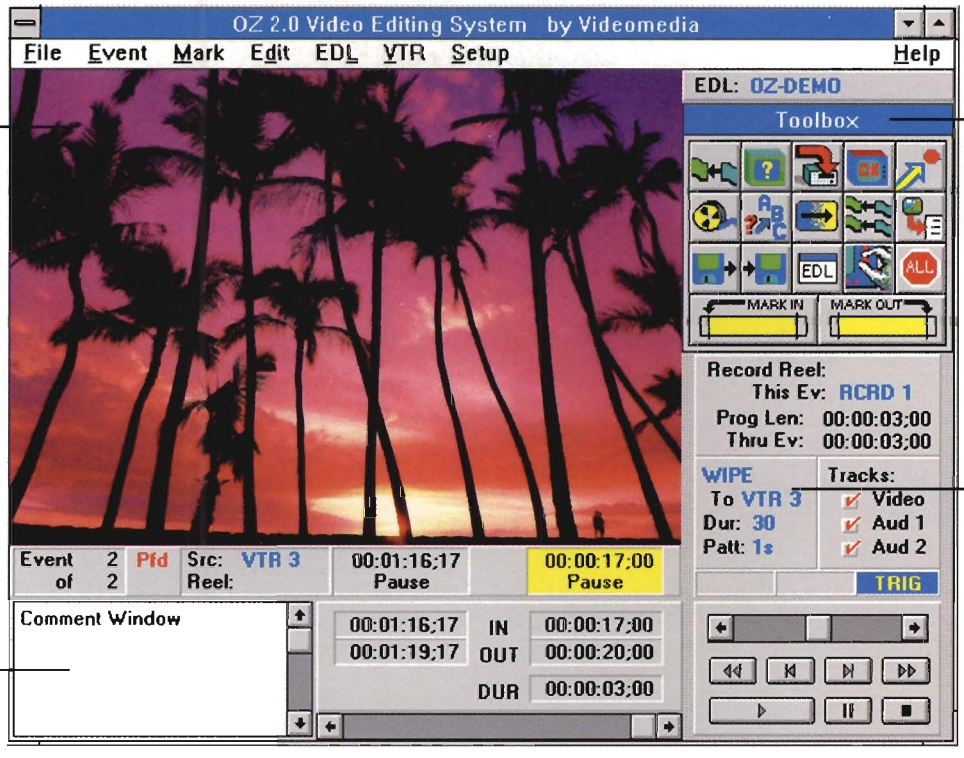

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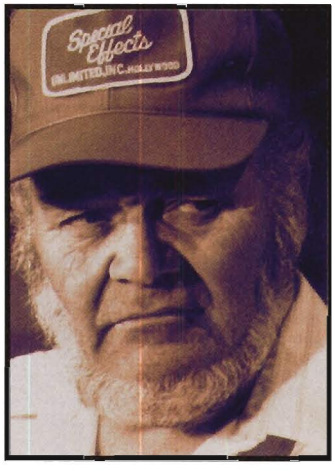
by Robert E. Mc Carthy



It never fails: Now that winter is over and summer is here, everyone wants snow in their production. Here are some ways to make snow and related snow effects, most of which are inexpensive to produce and can be recreated on a modest budget.

Snow Effects

Although there are many ways of delivering snow to a set, indoors and out, a popular method is to use a Ritter fan. A Ritter fan is a large, almost-silent fan with a wooden blade. Snow is dropped in front of the fan by hand, a shaker or a snow delivery machine. It can be fed from either the top or left side, facing into the air stream. It is never to be fed through the back, however, as flakes get into both the blades and cage and foul up the mechanism.

One of the oldest methods still occasionally being used is a snow bag attached to an overhead pipe. A line is pulled to control the volume of snow, and the faster it is pulled, the faster the snow falls.

Outdoor Snow Effects

There are many ways to create snow effects outdoors.

1. **Plastic Flakes** — These come in large cartons containing sufficient material to cover an area about 49 square feet by two inches thick when loosely spread.
2. **Shaved Ice** — Can be obtained from any local ice house.
3. **Snow Blankets** — (Or synthetic cotton matting) Can be obtained at any upholstery house.
4. **Jetex Foam Machine** — This device attaches to a 1 1/2-inch water line affixed with a pickup tube. This pickup tube siphons out the Jetex fluid and mixes it with water to create a fluffy white foam, similar to soap suds. On a long shot it looks just like snow. It covers a large area, lies close to the ground and is probably the easiest for cleanup (just hose down the area), as well as the least expensive of all the methods of delivering snow to a set.
5. **Gypsum** — Gypsum comes in 50-pound bags, equaling 1/2 cubic feet per bag. Gypsum has several other names, including dolomite, lime rock, 640 and Marble White. To cover an area 50 feet by 20 feet by three inches deep, you'd need about 500 50-pound bags.
6. **Salt** — Salt placed in the corners of windows and on window sills looks very good. To prevent it from falling off, wet down the surface before applying the salt.
7. **Aerosol Shaving Cream** — I've used shaving cream on hard-to-stick-to surfaces like wire and chain link fences. A few plastic flakes may also be dropped on the foam with mica chips blown on the surrounding area to give a slight reflection and glare to create more realism.

Four Ways to Frost Windows

1. **Prismatic Lacquer** — When frosting a window to look like it's frozen with ice, use a fine brush to apply prismatic lacquer in the direction you want. When it dries, it looks like frost.
2. **Epsom Salts & Stale Beer** — While this is an old method, it remains in use because it has many applications and is simple. The formula is truly basic: One part flat beer mixed with two parts Epsom salts. Let it stand for a few minutes then apply evenly to a clean glass with a cotton ball.
3. **Freon** — To frost or steam the window, or any glass, simply spray it with freon. (Because of environmental regulations, check with your state's EPA office before using freon.)
4. **Liquid Nitrogen**—This can also be used. Caution: Liquid nitrogen is very cold, about 250 degrees below zero. Always use gloves, protective clothing and safety glasses.

Dripping Icicles

A dripping icicle effect on the corners of eaves, roofs and buildings can be achieved by using a Hudson sprayer with a small tube and a needle valve for adjustment. This makes it appear as though the icicle is dripping. The icicles themselves are made from plastic molds.

Breakaway Icicles

When molding icicles meant to be hit and broken, breakaway glass material of pycolastic or pycotext is used, as well as molded wax.

Another method of making icicles without moldings is to drip pycotext or pycolastic, paraffin, or resin on a fine fiber glass cloth or Saran Wrap.

Footprints, Hoof Prints, and Tire Tracks in the Snow

Here are several ways to create footprints:

Continued on Page 36

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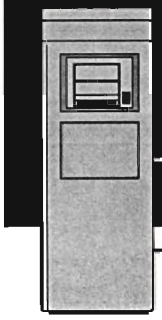

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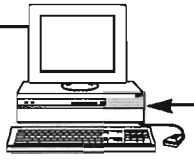

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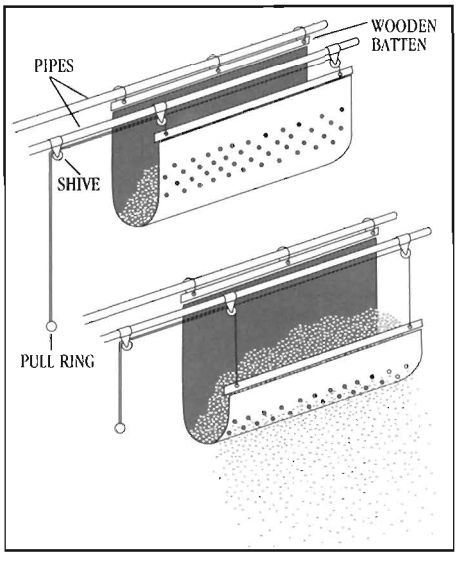
Special FX Continued from Page 34

1. **Shaved Ice** — Unfortunately, the footprints melt quickly.
2. **Pyrocel** — This is the white material dentists use to take impressions of teeth. It's similar to plaster of Paris and can be used for molds of footprints, hoof prints, tire tracks, etc.
3. **Tiny Beads of Styrofoam** — These are very small, almost the size of sand. When stepped on, they make good long lasting footprints. Footprints can also be made by cutting styrofoam into blocks, carving them into shapes and coating them with hot paraffin.
4. **Plastic Snow**—No. 5 is often used.



Snow Bag

Snow Sets

A snow set, whether indoors or outdoors, requires a spread of white muslin over the targeted area. White muslin has several advantages: First, it's fast and easy to clean up, and second, you won't have to use as much fake snow to conceal grass, cement, rocks, dirt, etc. Under the muslin, place sacks of sawdust to create mounds and additional wood and wire curves to give you the shape of things you require.

Snow Scene Check List

Here's a checklist to follow when you're doing snow effects:

1. On a roof you can use the following: white cotton and muslin, flocking, icicles, and a wood frame with chicken wire covered with muslin for buildup.
2. On a Lawn: For flocking trees, cotton batting is best; however, flocking presents a cleanup problem. When possible, use shaving cream and mica chips to achieve the same effect. For ground effects, you can use gypsum, or any white sand-like materials, such as lime rock, marble rock and dolomite. Remember, mica flakes and other snow dressings give you highlights for a better-looking effect.

Salt

Salt for dressing on rails and window sills holds up if you wet down the surface first. Never use salt if animals are on the set or if you are working near trees, grass or shrubs.

Chopped Ice — Snow Ice

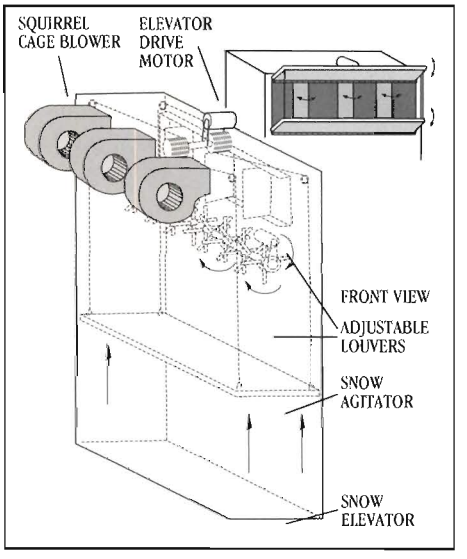
You can usually get a commercial ice company to come in and blow chopped ice on the set for you. It's the easiest way to go and is actually cheaper than trying to do it yourself. Snow ice is available from ice houses in 50-pound bags.

Frost and Ice on Vehicles

Hypo crystals dissolve easily in warm water. For best results, be sure to saturate the water heavily with hypo crystals. Lightly spray this mixture on a car and when it dries, it looks like ice. It is easily removed with water.

The New York Snow Machine

In New York, we used a snow machine which consisted of a deep hopper with a slotted opening at the top. Two bearings, a shaft and a propeller-type device drove the mechanism, which kept the snow moving. As the motors turned, an elevator pushed the snow up to blowers which in turn blew the snow out creating a snowfall. A regulator determined the speed and thus the density of the snow storm. I have only seen these



New York Snow Machine

machines used in New York, thus the name New York snow machine.

Hail Stones

Rock salt is often used for ice chips and chunks of snow. Rock salt can also simulate hailstones when used with a drop bag. As a substitute for rock salt, you can drop tiny white beans or white plastic beads.

Well, that's it for this issue. Have fun creating snow for your next video. If there are any questions about special effects, fax me at (818) 360-1462, or call us at (818) 368-5084.

VTU

Robert E. McCarthy is a special effects director, inventor and author currently working in the television and film industry.

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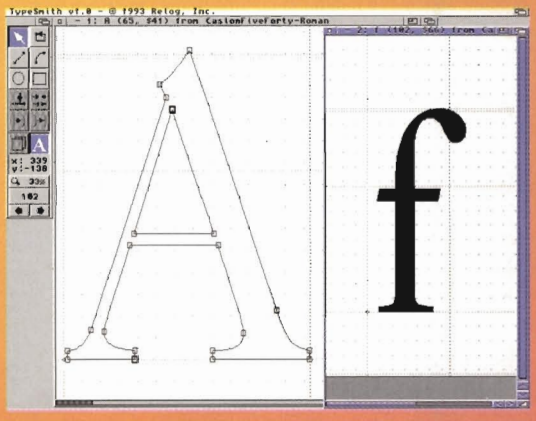

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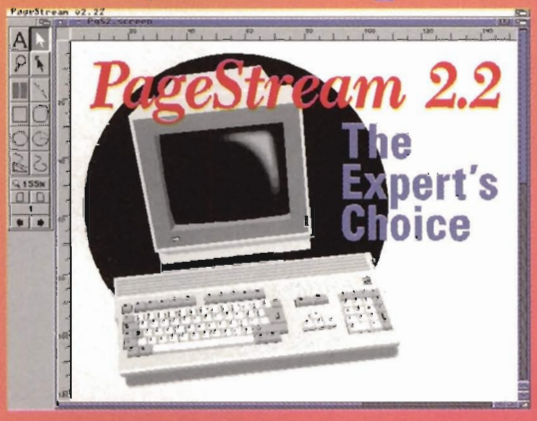

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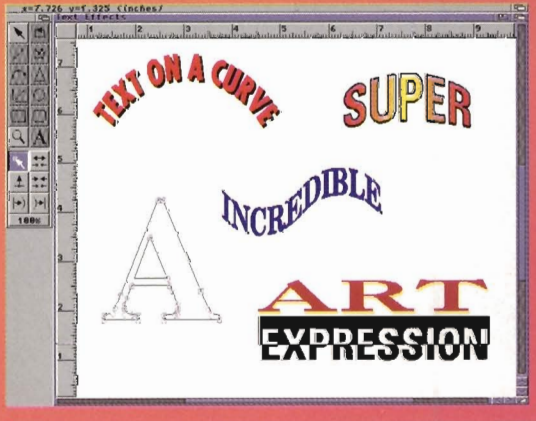

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Optimizing Audio: Leveling The Audio Field

By Cliff Roth

Most video producers know all about setting video levels using a processing amplifier (proc amp), but when it comes to the simpler task of adjusting audio levels, often things tend to get left on automatic pilot. For the nonperfectionist, this may be good enough; but for those wanting to squeeze every last drop of audio performance out of their equipment, leaving audio levels on automatic can often compromise quality in subtle ways.

When recording audio signals, the ideal level is generally the highest degree that does not produce distortion in the recording system. Recording at a high level gives better distinction between the audio you need and unwanted hiss and other background noise, producing a better signal to noise (S/N) ratio.

High Levels, Low Noise

Manual audio-level controls offer several distinct advantages over automatic level control (ALC) systems. Among other things, they allow recording at higher signal levels, potentially reducing noise.

You may not hear much background noise on a first-generation audio recording, but as you edit, the noise increases with each generation. This also happens when you mix several tracks together. As the S/N ratio at each step of the production/post-production/distribution process increases, noise decreases.

Technically speaking, with Hi-8 equipment, you can expect S/N ratios of about 75 decibels (dB) on the auto frequency modulation (AFM) tracks, and 80 dB on the pulse code modulation (PCM). With S-VHS equipment, expect about 50 dB for the linear track, and about 80 dB on the hi-fi tracks. For 3/4-inch equipment, audio S/N ratios are around 65 dB.

What these numbers translate to is this: The VHS linear track is noisy to begin with, whereas the others are reasonably clean. Ironically, the VHS linear track is the one most likely to be strictly automatic.

Automatic Level Offenses

ALC works by responding to peak levels. When it hears a loud sound, the recording level is decreased; when it hears little or no sound, the recording level increases. It usually takes about two seconds for ALC to respond to changes in sound pressure levels—engineers could easily create circuits that respond faster, but such settings create an undesirable pumping sensation, where the background noise constantly goes up and down.

As an example, if a reporter stands on a street corner speaking into a microphone, and there is a sudden loud sound, like a car horn, the reporter's voice tends to fade down for a couple of seconds—even though the loud event may only last for a fraction of a second. Similarly, if someone speaks at a podium and bumps into the microphone, the ALC fades down the voice for a second or two.

Perhaps the most bothersome aspect of ALC occurs every time you start a recording. Suppose you start recording in a quiet room, and then cue someone to begin speaking about five seconds later. By the time the person talks, the ALC has already boosted the recording to near maximum level, since it was straining to hear anything at all in the quiet room. As a result, the first word the person says is typically recorded in distorted form. A second or two later, ALC lowers the recording level, and the voice sounds fine.

You can avoid this glitch by asking the person to speak a moment before, so the ALC adjusts itself properly. Have them repeat the first word that they're going to say, such as "Hello...Hello, my name is John Doe." You can edit out the first word later.

Fancier industrial and broadcast VCRs generally offer a limiter, instead of ALC, to prevent this problem. Unlike ALC, a limiter does not boost low audio levels—it only reduces levels that are too hot.

Most ALC and limiter systems are very conservative, meaning they tend to leave a large amount of headroom between the selected recording level and the point where distortion occurs. This leads to a more subtle loss of overall recording quality. With manual level controls and volume unit (VU) meters, if you know the loudest level you'll encounter, you can set recording levels so that the loudest sound is just a hair below distortion, and everything else is good and strong (see VU Meters, later).

Musical Mayhem

When recording music, the ALC effects are essentially the same as using a compressor to narrow the range of levels. Compression techniques are commonly used in popular music to make recordings more pleasurable in automobile sound systems,

Continued on Page 40

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Sound Reasoning Continued From Page 58

where background engine and wind noise can mask low music levels.

But professional audio engineers warn against over-compressing music, which can lead to a canned, muddy quality. Such over-compression can easily occur when music is repeatedly recorded using ALC equipment—where music is further compressed with each additional generation.

Unfortunately, there's no simple solution. If maintaining music fidelity is important, then you must have manual level controls.

For musical recordings, the hi-fi tracks on VHS and S-VHS tapes are generally preferable to the AFM on 8mm and Hi-8. Not only do they have better frequency response, dynamic range, and stereo separation, but finding low-cost equipment with manual level controls is much easier for VHS hi-fi than for 8mm AFM.

Manual: A Missing Feature

Unfortunately, most high-end consumer and low-end industrial camcorder and VCR equipment do not provide manual audio level settings. This problem is my biggest complaint about Sony's new CCD-VX3 camcorder, an otherwise excellent product that breaks previous price barriers for three-chip imaging. But the CCD-VX3's AFM audio, which has excellent frequency response, is strictly automatic. By contrast, Canon's lower-priced A1 Digital and L1 camcorder models both offer full manual-level control (including separate settings for left and right channels), though image quality is limited to one-chip technology. Sony's three-year old one-chip CCD-V5000 camcorder has manual-level controls, too, as well as PCM audio.

Even Sony's flagship CVD-1000 V-deck Hi-8 VCR, designed specifically for personal video applications, lacks any manual-level control for AFM audio recording. (The PCM tracks have manual-level controls, which are adjustable with software compatible with Sony's VISCA serial port protocol.)

Over in the S-VHS camp, manual-level controls for the stereo VHS hi-fi tracks are fairly common. Panasonic's two-chip AG-460, along with some top Panasonic and JVC S-VHS-C camcorders, and Panasonic's AG-1970 and AG-1960 editing VCRs, all have manual hi-fi recording-level adjustments. Many VHS hi-fi VCRs in the $500 to $1,000 price range have manual hi-fi recording levels, and practically every S-VHS deck has them. But it's difficult to find a manual control for the VHS linear audio track.

Of course, in most cases adding manual controls to any camcorder format or VCR probably costs less than a dollar or two. But manufacturers assume most consumers don't care about this feature.

VU Meters

Another related problem is the lack of volume unit (VU) meters for setting manual-level controls. This problem occasionally occurs when using digital audio computer boards to make digital recordings on a hard disk; it also plagues PCM tracks with the aforementioned Sony Hi-8 V-deck.

The VU meter is one of the two most important tools for setting levels—the other being your ears. There are two types of VU meters: peak reading and average. Peak reading is generally more useful for setting levels, due to its ability to predict when distortion may occur. Average reading meters are based on the mechanical ballistics of old-fashioned VU pin meters, (although today they're more likely to be electronic displays). Average meters thus conform to what audio engineers are accustomed to, and are very helpful in broadcast applications to see the effects of compression.

A peak holding VU meter incorporates a memory system that displays the highest level reached in the previous few seconds. When you're flying blind, and setting levels without the aid of any meters, run some tests with a loud sample of what you intend to record, and trust your ears. Keep increasing the recording level, and listen for distortion on playback. Since the more subtle forms of distortion may not be readily apparent, and to leave some headroom if actual levels should exceed the test sample, lower the recording level slightly from the optimal point (the highest level without distortion). Be sure to actually record a brief sample and play it back—just listening through headphones with the VCR or camcorder in pause position won't catch all forms of distortion.

Even when VU meters are available, you may occasionally find they're out of calibration and that your ears are a better judge. In professional recording facilities, VU meters are recalibrated on a daily basis using test tapes that are custom designed for particular brands and types of tape stock. The VU meters on VCRs are rarely recalibrated, even though tape formulations may improve. And, as mentioned earlier, the VU meters tend to be conservative—you may be able to get better S/N performance by recording at levels higher than 0-VU.

The Acid Test

When you have the time, run an experiment. Try recording a few different types of program material (music, dialog, sound effects) using recording level settings that register +3 or even +6 on the VU meters. Play back these recordings on a good stereo system, and listen carefully. Invite friends with good ears to listen, too. If no additional distortion is apparent, and the recordings have more punch than with the 0-VU setting, then start using the higher levels in your projects. (Or, if you've got an oscilloscope, conduct the experiment with 1-kHz and 10-kHz sine waves, and look for distortion.)

Knowing that the calibrated 0-VU meter levels actually represent a point that is some six dB to 18 dB below the point of tape saturation, many recording engineers commonly make all their tracks hot, with meters pinning, to minimize the presence of noise in a recording. The technique works; however, the closer you get to the distortion point, there is less margin for error.

The bottom line, when it comes to setting audio levels, is to trust what your ears tell you—not what the meters say. But that advice is only relevant if you can turn the ALC off. Unfortunately, with today's low-budget video equipment, having the option to set audio levels manually is often just a luxury.

VIU

Cliff Roth is a freelance writer, independent film/video producer and desktop video consultant. His recently published book, The Low Budget Video Bible, *is available from Publishers Distribution Service (PDS) at (800) 345-0096. Send your sound-related questions to Box 668, Peck Slip Station, New York, NY 10272.*

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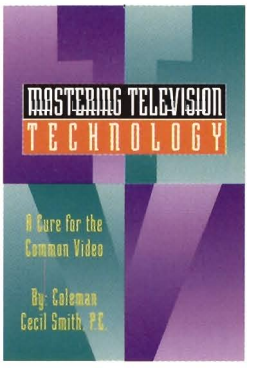

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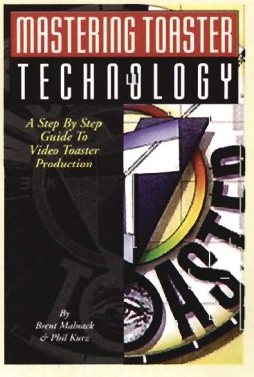

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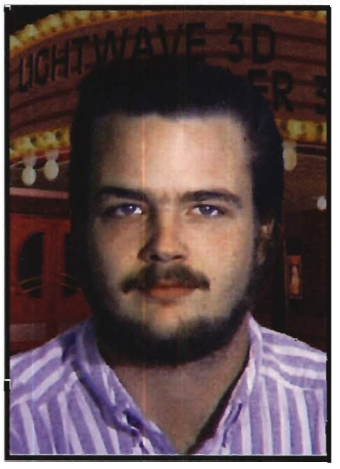
TAMING THE WAVE

By David Hopkins



Welcome to Taming The Wave—the column devoted to exploring LightWave and finding the ultimate cool tricks. Without any further fanfare, let's get right to the action.

In this installment, we're going to take a look at a few neat techniques that are fairly quick and easy. I'm not going to create complete animations with them; instead I'll leave that to you.

More Fun With A Null Object

In the April/May issue of *Video Toaster User* we looked at using Null Objects for tricks with bouncing letters. Here's another interesting use. Enter Modeler and clear the screen. Generate a default ball shape by choosing Ball from the Objects menu, clicking Numeric, then OK, and Make. This default ball doesn't look very round for a final animation, but serves our purposes. Save the ball as *VTUBall.lwob* and return to LightWave.

Load the VTUBall into LightWave and then load a Null Object. (To learn how to make your own Null Object, check in previous installments of Taming the Wave.) Enter the Layout area of LightWave and make sure you are looking through the Camera View. Pull the camera back (on Z only) to Z=-24. This should give you a fairly long shot on the ball. Create a key for the camera.

Make the current object (under the 3D view) VTUBall, then Set Parent. This object's parent should be set to Null Object. You don't need to create a key when you change parentage, so don't bother yet. Now that the ball is attached to the Null Object, raise the ball to a Y position of 4. This time you do want to create a key.

Change the Mouse Function to Rotate and click Numeric. Change the Bank to 1,440 and click OK. Now, press Return (which brings up the Create Key requester) and type 130, making sure that you are working with the Selected Item Only and hit Return again. You've just created a key frame for the ball at frame 130, where it will have revolved four times.

Did you notice that the ball stays stationary in the view? There are two reasons: First, we rotated the ball precisely four times, so it is in the same orientation as when it started to spin. Second, the ball did not revolve around the Null Object! Let's see what this allows us to do.

Make the Null Object your Selected Item and create a key at frame 45 for the Null Object only. Now, with Mouse Function still set to Rotate and all axes locked (pulled out) except Bank, rotate the object counterclockwise to 180 degrees. Create a key at frame 85. Change the Mouse Function to Move and scoot the Null Object over to X=15. This should put the ball just off the right side of the screen. Create a key for this at frame 0. Rotate the Null Object on Bank to 180 degrees again and create a key at 130.

Exit Layout and go back to your Scene panel. Set First Frame to 1 and Last Frame to 130, return to Layout and make a Bounding Box preview. As you can see, the ball (or in bounding-box view, the box) is spinning while it travels straight, is spinning while it orbits halfway around the Null Object and is spinning as it exits. This is because the ball itself has only two jobs: Stay four meters away from the Null Object and spin four times. The Null Object is providing all other motion.

I pass along this tidbit because it has many possibilities. For example, imagine cutting the distance between the Ball and the Null over the course of the animation to provide a slingshot effect. Or try parenting this Null to another Null, allowing three different motion modifications per frame.

Details, Details, Details

Did you ever notice the buttons in Modeler marked Attach and Detach? They're found in the Polygon options, but do you use them? If you're like most people, the answer is probably no. You may not even know what they do. The good news is these two buttons can save you a lot of grief.

Imagine that you need to make a 3D-compatible business card for an animation. You've got to glue a company logo, slogan, etc., onto a flat surface and be able to move around it in 3D. How would you do it? I'll show you an easy way.

Enter Modeler and clear the screen. Load *Common.Cap.V* from the Common drawer of the Objects/Fonts directory. Go to layer 2 (buttons in the upper right corner) and load *Common.Cap.T*. On layer 3, load *Common.Cap.U*.

Place layer 1 (*V*) in the foreground and layer 2 (*T*) in the background. Use Modify/Move to slide the *V* just to the left of the *T* as seen in the Back view. Now put layer 3 (*U*) in the foreground and layer 2 (*T*) in the background. Move the *U* just to the right of the *T* in the same view. Hold down Shift and click on the first three layer buttons to put them all in foreground; it should look like Figure 1.

Click the Volume Select Mode until it reads Include. In the view named Left, drag a selection box around all the points on the right. When they are enclosed, click Cut. We just cut away the depth of the letters so each letter is flat. Notice, however, that the face of the letters is not at 0 on the Z axis. You can tell this by looking in the Left view.

From the Modify options, choose Scale. (Don't use Size because the trick won't work correctly.) Click Numeric. Make sure that all of the Centers are set to 0 and X and Y Factors are 1. Set Z Factor to 0 and click OK. The letter faces all scoot back to 0 on the Z axis. If you set the Z Center to 10, the letters all move to Z=10, get it?

Click Cut with all three layers in foreground. Now, click Paste. This consolidates all three into one layer. Save this as *VTU.wrd*. I use the *.wrd* extension to make it simple to find text objects in my library.

Make layer 2 foreground. Layers 2 and 3 are now empty because we cut them out to layer 1, remember? Press *A* to autofit the text in the viewscreens, then press < twice. From the Objects options, choose Box and draw a box from X=-2 meters, Y=1 meter to X=2 meters, Y=-1 meter, in the Back view. Make sure the

Continued on Page 44

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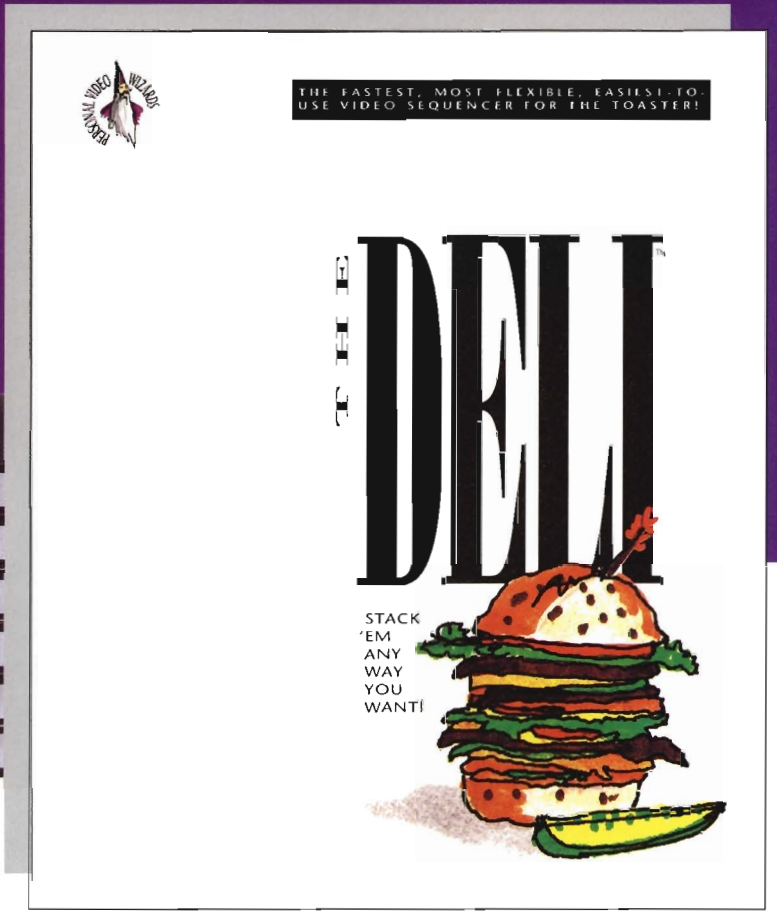

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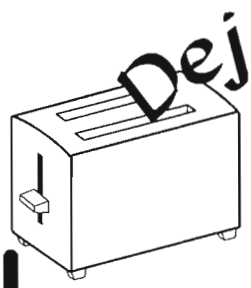

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Taming The Wave Continued From Page 42

box edge is white and seen on exactly the same plane (z=0) as our text in the Left view. Click Make. You now have a double-sided rectangle which is our business card.

Change to Polygon Select Mode and click on the edge of your new box. We have two polygons, but we only want one. Press *I* to bring up the Polygon Info window, then click Deselect. This means you are now holding only one polygon, as you can see below the Select buttons. Click Cut. Now only one polygon is left— the one you deselected.

Click on the edge of your box again. You should see only one polygon normal (the dotted line extending away from the box in the Left view). If this normal points to the left, fine. If not, press *F* to Flip the polygon over. This assures us that we can see the box on the same side the letters face.

Cut the box and Paste it on layer 1, where your

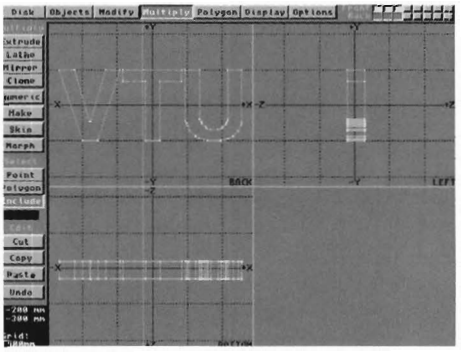

Figure 1

VTU letters are. Select the polygons that make up the VTU and then the box. If you let go of the mouse after selecting only some of them, you can hold Shift to select more. Make sure the box is selected last.

From the Polygon options, click Attach. The pointer changes into a little arrow with the word To connected. Point this arrow at one of the edges of the box and click. The *V,T*, and *U* should now be drawn in dotted lines. This means that they are *details* of the box polygon.

Save this layer as *VTUCard.lwob* and return to LightWave. Clear your scene if anything is there, and load the object. Go ahead and render it. Notice that the VTU, even though it is on exactly the same plane as the card's polygon, reads just fine. Rotate the object to a steep angle, say 81 degrees on Heading, and render again. The letters are still in perfect shape.

If the letters had not been made into details, but instead existed on the same plane as the card, the letters would flicker. This is because LightWave can't accurately decide which polygon is in front of the other. A detail, however, is always the last layer in the rendering of that polygon. In this case, LightWave draws the solid color of the card, then draws the letters.

With this trick you can save a tremendous amount of time from the old "cutting the shape out of the polygon" technique. Until next time, best of luck with your animations and graphics.

If you have questions, comments, suggestions, etc., please write to me at:

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The Boys

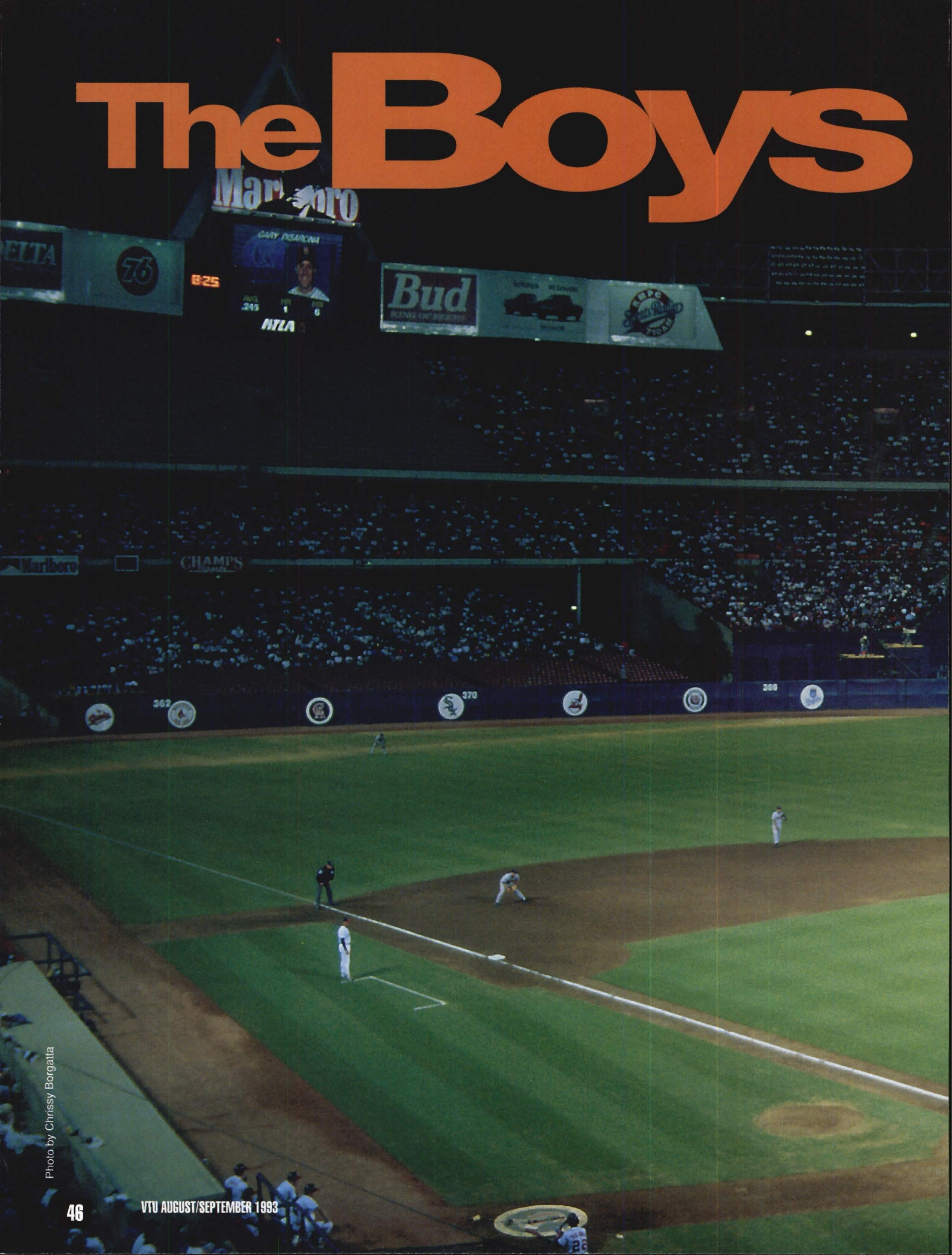


Photo by Chrissy Borgatta

# of Summer

By Angela LoSasso

The sun is shining, the weather warm—it's just another lazy summer day. The radio is tuned to the sports station because you don't want to miss hearing today's pitchers, lineups and updated stats and standings on the way to the ballpark.

After fighting traffic and bullying your way into a parking space that is so far away from the entrance gate that the stadium should offer tram service, you start heading toward the turnstiles. You look at your watch and wonder if you're early enough to watch a little batting practice and possibly snag a ball from your favorite player or have better odds pleading your "Slugger you have always been my favorite player, can you give me a ball?" case to a washed-up overpriced veteran. You decide your chances are minimal either way, but the day-dreaming makes the walk seem a little shorter.

You hand your ticket over at the gate, keep your stub and try to decipher where in the heck your seats are. Ramp after ramp, you keep climbing. Out of breath, you forget about recognizing players' faces and how the summer grass will smell, you just want to know if they supply binoculars with these seats.

You stop at the snack bar for a hot dog, soft drink and peanuts and after nearly emptying your wallet, head for your seat knowing firsthand how those million-dollar salaries are getting paid. All your sweet childhood memories of a day at the ballpark are shattered. You're angrily attacking your gourmet-priced stale-tasting hotdog as you scan the ballpark watching fans hustling to their seats and players lounging in the dugout when you notice the scoreboard—that huge TV screen in centerfield.

There's a welcome-to-the-ballpark message displayed on-screen. At least the owners have enough sense to welcome fans' dollars, you muse. Then the screen comes alive with a high-tech animation introducing highlights from around the league. You're watching a fast-paced, professionally-edited show of players smashing homers, making diving catches, stealing bases and painful homeplate collisions that would make the NFL proud. Next, there's an abbreviated version of *This Week in Baseball*—the weekly baseball update show that is broadcast nationally. Before you know it, your mood has suddenly reverted from the disillusioned, bankrupt show-me-that-you're-worth-two-million-dollars fan to the gee-it's great-to-be-skipping-work, I'm-getting-a-suntan-at-the-ball-park fanatic. You're hopelessly hooked.

That's Entertainment

Professional sports is a business. A big business. The entertainment business. Entertainment? Yes. Team owners know fans could easily take their $20 bills and go to a movie, or to a restaurant or to an amusement park. So, if they make the effort to come to the stadium, owners want to make sure they'll come back—come back again, and again and again.

Baseball management knows the game itself is no longer enough for the TV, video and Nintendo generation. Every minute counts; or should I say every half-inning, every pitching change and every timeout? Often, the inbetween-play entertainment—scoreboard animations, sports comedy videos and fan interaction— is more exciting to fans than the watching the game. The unofficial motto is keep the fans busy, laughing and well-fed and you've done your job.

Entertainment is a very competitive business. Keeping costs and ticket prices down while offering first-class amusement is a must in professional sports. And that's where the Video Toaster plays a major-league role.

"We have a 60-minute pre-game show and half-inning entertainment," says Anthony Fanticola, of the Philadelphia Phillies' Scoreboard and Phanavision Operations. "We use the Toaster in just about all of our segments for backgrounds, character generation and 3D animations. We're now doing things in-house that we used to subcontract out," Fanticola says. "Now we not only save money, but we save time. The turnaround factor for projects has been greatly reduced because we have a Toaster in our stadium studio."

The California Angels, known just as much for owners Gene and Jackie Autry and the team's proximity to Disneyland as they are for being perennial World Series no-shows, try to give Anaheim Stadium fans more bang for their buck. The Angels' Technical Media Entertainment Coordinator Rod Murray is using the Toaster for the first full season. "The department started out with absolutely no (video) gear at all," Murray says. "For

Continued on Page 48

The Boys of Summer

my first season in 1989, I used the City of Anaheim's scoreboard operation system. Slowly, but surely, we've been able to build our system to the point where last year, we made some significant inroads with a basic 3/4-inch cuts-only system.

"Now we've incorporated the Toaster and AmiLink edit system to offer more graphics and effects, animation and A/B-roll," he says. Murray has one other full-time staff member and several college interns working with the Toaster. "The biggest change the Toaster has brought us is the ability to work on-line during the game," Murray explains. "Because of the Toaster's built-in effects, all we have to do is cue an icon, whip it out and it's there—we immediately see feedback from the crowd. It's a cost-effective tool that provides relatively high-end results."

Courtesy Atlanta Sports Display

Big Deal

Why is the Toaster's acceptance into professional baseball such a big deal? All you have to do is pick up the sports page to understand what a heavyweight business Major League Baseball (MLB) is. The two latest MLB franchises were awarded to Colorado and Florida at the bargain-basement price of $115 million—each, that is. MVP Barry Bonds left the Pittsburgh Pirates to join the San Francisco Giants for over $43 million and the list of other millionaire players is too long for this article.

While owners are spending this much money, it's difficult to comprehend that a $2,395 Toaster is professional enough to satisfy their needs. Really, why not spend $100,000 or more for broadcast stock equipment, DVE units and the like? Actually, many teams have spent a fortune on broadcast equipment and have brought in the Toaster anyway.

"I admit it," says the Phillies' Fanticola, "I didn't want to tell anyone that I used the Toaster. At first, anyone considered an industry professional would voice their skepticism about whether this low-cost product could produce high-end results," he continues. "It was a status thing. I thought about starting a Toaster's Anonymous group." But through continued use and steady exploration of its capabilities, Fanticola no longer hides his enthusiasm for the Toaster. "The old 'low-end' argument doesn't work anymore," he says. "It's been great."

Team logos are designed and displayed with the Toaster.

Fish Out of Water

The Florida Marlins are the new kid on the MLB block; lucky for them a veteran was ready and waiting in Miami. Joel Tessler, director of Toaster Operations for Joe Robbie Stadium's Events Scoreboard Staff and Director of Miami-based Automedia, is the first person to use the Video Toaster in sports-related scoreboard operations.

Tessler's unique experience and talent—he has used the Toaster for the NFL's Miami Dolphins, and provided animations for the Pan American Games, Kuwait's Friendship Games and championship soccer in Poland, to name a few—is showcased at Joe Robbie Stadium's state-of-the-art facility. They have two 40-foot Sony Jumbotron scoreboards, two handheld, roving cameras, 120 video monitors, and complete TV/video production wiring throughout the stadium. "Because the Toaster is a fully-integrated platform, having a paint program, a character generator, all the Toaster digital effects also integrated with LightWave and ChromaF/X, makes it a viable system for a stadium and post-production for teams," Tessler says.

Tessler is also a consultant for Ft. Lauderdale, FL-based Sports Tech International, a company which bundles and customizes the Toaster for the sports industry. Tessler has been instrumental in designing a sports-specific system, called Sports F/X, creating croutons and a support system that understands a team's day-to-day needs. "Where a dealer understands video, they may not understand where a team may get into trouble, like a hard drive that can hold a large number of framestores— just imagine the scale of (stills of each player for) the entire National League— or instant replay," Tessler says.

With six years of scoreboard experience and copious mental notes, Tessler knows what a stadium needs. Sports Tech sold their Sports F/X system to the Marlins and brought Tessler along as an in-stadium trainer and consultant.

In addition, Tessler's company, Automedia, offers sports presentation software called SportsMate. With an easy-to-use point and shoot interface, the user can create a script to run TDEs, a character generator, and line crawls with sound effects. "At the beginning of every game at Joe Robbie Stadium, I use SportsMate to run a script that is one and a half hours long," Tessler says. "It may say, 'Welcome to the Marlins' inaugural year.' It comes up with about 24 framestores that continue in a loop until we're ready to start running commercials and start the game."

Tessler spent approximately eight hours per frame to capture the Marlins' motif. "The script comes on with a blank screen, then the LightWave-created welcome text enters, an embossed Marlins logo comes on the bottom, then it says: 'Welcome to Marlins Baseball.' Then there is a little star that comes up on Marlins, then disappears with a dissolve, and '1993' comes up with an asterized glimmer. A baseball stadium then appears after the Toaster's baseball pitcher effect, with a character-generated welcome message placed on the animated stadium's outfield fence." Tessler used LightWave's publishing mode and composited everything in ToasterPaint and Innovision Technology's Montage to create a clear, high-quality output that would make network TV executives drool.

Courtesy Atlanta Sports Display

LightWave-created animations and framestores are used live with other scoreboard entertainment.

Tomahawk City

With World Series appearances in two consecutive seasons, not to mention seasonal national cable-TV exposure on WTBS, the Atlanta Braves and their war cry-chanting tomahawk-yielding fans have made their way into millions of livingrooms. If you're not a Braves fan, the last thing you want to see and hear when your team is at Atlanta-Fulton County Stadium is 50,000 people chanting and tomahawking in unison for an offensive rally—it usually means your team is headed for a late-inning loss.

If you don't want to blame your team's bullpen, you might as well take your frustration out on Atlanta Sports Display's (ASD) Bob Larson, Danny Brown and Kent Worley. ASD produces the Braves' scoreboard animations, player stills and other game effects that often stir an otherwise listless crowd into a frenzy.

"We use the Toaster to do all the regular jobs, like player stills, video editing and character generation,"

Continued on Page 50

Off the Diamond

Okay, so you're not a baseball fan. Well, baseball isn't the only sport using the Toaster—the NFL, NBA, and next season, the NHL, are Toasting too.

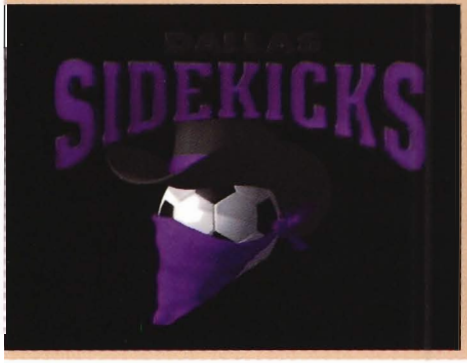
Jody Reimers, a freelance animator, has been with the NBA's Dallas Mavericks since 1989. He uses LightWave and Electronic Art's Deluxe Paint to create animations for Reunion Arena's scoreboard. Reimers also subcontracts his work for college football's Cotton Bowl, professional soccer's Dallas Sidekicks, the Harlem Globetrotters, the NCAA'S Southwest Conference athletic tournaments, and starting next year, the NHL's North Stars (who are moving from Minnesota to Dallas).

"I have a lot of fun; but if you don't like working nights, this probably isn't the job for you," Reimers says only half-jokingly. "If I had any advice for animators wanting to do this kind of work, I'd say get the fastest machine you can afford. The turnaround time needed for professional sports is so fast it can drive you crazy."

When asked about his favorite animation, Reimers says his choice differs from that of the Dallas fans. "I would probably pick something that took a lot of work and is visually stunning," he says. "But the fans like this dot-race animation that runs during timeouts." The race, created in DeluxePaint and run through a genlock during the game, features three colored dots: The yellow dot is named Arno, green is Hank and the blue dot is Bubba. "As you can imagine in Texas, Bubba is the fan favorite," Reimers explains. "In one version of the race, Bubba pulled up lame and he had to be pulled off on a stretcher, and the crowd was really disappointed. I even think there were some boos."

Reimers' Toaster work gets great crowd reaction and even helps fire up the Reunion Arena crowd—a difficult task considering the Mavericks had the NBA's worst record in 1992-93. "I can't wait for next season," Reimers says enthusiastically. "And now with the North Stars coming in, I'll be very busy. I just hope my wife will understand."

Courtesy Jody Reimers



Blazing Trails

Up in Portland, OR, finding a ticket for the NBA's Trailblazers is a major accomplishment. The Blazers made it to the NBA Finals in the1989-90 and1991-92 seasons and have arguably some of the most devoted fans in the league—possibly because the only other professional teams in the region are located in Seattle, WA. While the Magic Johnson-era Los Angeles Lakers were known as Showtime, for Portland sports fans, the Blazers are the only show in town.

"The fans are demanding," says i•media's Bill Davey, whose company supplies the Trailblazers with player still-stores, highlight packages and animations." We did the season opener highlight package this year and it received great response from the fans. We edited some amazing highlights together, including footage against Michael Jordan and the Chicago Bulls, and supplied individual player highlights for when specific players were introduced,"

Continued on Page 50

The Boys of Summer

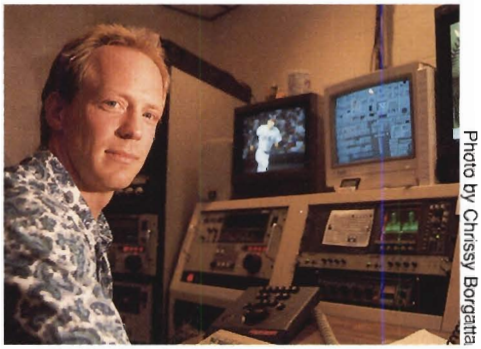
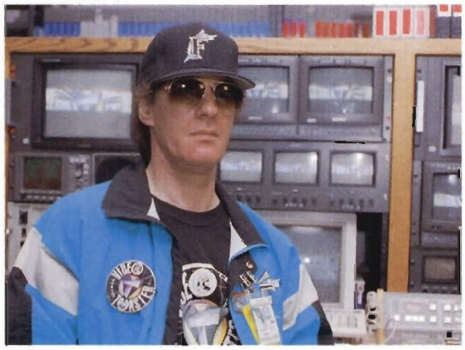


Photo by Chrissy Borgatta

Rod Murray, California Angels



Joel Tessler, Florida Marlins

says ASD's Bob Larson. "But it's fun to create something that makes the fans laugh or excites the crowd. The fans can get behind the team and make a difference (between a win and a loss,)" he says.

The Profit Margin

"I'm trying to make this department self-sustaining from a money standpoint," says the Angels' Murray—an effort surely to be applauded by the budget-conscious Autrys. "We're developing a strategy for financially profitable features, like selling season highlight packages that are advertiser-sponsored. In order to do this, you need cost-conscious tools and we plan to use the Toaster in production."

Joe Robbie Stadium's Tessler also uses the Toaster for many pre-game commercials. For a Tropicana orange juice commercial, he uses the Pour effect. For a Ryder truck ad, a truck wipe is used. And for a Delta Airlines spot, he uses an airplane wipe. "The fans like them and the advertisers are satisfied, too" says Tessler.

Fun, Fun, Fun

The Phillies' Fanticola has a 32 by 42 feet Phanavision scoreboard at his disposal. In March 1992, when he integrated the Toaster into a professional system that includes five 3/4-inch VTRs, an Abekas still-storage unit and several live-action cameras, Fanticola added a lot of flexibility. "We pre-produce on tape as much as possible when the team is away," he says. "And when the team is home, the Toaster is online, but in an off-line way." The Toaster is connected to Phanavision through an elaborate switcher system and is mostly used live for cuing still-stores (they have six stills per player per National League team). But when the team is away, the Toaster works overtime.

Fanticola, along with producers Dan Stephenson and Steve Kay and "Toaster guru" John Aquino, have assembled what is probably considered one of the most humorous and entertaining game packages in the league. This is no easy task considering that in addition to summarizing games and editing highlights, teams are obligated to inform fans of stadium rules and safety regulations—which in many ballparks is often just a prepared statement read by the public address announcer. "Warning fans about foul balls, broken bats and interference is serious business," Fanticola says. "So instead of just the P.A. announcement, we decided to create a Monty Pythonesque animation that is eye-catching and amusing, but more importantly gets the point across."

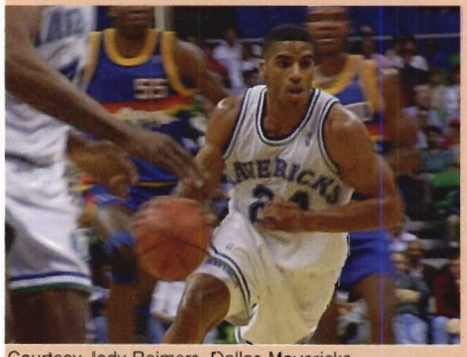
Fanticola et all have also created different animated openings for each entertainment feature. For example, for their daily highlight reel, the words "Action in the Majors" are keyed over an animated infield seen from an overhead view (similar to sitting

he says. "The Toaster has enabled a small company like ours to come in and do professional work so we don't have to work as hard or spend more money to show off our talent."

The Trailblazers Director of Game Operations, Jose Ayala, uses i•media's Toaster animations and his own broadcast-quality video and animations for game entertainment. "We use video animations with sound effects, about 10-15 seconds in length, after great plays or during timeouts," Ayala says. After a thunderous dunk, Ayala may use an animation where the backboard shatters complete with a glass-shattering sound effect. Ayala is impressed with the Toaster's quality and i•media's talent, "They've supplied us with high-quality work."

Moon over Miami

Joel Tessler does double-duty at Joe Robbie Stadium, handling Toaster operations for both the NFL's Miami Dolphins and MLB's Florida Marlins. "The Toaster has been of great use in post-game production, in addition to the live scoreboard stuff during the football game," he says.



Courtesy Jody Reimers, Dallas Mavericks

Tessler uses the Toaster to program VTRs and edit game footage for the Dolphins' post-game analysis. "On one machine we'll have all third and longs, on another we'll have first-down running plays and on another we'll edit together all the kicks," Tessler explains.

While Tessler's post-game editing may help the Dolphins prepare for the next contest, his LightWave animation work displayed on the stadium's two Jumbotrons has actually helped turn the tide in the Dolphins' favor during more than one game. "I have a couple of animations for the offense and defense

behind home plate). Then the camera moves downward towards the batter's box at field level where the word *Action* is front and center over the pitcher's mound. The camera contiues to zoom towards the mound like a line drive and heads right through the center of *o* in Action, splits the words *in the* hovering over second base and finishes flying over *Majors* into centerfield.

The Phillies' other entertainment pieces include Phillies Phlashback, Great Plays and Bloopers, Up Close and Personal and Phillie Sillies—a goofy crowd interaction game. "We really enjoy using the Toaster and LightWave," says Fanticola. "It's been great to create the animations ourselves, saving time and money. But there's even more satisfaction watching the crowd enjoy themselves—and the players, too."

Catch the Fever

Just when you thought you could escape to a ballgame and forget all your Toaster cares and worries, very soon you'll probably going to look up at a scoreboard and notice Toaster wipes, beveled edges, LightWave camera moves, familiar backgrounds and drop shadows. As the good word gets around the baseball network, you can bet there's going to be quite a few more Toasters at a ballpark near you.

You never know, instead of complaining about poor parking, stale hot dogs, warm beer and a bad call at the plate, you might just come away with a case of Toaster inspiration. At the very least, you can rest assured that your low-cost system is considered more professional with each new season.

VTU

Angela LoSasso is Managing Editor of Video Toaster User. *Before joining VTU, she wrote for another national publication and covered sports for two daily newspapers.*

Darren Metcalfe, Brandon Bogle and Bill Davey of i•media.

Bob Larson, Kent Worley and Danny Brown of Atlanta Sports Display.

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California Angels
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Anaheim, CA 92803

Florida Marlins
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Ft. Lauderdale, FL 33301

Sports Tech International
(305) 772-9155

Automedia
(305) 944-5656

Atlanta Sports Display
521 Capitol Ave.
Atlanta, GA 30312

that have instigated the crowd to get on their feet and chant," he says. "The place starts rocking and I don't know, I guess the team gets motivated." He's being modest.

Tessler's animations have also been used in professional soccer games in Poland, at the Pan American Games and at Kuwait's Friendship Games, which was televised to over 47 countries.

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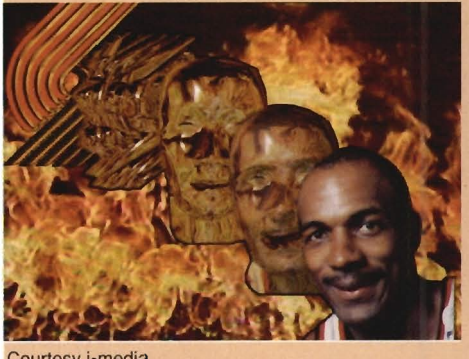
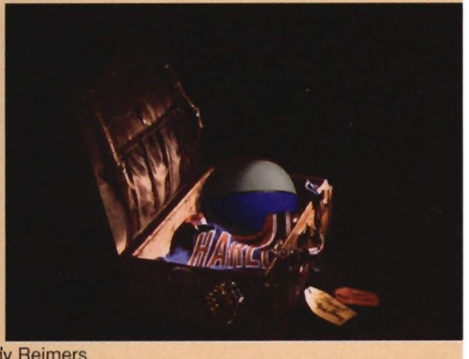
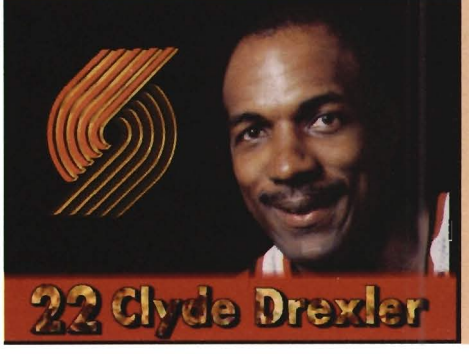


Courtesy i•media



Courtesy Jody Reimers



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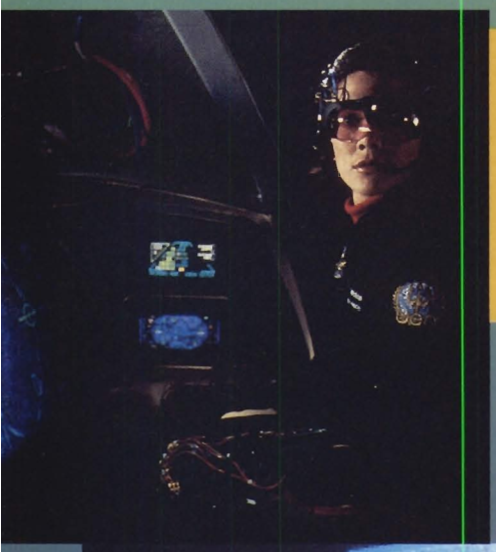
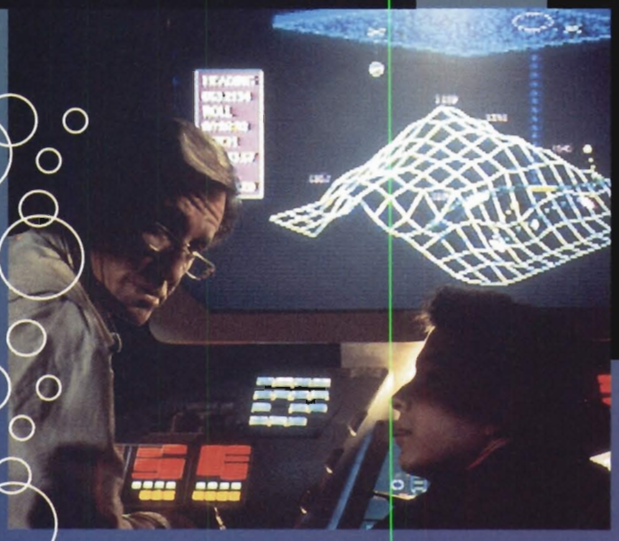




Images Courtesy Amblin Entertainment and NBC

by Angela LoSasso

Remember all the hype this spring surrounding the release of Steven Spielberg's major motion picture *Jurassic Park*? Well, get ready for a small-screen dose of publicity overload for Spielberg's new NBC TV series *seaQuest DSV* —a new hour-long futuristic action-adventure series premiering Sept. 12.

A co-production from executive producer Spielberg's Amblin Entertainment and Universal Television, *seaQuest DSV* (Deep Submergence Vehicle) is the story of a spectacular, technologically advanced submarine exploring the expanding oceanic frontier in the year 2018. While most Spielberg production releases are eagerly anticipated, this series is creating *a lot* of buzz, even by Hollywood standards.

Why? First, seaQuest received an unprecedented 22-episode commitment from NBC. Second, the series uses five Universal City soundstages—unheard of for television production. Third, and most impressive, seaQuest is using 75 visual effects in its premiere episode alone, more than appeared in the major film *The Empire Strikes Back*—and the computer-generated images are being created with the Video Toaster's LightWave 3D animation program.

The Toaster Goes Hollywood

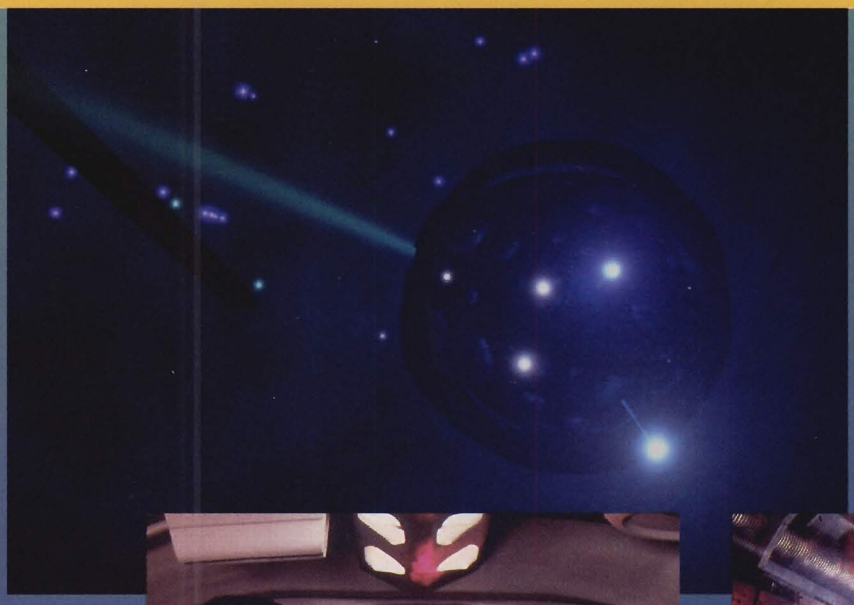
"We could not do this series without the Toaster," says seaQuest art director James Lima, whose set designs and underwater effects are very unique and ambitious. "If we used 'traditional' effects techniques, the costs would be too high."

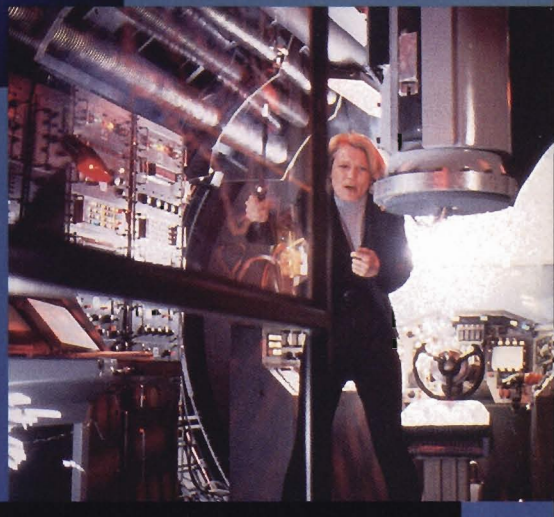
Lima, with an impressive resume of films, including visual effects Academy-Award winner *Total Recall, The Doors, Ghost, Days of Thunder* and *The Last Boy Scout*, and commercials for Pepsi (Michael Jackson and Ray Charles), Nike (Barkley of Seville, Hare Jordan I & II), Levis, United Airlines and Miller Beer among others, teamed with Amblin Entertainment vice president Phil Segal and a veteran writer to sell the series to NBC with only sketches and paintings and a short demo reel with LightWave animations by Joe Conti, Tony Stutterheim and LightWave programmer Allen Hastings. As for how they pulled it off, one theory is that having Amblin Entertainment backing a production ensures a certain guarantee for quality and authenticity. The seaQuest series is living up to that expectation.

The premiere episode is directed by Irvin Kershner, the director of *The Empire Strikes Back*. Dr. Robert Ballard, the famous ocean scientist and explorer credited with the discovery of the sunken oceanliner Titanic and the battleship Bismarck, is seaQuest's scientific consultant. The series also boasts Oscar-nominated actor Roy Scheider (*All That Jazz, The French Connection*), who worked with Spielberg on the box-office hit *Jaws*, and Stephanie Beacham of TV's *Dynasty* and *The Colbys*.

In addition to the performers and script, the authenticity and quality of visual effects is imperative for successful ratings. Today's sophisticated audiences won't settle for low-budget animations and scale models on a TV show when they can easily rent a feature film with full-blown effects for $1.50 at their local video store. Again, seaQuest rises to the challenge.

est DSV
e Scenes





The visual effects process is broken into stages. The script is written, then visual effects coordinator Nancy Shumovich breaks it down and determines a "shot list" for the animation team. Once approved, the shot list goes to storyboards created by Lima and then the boards are distributed among the animators.

The eight LightWave/Modeling artists then decipher what scenes, objects, ships and terrains have to be modeled. Once modeling is completed, the animation begins.

The Rendering Farm

Each seaQuest animator has a minimum of two Toaster workstations with LightWave 3.0/4000. There is also some cross-platforming, with Macintoshes used for surface design and transfers completed with ToasterLink.

The animators set up their scenes, run previews and get aesthetic approval from Lima. (As in typical production schedules, the seaQuest CGI [computer generated images] team holds daily meetings to critique animations and review assignments and scheduling.) After consulting with Lima, the shots are rendered.

Rendering is the most time-consuming task associated with LightWave animation, and at seaQuest it is not different —well, it's somewhat different. Leave it to Amblin to fulfill every animator's dream: a rendering farm.

In a small office (it's actually no bigger than a large walk-in closet) behind a closed door, is the 40-Toaster rendering farm. In a metal-wired shelving unit sits the envy of many Hollywood special effects houses. Forty Toasters with 33MHz '040s controlled by Nutopia's proprietary RenderMaster software send the frames to the server (10, 1.2-gigabyte drives) for temporary storage and the frames are eventually transferred to a recordable laser disk unit for reviewing the "dailies."

The dailies are then sent to the post-production unit and are cut into the live-action sequences. CGI then receives a copy to review how many animation frames are being used, how they are being used, and how to improve the quality for the next approval phase.

"We have a seven- or eight-day shooting schedule, which translates to a daily turnaround time for us," says CGI coordinator Taylor Kurosaki. "The turnaround time is crucial. The animator has to be able to set up a shot and then see that shot as soon as possible —maybe even in the same day," he continues. With the rendering farm, Kurosaki and the CGI staff are able to prioritize animations. All the previews are rendered in medium resolution with no anti-aliasing and no motion blur. "If an animator turns in a shot in the morning, generally they can see it that afternoon."

After final approval, the final animations are rendered with all the bells and whistles going directly from the machines to Exabyte tape, taken to the Post Group Digital Center in Hollywood, stored on an Abekas digital disk recorder and mastered in D-1. From there, the animation is cut into the show (for international release it goes directly to 35mm negative).

"There's really no limit here," says Kurosaki. "We've stunned film tests. We've seen our shots projected. The Toaster is, in my opinion, a viable feature film special effects tool."

Continued on Page 54

seaQuest DSV
Behind the Scenes

Deep, Dark Secrets

As you can imagine, designing a futuristic underwater setting complete with architecture and ships requires innovative artistry (seaQuest has no shortage of talent with Lima and Prodcution Designer Richard Lewis). In the CGI screening room, I was shown the show's highlight reel. At first, I was looking for familiar LightWave characteristics —I couldn't find any. Within 15 seconds, I had forgotten I was an objective journalist critiquing an animation and was completely enthralled and seduced by this undersea voyage into the unknown. Lima and the CGI crew have created an ambiance, that when coupled with the soundtrack, literally takes the viewer into another dominion. The sometimes murky, sometimes reflective sea, the ocean's mountainous terrain and the mysterious vessels are beyond a believable representation —they're so realistic, some viewers may think seaQuest borrowed some de-classified U.S. Navy underwater footage.

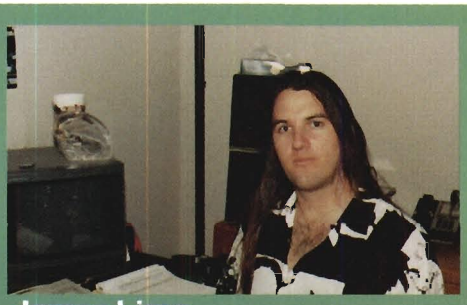
Amblin's Segal made the initial decision to go with the Toasters and brought in veteran LightWave animator Joe Conti to design, build, hire and train the CGI department (Conti, the original CGI director, has since moved on to feature films), while Producer Greg Feinberg (*Twin Peaks, Fire Walk with Me*) has provided the resources to expand the CGI division to its current elite status. NewTek and LightWave programmer Hastings have supported the project since its inception with new hardware and software, the basis of which are the Toaster 4000 and LightWave 3.0/4000.

With the Toaster, the CGI staff is able to work within a TV budget. According to the crew, seaQuest could not get this quality of effects with any other platform for the cost. Inquiries were made to special effects powerhouses Industrial Light and Magic, Metro Light and others, but NewTek's Toaster won out. Lima compares the Toaster's capabilities to traditional film effects equipment this way: "One beautiful advantage of the Toaster is that it has a built-in studio (LightWave) with rules much like a film studio —you just have to know where to cheat."

VTU

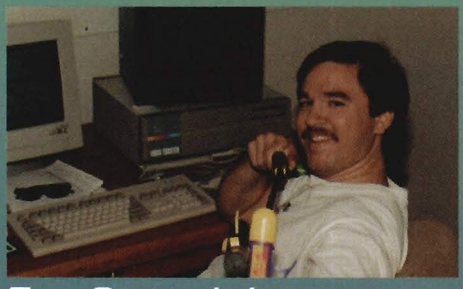
Angela LoSasso is Managing Editor of Video Toaster User.

THE CGI ROSTER



James Lima

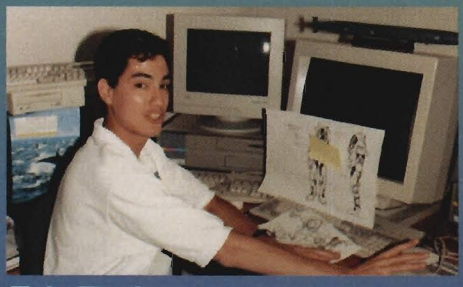
Taylor Kurosaki



Tony Stutterheim

John Gross

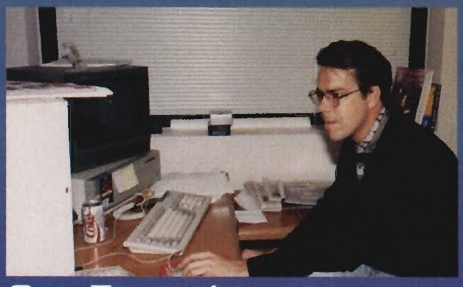
Jennifer McKnew



Eric Barba

Richard Payne

Ben Betts



Greg Teegarden

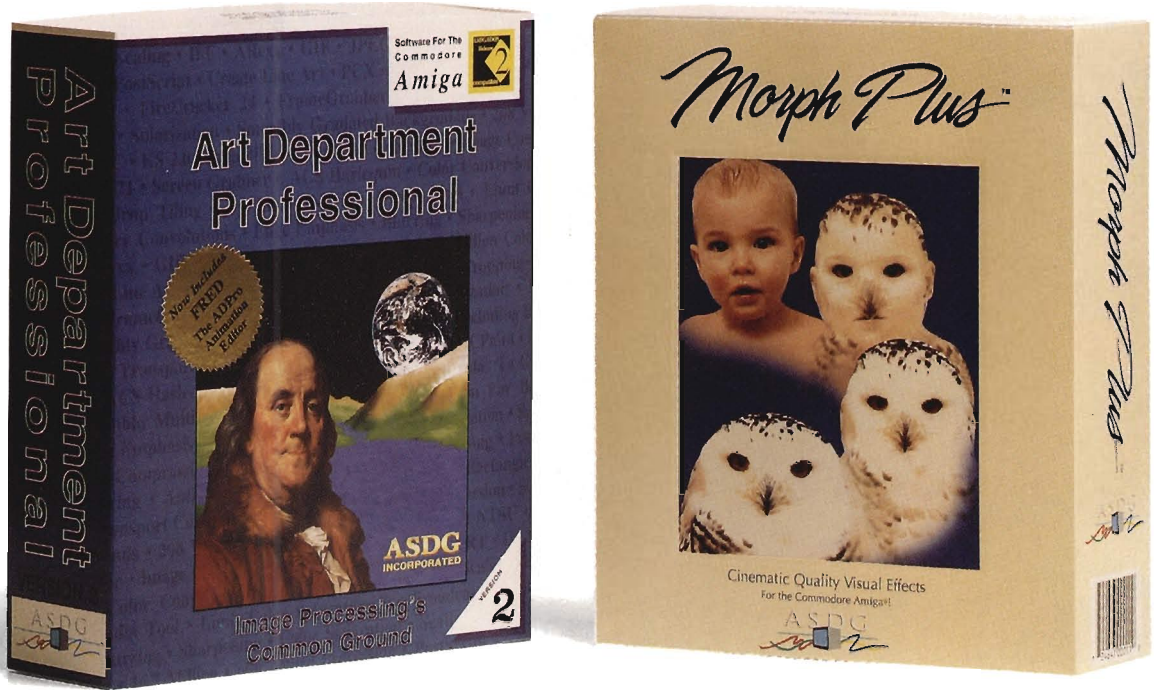
John F.K. Parenteau

Ken Stranahan

Ron Herbst

Fred Tepper

Bring Home The Best



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• The Post Group, one of the largest post production houses in the world, has used ADPro and MorphPlus in the production of special effects for the prime time TV show Quantum Leap and for major motion pictures.

• Mark Swain, an AmigaWorld reviewer (and animator for Foundation Imaging, the creators of the special effects for Babylon 5), said, "MorphPlus produces the most realistic shape shifting special effects I have ever seen on a desktop."

• David Duberman, Executive Editor of Video Toaster User, said in a comparative review of Amiga® morphing products, "MorphPlus is the Rolls Royce of Amiga® morphing software... it will pay for itself with one job."

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SONY
VIDEO
TOASTER

The Men Behind The Machine

An Interview With Tim Jenison and Paul Montgomery The Fathers of The Toaster

By Phil Kurz

At first glance, you might mistake NewTek founders Tim Jenison and Paul Montgomery for stand-up comedians. They carefully sew together the fabric of their conversation, delivering the pay-off with timing that would turn Jay Leno's head.

But look a little deeper and listen. You'll find two visionaries with their own view of how television ought to be made: faster, easier, cheaper and by a whole lot more folks.

Jenison and Montgomery are self-described filmmakers who were frustrated by the lack of affordable devices that would let them tell their stories with the same visual pizzazz that the networks routinely use.

Crossing paths in the Amiga community, the two shared their frustrations about the lack of affordable tools to make network-quality video. Feeding off each other's strengths—Jenison's Edisonesque desire to tinker and invent and Montgomery's P.T. Barnum-like knack for promotion—the two founded NewTek to solve their problem with video production equipment. From that partnership has grown the single most successful video production tool in history, the Video Toaster, and a desire to put it into the hands of hundreds of thousands if not millions of personal video producers.

I caught up with Jenison and Montgomery the day after they began shipping their recently introduced Toaster 4000. They spoke of their hopes and dreams for the video production community and where they plan to take the Video Toaster in the future.

In this, the first of a two-part interview with the men behind the machine, Jenison and Montgomery focus on their vision of personal video production and how the Toaster is helping to revolutionize the television and video business.

Video Toaster User: *How has video production changed since you first introduced the Video Toaster three years ago?*

Paul Montgomery: It's changed quite a bit. Before the Toaster was released, there was still the video high priesthood, which meant to produce a quality videotape you needed to access a switcher, digital effects, high-resolution character generator, paint and 3-D graphics. All of this stuff was very expensive and very difficult to use. When the Toaster shipped it changed the equation.

Now what was missing at first was talent. A lot of people wanted to make quality television and had no experience doing it, so they would buy a Toaster and make some of the worst tapes that I think anyone has ever seen.

Tim Jenison: We almost recalled the Toaster.

PM: Interestingly, they have all started to improve.

TJ: For the beginner, we see that the typical learning curve is between three and six months of thrashing around, making mistakes and making bad television. Then they start to mature, and you start to see it really click. We have seen this happen with a lot of people.

Obviously, a lot of Toasters went to TV professionals, and they knew exactly what to do with it.

Continued on Page 58

Jenison and Montgomery Interview Continued From Page 57

So what has visibly changed about the video industry is we are seeing far more Toaster-produced stuff.

Now it is kind of hard to see unless you look for it, but you are beginning to see a lot of diversity in television. There are a lot more wacky things getting on television.

PM: What is coming technologically, and it's a coincidence, is the arrival of 500 channels, and there's been a lot of people asking who will produce the programming to fill these channels. The answer is people with the Video Toaster.

VTU: *What was your vision for video production and where the Toaster fit in before you introduced the product? Has the Toaster delivered on what you envisioned?*

PM: I think we both knew the significance of the product and the message that goes along with it. But where is the Toaster market today? NewTek has been very successful, but we are at the very beginning. We talk about the Toaster market being maybe where personal computers were in 1976.

The Video Toaster is at the beginning of its life. The product category, personal video production still has a way to go. The Toaster was created to keep growing. Where this is headed is somewhere much grander.

TJ: We see the future as lower cost and easier to use. And we have been trying to do that with the Toaster all along. It was designed to be very low cost, and we caught a lot of flack for pricing the Toaster where it was. The users who were buying it weren't complaining about the low price, but it was the businessmen we knew. They said, "Oh, you're leaving money on the table. What are you thinking. That's no way to grow a company. What you do is start off with a relatively high price and if you feel like it later you lower the price." But that was exactly what we didn't want to do.

VTU: *Has that philosophy of simpler and less expensive carried over to the Toaster 4000 so that video production could become more accessible to newcomers?*

TJ: Our target audience was Paul's mom and my mom. We haven't achieved that yet, but we will. Right now you have to be Paul's brother to do it. We are approaching Paul's sister, but Paul's mom is not going to buy a Toaster tomorrow. She might next year.

PM: Toaster 4000 was a step in that direction. It was a simplification of the features, the main interface, another thing that makes it simpler is speed. Everything runs faster.

VTU: *How do you respond to critics of personal video production, particularly those from the broadcast and the high-end production community, who scoff at the notion of personal video production, saying that it is easier to watch an episode of* Home Improvement *than it is to produce it?*

PM: The president of a major network recently said that the only people talking about 500 channels and personal video production are the people making the equipment. That reminded me a lot of the people in the mainframe business when the personal computer first came out.

It has a similar feel to it. The personal video production equipment is to old-guard video equipment what personal computers were to mainframe equipment. The mainframe guys believed the mainframes would always be here. The personal computer would never replace it. There won't be enough people who would want to buy a personal computer. I know people who use old mainframes. There are not a lot of them out there.

So how do we respond to those who say that it is a lot easier to watch *Home Improvement* than it is to make? We say 'Yeah, you are right.' But people are still going to want to make it, and NewTek's job is to make it a lot easier.

VTU: *The Video Toaster is being used in personal video production, yet it's also being used on high-profile projects, such as* Babylon 5, seaQuest *and episodes of* Unsolved Mysteries. *Do you find it ironic that the Toaster fits into this high-profile work at the same time it's aimed at inexperienced video users?*

PM: We talked about this very thing when the Toaster was being developed. A lot of that is related to the 3D portion of the Toaster, and I remember when Allen Hastings, the programmer for LightWave, and Tim were talking. And I said, "So, what you are saying is that this will be as good as anything that you see at SIGGRAPH?"

He said, "Yeah, it will look just as good." I said, "Let me ask you again, what you are saying is that it will be as good as the logos that we see on television?" "Yeah, it will be just as good."

I was amazed just thinking about what this would do. But I think what is interesting is that *seaQuest* or *Babylon 5* are not the established effects companies buying Toasters and using them to do graphics. We have Toaster users creating their own demo reels and being hired by the studios.

TJ: One of the problems is what we call the baby duck syndrome. When a baby duck hatches, the first thing it sees is its mother. And after that, whenever it sees that thing, it knows it is its mother and from then on it follows it around. If a human being is there when the baby duck hatches it will follow the human being around. It doesn't know. It's just the first thing it saw.

The people who have used very expensive computers to do graphics or film for television, that system is their mother and it will take an incredible amount of evidence to change their mind. And now we are actually seeing a lot of those people saying, "What about this Toaster?" Economics are forcing them to look at the Toaster and take it seriously.

VTU: *Do you think that winning the Emmy for technical achievement is a sign that the video establishment has accepted the Video Toaster?*

PM: I think that is a real good sign, and I think that Emmy will help a lot of people in the business realize that the Toaster is a serious product. That is something that a lot of people in TV look for.

VTU: *What can you tell* Video Toaster User *readers about machine control and editing?*

TJ: Well, we are not real satisfied with the state of editing in the world today. We think that it really hasn't progressed the way that the Toaster has changed the rest of the postproduction phases.

The most infuriating thing about editing videotape now is dealing with the darn tape machines. So, I think technology can help, and we would like to help with the technology to do that.

The bottom line is stay tuned kiddies because we would like to solve that problem.

Editor's note: Next issue, Jenison and Montgomery explain the unique corporate culture that has grown up around NewTek, a working environment that drives the programmers and hardware designers responsible for the Video Toaster to improve the product constantly. In their own comedic style, the two also discuss how the video establishment has come to accept the Toaster and offer a clue about what's cooking at Alcatraz, the NewTek R&D lab.

VTU

Phil Kurz is Editor-in-Chief of Video Toaster User Magazine.

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Morgan Harbour

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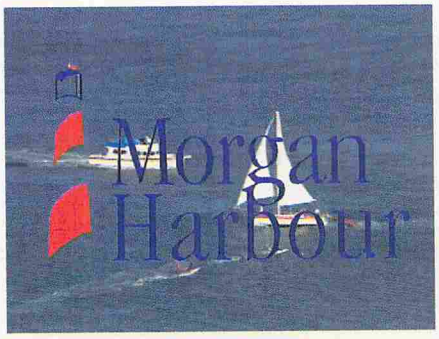

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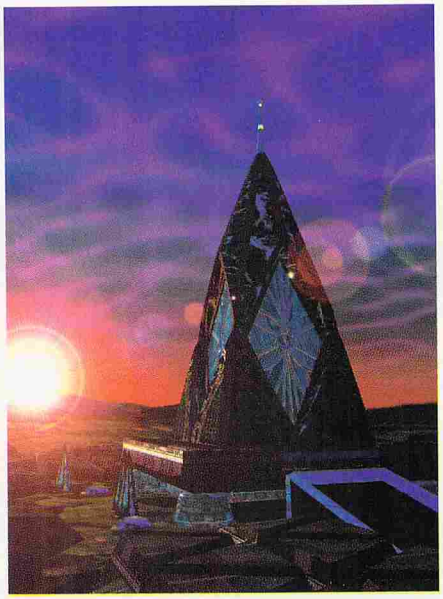

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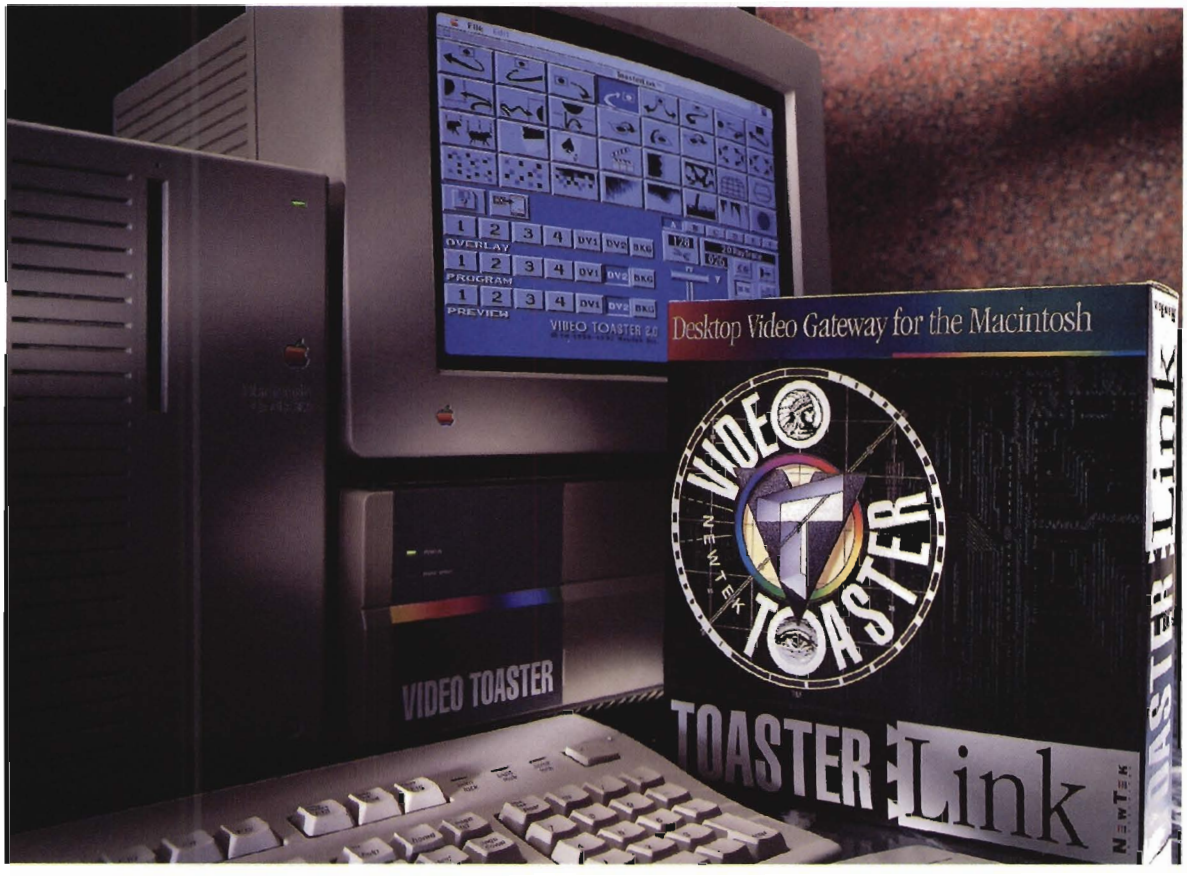

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The Toaster 4000

NewTek Delivers A Faster, Better, Easier Solution

by Brent Malnack

Not a company to rest on previous successes, NewTek has released the next generation in personal video production peripherals, the Toaster 4000.

The original Video Toaster was the first device to put digital video effects, a four-input switcher, character generator, paint system, color processing and 3-D animation into one card and software. Causing a revolution in the video production industry, NewTek put power and quality into the hands of many at an unheard of price.

Now, NewTek unveils a more mature, powerful Toaster in the Toaster 4000. The Toaster 4000 again consists of a hardware-software combination. When coupled with the recently released Commodore Amiga 4000, this product brings even more power to the desktop at a lower price than the original Video Toaster.

What's New?

The new, more refined interface is instantly noticeable. The hard, geometric look of the original Toaster has been replaced with an elegant easy-to-use layout. The Switcher screen still displays effect banks as before, but the icons for launching other Toaster programs, such as the CG have been moved.

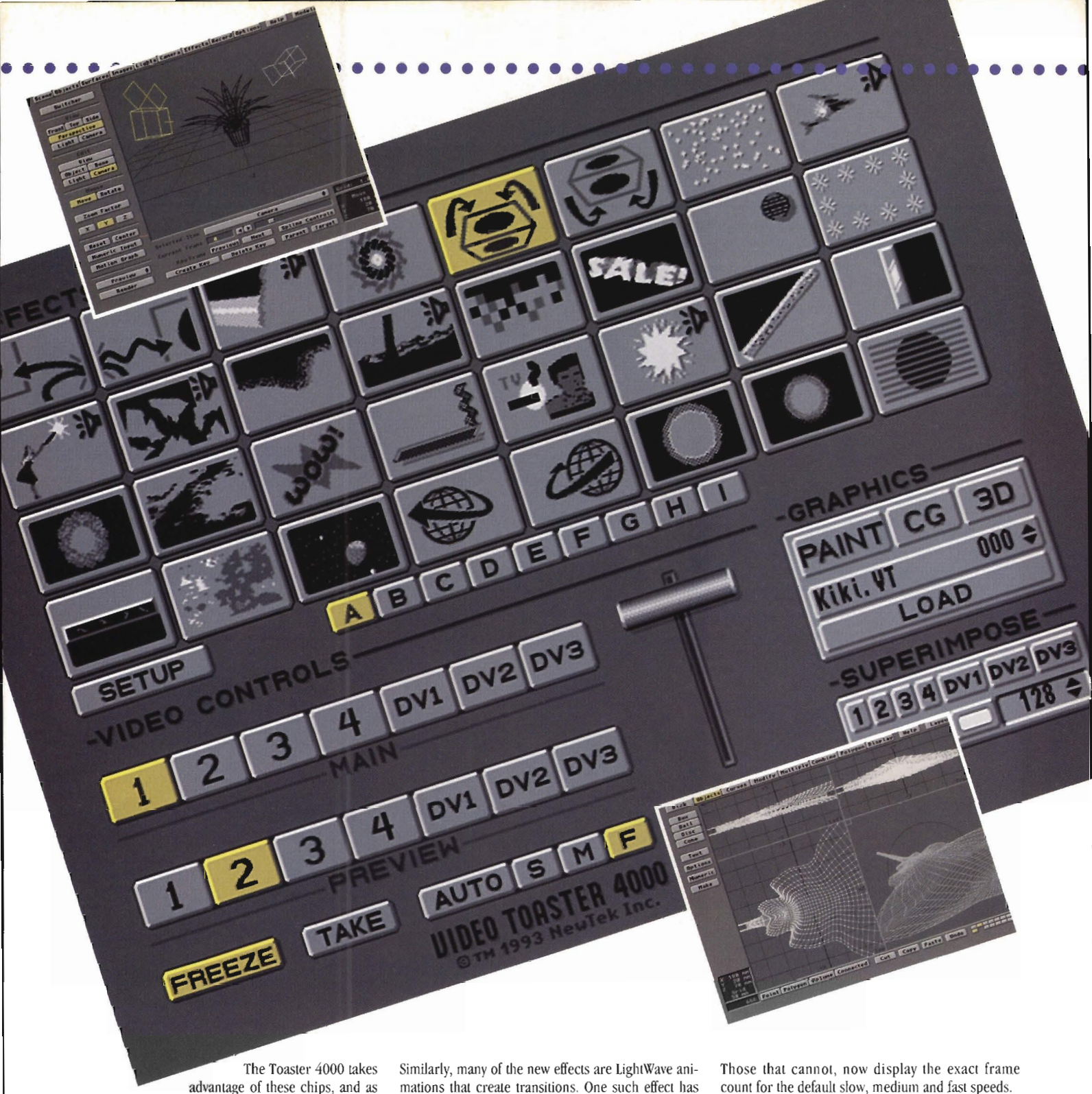
The preferences screen (now called Setup), also has been redesigned. In addition to the new layout, ChromaFX is now launched from here instead of from the Switcher.

New Menus

Throughout most of the new software is a new type of menu system that makes selecting items a lot easier. For example, when you want to load a framestore from the Switcher, simply click on the framestore name window and a new pull-down menu appears with a list of all available framestores. By dragging the mouse over the desired file name and letting go, it becomes selected. This menu system is used extensively in the new LightWave.

AGA Effects

One of the advantages of the Amiga 4000 over previous Amigas is the new AGA chipset. These new graphic chips allow more screen colors at higher resolutions than were previously available on the Amiga.



The Toaster 4000 takes advantage of these chips, and as time goes on NewTek will probably incorporate them more fully in future software upgrades.

Having this extra horsepower enabled NewTek to come up with a multitude of new effects, some of which are not possible on any other desktop video system on the market. In the Toaster 2.0 software release, NewTek created a stir with its animwipes. Some of the 2.0 animwipes, such as the KiKi effects, displayed a silhouette animation as the transition between video sources. These effects were limited to a one-color silhouette animation. With the AGA chipset, these silhouettes can consist of 256,000 colors. The new KiKi effects are no longer just her shape, but a full-color moving video sequence. Similarly, many of the new effects are LightWave animations that create transitions. One such effect has the LightWave spacefighter zoom across the screen and flash the new video source through the tail end of the ship with lens flare. These effects are startling. NewTek has included effects for every occasion, ranging from the event videographer to effects suitable for commercials.

Many of the new effects also include transparent dropshadows that give an effect added depth. A few effects include glints that place a light source on the video image during the transition. These nuances have positioned the Toaster among some very sophisticated and expensive equipment.

Many of the nearly 300 effects can now be set to an exact speed via the variable speed requester. Those that cannot, now display the exact frame count for the default slow, medium and fast speeds.

New CG

The character generator has also been significantly enhanced. In addition to a completely revised mouse-driven interface, many new features have been added. All CG functions are now available from mouse-driven menus. This new approach makes the CG faster and easier to use. Individual characters or blocks of text can be placed or moved anywhere on the screen with the mouse.

PostScript Support

The new CG has support for PostScript Type 1 fonts and AGFA Compugraphic scalable fonts. This is

Continued on Page 64

The Toaster 4000

important because fonts can be set to any size between 10 and 400 lines tall. An amazing collection of more than 250 new fonts has been included with the CG, making the available choices almost overwhelming. The downside of so many choices is that there currently is no guide to the fonts, which makes choosing a typeface time consuming.

Any PostScript Type 1 font can be added to the system, which opens the choices even further to include the thousands of fonts already on the market.

Alpha Channel

Greatly expanded is the CG's access to the Toaster's alpha channel. In previous versions of the Toaster, only the dropshadows could be transparent, and the level of transparency could not be changed. The alpha channel is now fully accessible from all areas of the CG. The text, edges, dropshadows or graphic elements can be set anywhere from solid to transparent.

Compositing attractive graphics is now easy with this feature. Text elements can be layered so that the more important text can be seen in front of background text. This feature will prove useful in creating business graphics. A screen could be composed of rows of dollar signs and numbers that are barely visible over a background image. The actual data could then be typed over this background. This technique is commonly used by television networks to compose graphics for news programs.

ToasterPaint Support

In addition to being able to load ToasterPaint images as backgrounds, individual ToasterPaint brushes can be loaded and placed with the mouse. The brushes also can be transparent. This new feature makes the CG the best way to composite graphics. All necessary brushes can be cut out and stored for later use in the CG.

Mix and Match

The new CG allows great flexibility in creating graphics. Multiple fonts and sizes can be used on the same line, and graphics or text can overlap. However, because the CG interface uses an eight-color interface, it can become complicated when several elements are on a given page. With the Amiga 4000's AGA chipset, it should be possible for NewTek to implement a color representation of the page as it's being built. This also would help when placing multiple brushes because they currently are represented by rectangles. Of course, all of the elements become visible when the page is rendered to a Toaster framebuffer.

"Hundreds of new features have been added, solidifying LightWave's dominance in the PC-based animation market."

I also would like to see a variable rate scroll and crawl. Currently, the new CG supports five speeds.

LightWave 3D and Modeler

Probably the most enhanced part of the Toaster 4000 are the new LightWave and Modeler. Hundreds of new features have been added, solidifying LightWave's dominance in the PC-based animation market. Some of the new features are only found on systems costing thousands of dollars more than the entire Toaster 4000 system. LightWave's interface has been redesigned for speed and ease of use. The entire program is now operated from within the Layout window. At the top of the screen are buttons to access the various control panels, such as Scene, Objects and Images. Selecting one of these buttons brings the control panel in front of the Layout window. When the panel is exited, the action picks up again in the Layout window. The list of new LightWave features could easily consume this whole column so I will touch on the highlights.

Bones

LightWave has added powerful character animation capabilities with the addition of Bones. These skeletal elements can be added to any model, allowing it to be animated by moving the various bones. To create a walking character, Bones would be added to match the various limbs. When the Bone is moved or rotated, the portions of the model nearby follow the changes. If the forearm Bone is moved, the arm will move without becoming detached from the upper arm. In essence, only one version of a model needs to be created.

Lens Flare

LightWave's new Lens Flare option adds realism to renderings at a touch of a button. As with most LightWave functions, the Lens Flare effect itself may be animated via an envelope. This allows simulation of headlights, stars, spaceship engines and the sun. It also can be used to place a transparent glow behind a logo. Selecting Lens Flare is as easy as turning it on for a given light source.

New Rendering Modes

A host of new rendering options have been added to LightWave. In addition to the resolution selections of version 2.0, field rendering, sophisticated antialiasing routines, full-motion blur and depth of field have been added. Intended for animation purposes, field rendering makes motion smoother by rendering two

Continued on Page 66

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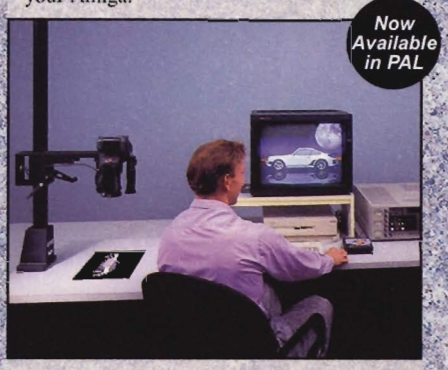

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The Toaster 4000

individual images for each frame of video.

Antialiasing is now much cleaner than before, making rendering in Medium Resolution suitable for all video applications. At higher levels, a Medium Resolution image from this version is much cleaner than a Print Resolution image from Toaster 2.0. This feature means faster rendering times and better images.

Motion Blur is now possible on objects instead of simply particles, such as like stars. Activating Motion Blur will make the motion much more realistic as any given frame will display some blur, much like pausing a video frame on a moving item. Motion Blur takes longer, but produces wonderful animations.

Depth of Field makes objects that are beyond a certain distance out of focus, which is another great feature when realism is desired.

Animations from RAM

With the Toaster 4000, LightWave animations can be played back in real time from RAM. Once the animation file has been rendered to the hard drive, it can be loaded and played from the Switcher. A 16MB system allows about six seconds of animation, which is more than enough for most applications. These 256,000-color animations look great, but don't match the Toaster's output quality when single frame recording is performed. However, for animators on a budget this feature may be sufficient.

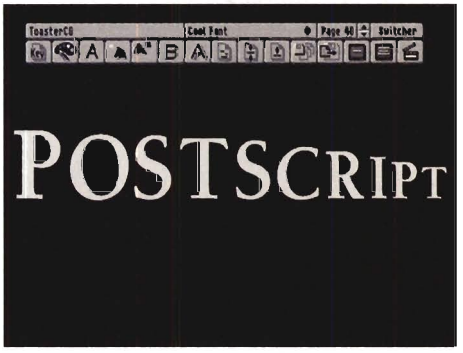
Rendering times are greatly improved with this version partly due to LightWave's recompiling for the 68040 processor. Scenes should render at least twice as fast as the same scenes rendered with version 2.0. Sometimes they render much faster than that. A word of caution, overall rendering time for many great new features, such as motion blur and field rendering, may increase.

Modeler

LightWave's Modeler also shows great growth this time around. A completely renovated interface and a host of new features have made Modeler more powerful and easier to use. Boolean operations have been added for cutting and drilling operations, a freehand sketch tool was added and spline curve support has made its way into Modeler as well.

The interface still consists of a tri-view and perspective window, but the buttons have been rearranged and enough tools exist to make great models with little effort.

"Boolean operations have been added for cutting and drilling operations, a freehand sketch tool was added and spline curve support has made its way into Modeler as well."



Modeler can load the same PostScript Type 1 fonts that the CG can, making logo and text animation a breeze. With the added bevel tool, logos can take on a broadcast look with the click of the mouse. This new Modeler is fabulous and should be easier for the novice than previous versions.

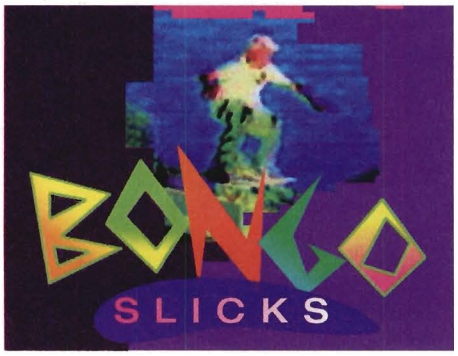
New Hardware

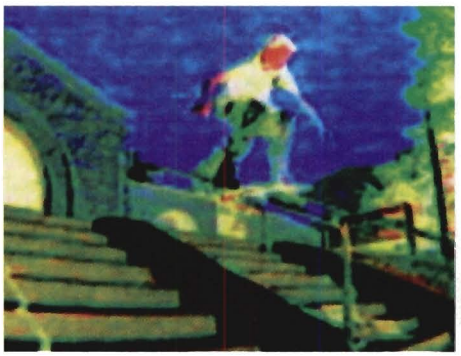
As if revamping the software was not enough, NewTek has improved the Toaster hardware too. The Toaster's output quality is even better than before with the addition of some new filters on the board. Again, the genlock quality has been enhanced and is finally where it needs to be. Timing the Toaster into other video equipment is easier because NewTek has added pots for timing adjustment.

NewTek has truly pushed the envelope again with the Toaster 4000. The advancements of the Toaster 4000 should enable any Toaster owner to produce high-quality video and animation with incredible ease.

VIDI

Brent Malnack, former NewTek LightWave Product Manager, is a professional animator with the Great Plains Motion Picture Company in Omaha, NE. He recently co-authored the book Mastering Toaster Technology.





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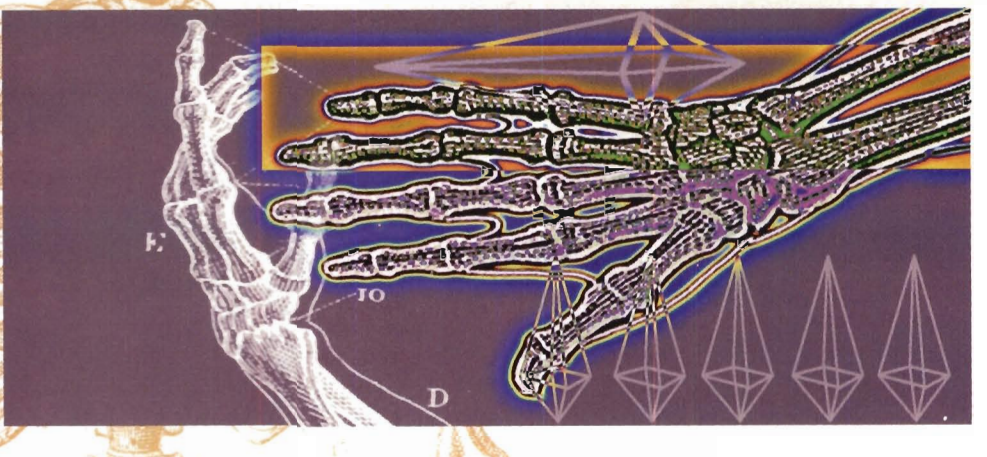
BONES



With the new release of LightWave comes one of the most talked about (and possibly most wanted) features—Bones.

By John Gross

LightWave's Bones allow you to reshape an object during the course of an animation without the need for morphing, and allows users to imbue objects with lifelike characteristics (among other things). It is now much easier to get models to walk, run, jump about, etc. Also, Bones allows LightWave's Layout screen to become a sort of 'mini-Modeler'—objects can be modified slightly by applying influence with a bone or two.

So, how does Bones work? First, start with an object. It's a good idea to use an object whose polygons have been tripled. This way, as you bend and twist your object around, your non-planar polygons won't render strangely.

The whole concept of Bones is rather simple. After loading an object and adding bones, the bones' 'rest' positions are determined. Any time a bone is moved from its rest position, the object or object parts move along with it. The larger the bone (in most cases), the more influence it has on an object. Bones that do not move actually help to 'anchor' other parts of the object.

To demonstrate the power of Bones, we will use the Urn object included with LightWave. The urn used for this example has had its polygons tripled in Modeler before being loaded into Layout. Selecting the urn as the current object and clicking on the Object panel, then clicking on the Object Skeleton button reveals the Bones panel for the urn (see Figure 1). This is where bones are added to an object.

Once bones are added, they can be named for identification. This is a good idea, especially if your object has many bones. After naming your bones, return to the Layout screen to set the bone's rest length, position and direction (which can also be set numerically in the Bone panel).

Upon returning to Layout, a single bone is seen as a meter-long stick shaped like two pyramids put base-to-base. Don't be confused by the shape. The fat end does not exert any more influence than the skinny end, it's just a reference for the bone's pivot point. Also notice that all the bones are located at the center of the grid and have dotted outlines. When a bone has a dotted outline, it is not active and is exerting no influence on the object. Selecting the Bone button (Shift-B) allows bones to be edited in the same way objects are, with one exception: Bones have a rest length. Since bones always start out one meter in length, they may be too large or small for some objects. Changing the bone's rest length determines the range of influence it has on an object. This influence range is a kind of cold capsule-shaped area around the bone and can be restricted by inputting an influence range value in the Bone panel and selecting the Limited Range button.

After the bones rest length is adjusted (which can be changed at any time) and its position and rotation determined, two things need to be done. First, press the *r* key to instruct LightWave that this position is the rest position of the bone. At this point, the bone receives a solid outline indicating it is an active bone. Second, create a key frame for the bone in this position at frame 0. If no key frame is created, the bone snaps back to its original position; however, because you set the rest position, it starts to warp the object. Figure 2 shows the urn with one of its bones given a rest position and new rest length. Notice that the second bone is still located in its original position and has no influence on the urn.

Continued on Page 70

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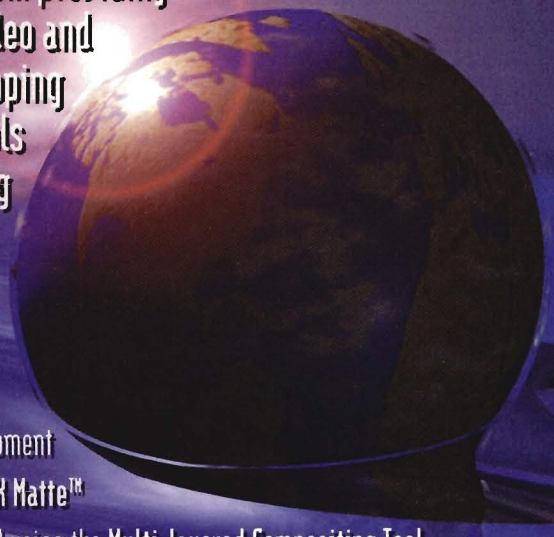

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BONES

For this example, the bottom bone will be the object's 'anchor' bone and will be left with its original rest length and position. Pressing the *r* key sets this bone's rest position. No key frame needs to be created since the bone has not moved from its original key frame at frame 0.

Now, with two bones associated with this object it is easy to see what happens when the top bone is moved around—the top part of the urn is moved along with it. The base of the urn is anchored by the second bone and stays pretty much in place (see Figure 3). Remember that the larger the rest length, the more influence bones have on the object (if Limited Range is not selected). The top bone can be moved, rotated, sized, or stretched and key frames can be created for the bone to make the urn bow and jump around. A few bones are all that are needed to give the urn believable character-type motions. Only three to four bones could be used to animate a walking urn—one for each foot and a couple for anchors.

To achieve greater realism, a skeleton can be built for an object that more closely represents an actual skeleton. The skeleton bones can be parented to one another so that moving one bone moves all the children bones as well.

Take a hammerhead shark, for instance. By adding a line of 13 bones to the hammerhead object, extremely realistic motions can be achieved by key framing the individual bones. Figure 4 shows the the same hammerhead object loaded twice. The shark on the left has bones added, while the shark on the right does not. The bones of the the left shark were placed in a row through the body, end to end, and all had their rest positions set following the length of the shark. The bones were then moved and rotated into positions to achieve a swimming motion over 200 frames. Setting the bone's motions to Repeat creates an endless swimming cycle and the shark can then be moved throughout the animation creating a realistic swim through the water.

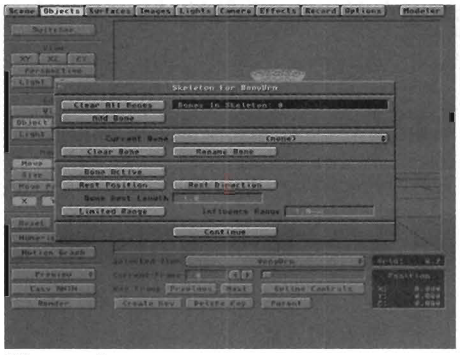

Figure 1:
The bone Panel for the selected object.

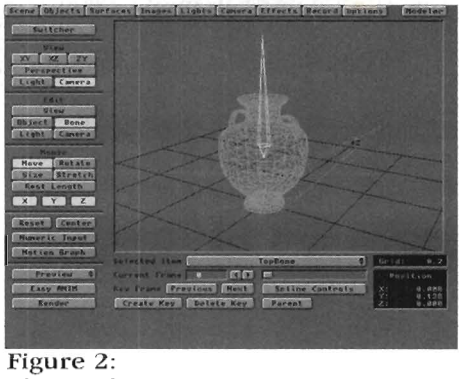

Figure 2:
The top bone's rest position.

Bones has other uses than character animation. For instance, you may be designing a rocky cliff to be used in an animation. The cliff may need to jut out in select areas to support telephone poles. Instead of bringing the cliff into Modeler and modifying it there, you could add a few bones to the cliff object, give them a limited range of influence and set their rest positions in the appropriate places. Moving the bones away from their rest positions causes the cliff to jut out in the direction of the bone movement.

Here's a few more of the many things you can use bones for: making a cow speak by moving small bones around the lips; making the cow breathe by having one large bone in the middle of the cow that slightly stretches in width; flapping the muscles of a heart valve; making curtains blow in a breeze; boiling a pot of water; bulging the eyes of a cartoon character; and melting an object into a pool of liquid.

How is LightWave's Bones different from other 3D program's character animation capabilities? If you compare Bones to the most common method, freeform deformation, you quickly see its greater advantages. Freeform deformation allows for character animation by applying a *mesh* of points to an object. To get the object to deform, you must pull and yank the points around. Often times, these grid meshes contain nearly 10,000 points in order to simulate

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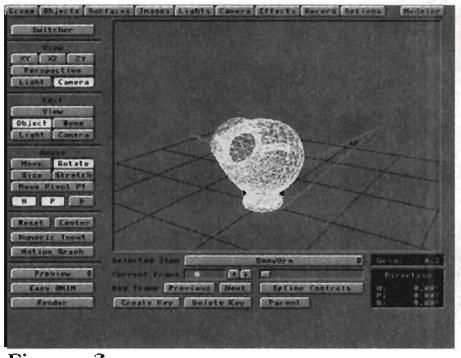


Figure 3:
The top bone rotated from its rest position. Notice how the top of the urn goes along for the ride.

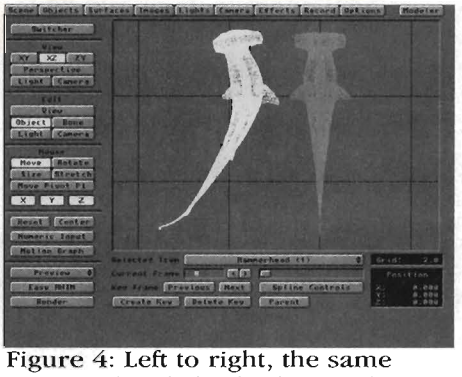


Figure 4: Left to right, the same Hammerhead shark object. The shark on the left has bones while the shark on the right does not.
Hammerhead shark courtesy of Amblin Entertainment and Eric Barba

fluid movement! Among other disadvantages to freeform deformation is that the grid meshes contain evenly-spaced points, so they don't allows appear where you need them most.

Bones allow for a much finer control of the deformation, as you can have any number of bones of different rest lengths all exerting different amounts of influence in any area of the object (or even outside the object!).

As you can see, bones are extremely powerful, yet easy to use. They are one of the many new features in LightWave 3.0/4000 that can give remarkable life to your animations. Be forewarned: Bones is another LightWave feature that, once you start playing with it, causes you to lose even more sleep because of the fun you're having!

VTU

John Gross is a Video Toaster graphic artist and trainer currently living in Los Angeles and working on the upcoming Steven Spielberg NBC television series, seaQuest.

Tips for Working With Bones

A bone's rest length can be changed at any time. Once changed, the new rest length is the same for all frames of the animation—even if it was changed on the last frame.

After changing a bone's rest length, there is no need to create a key frame. New rest lengths are automatically recognized.

Bones always stay with an object no matter where the object is moved. It's like setting a parent without actually setting it.

An object's bones are saved as part of the scene file. They are not saved as part of an object.

Choosing a bone, and then pressing the *p* key presents the bone panel and automatically selects the chosen bone as the current bone.

Turning off the Bone Active button in the Bone panel for an object deactivates a bone until it is selected again.

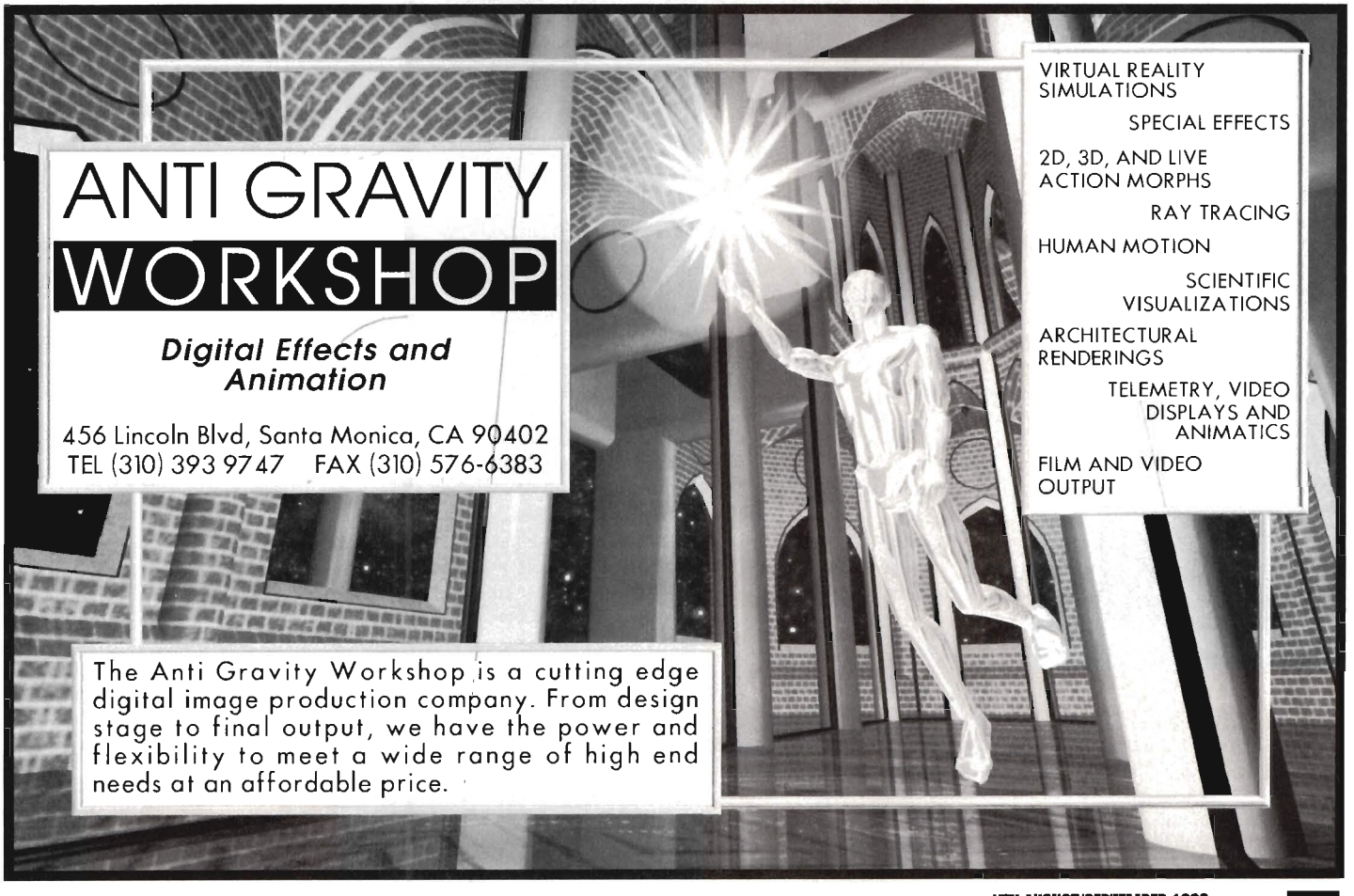
Do not confuse rest length with size. The rest length determines the area of influence while the size of the bone actually changes the object's shape. Always change the rest length to set the influence. Sizing a bone is seldom done.

Adding only one bone to an object and not giving it a restricted influence range achieves the same results as if there were no bones. Moving the bone around in this case is the same as moving the object around.

Turning off the Show Bones button in the Options panel shows only the currently chosen bone.

There is no reason to have bones in a skeleton formation for all objects. Sometimes it helps to think of bones as handles sticking out of the back of a puppet. It is also easier to use parented bones if they stay in the same rotation as originally loaded into Layout.

Like the grid, bones are never seen in a rendered image.



ABCs of Video, Part III

about color framing

By Rick Lehtinen

[Editor's note: This is the third installment in a series of video articles by Rick Lehtinen. The ABCs of Video, Parts I and II appeared respectively in the October/November and December/January issues of Video Toaster User.*]*

The first two articles in this series dealt mainly with alphabet soup. You know: NTSC, Y/C, Y/U/V, RGB and lots of other nasty initially things. We also sorted out M-II from BetaCam, and S-VHS from U-Matic and one-inch. It's doubtless many readers found the articles stimulating and provocative. I know my mother did.

I'd like to begin by saying that the next two segments will provide answers to some of the most frustrating problems Toaster owners face. They do so by building on the foundation of previous *ABCs* articles. In this article, we finish the subject of video signals, and launch in to the fascinating science of signal combination. Next time, we'll discuss editing video on the Toaster, and how to solve problems.

First Things First

For a brief review, let's recall that the NTSC video signal consists of a repetitive series of analog voltages. Unlike digitized video, in which every on-screen pixel has a corresponding location in the computer's memory, analog video systems address pixels by their relationship in time to a series of sync pulses. These sync pulses are included in the video signal.

The first pulse is the vertical sync signal (V). This is the hammerhead shape you see buried in the middle of the little black line that flops through your TV screen when the vertical-hold knob needs tweaking. The second is the horizontal sync signal (H). This is a little pulse which begins each television line. Horizontal sync pulses are invisible on all but the most botched TV sets. These sync signals are described in more detail later.

First, let's talk about the video screen as a whole. Realize that video images come in units called frames and fields. Two fields make up one frame. Each frame lasts for 1/30th of a second, or stated differently, there are 30 frames per second.

We can rightfully ask: Why is the video frame divided in two? It is not just a dirty trick to make video confusing. Actually, it has to do with interlace. In an interlaced video signal, each field carries half of the data. Designers hit upon interlace as a dandy way to reduce flicker. If video were to operate at 30 frames per second, there would be noticeable flashing. By breaking a frame into fields, and loading all the image's odd-numbered lines into one field and all of the even-numbered lines into the other field, the eye gets a stream of information at 60 flashes per second. The wonderful integrating capacity of the human eye brain combination cannot detect the flashes at that speed.

The vertical sync pulse causes the monitor's beam to race up to the top of the screen and start writing again. As the vertical deflection circuits pull the beam slowly down the screen, the horizontal lines start firing. The interaction of horizontal and vertical sync signals form an interesting pattern that causes a half-line to appear at the top of every other field. See Figure 1.

Of course, video designers could also have eliminated flicker by cranking up the frame rate and operating non-interlaced, like a computer monitor. Unfortunately, video engineers did their work over 50 years ago, well before the invention of videotape. They envisioned a service that could transmit images to the home—in other words a radio with pictures. With the technology of the day, there was no way to transmit more frames and still stay within the allowable bandwidths of the transmitted television channel.

So why is this important to you? Because NTSC's interlace, with lines from one

Continued on Page 74

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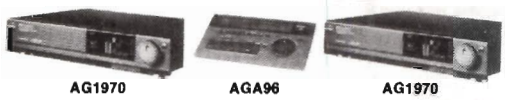

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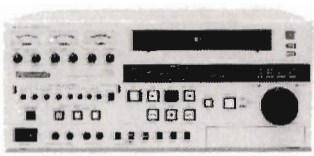

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ABCs of Video, Part III

about color framing

field constantly popping up between lines of the next, causes many of the visual artifacts that make a TV screen look less clear and brilliant than a non-interlaced computer monitor. Interlace also causes another complication, something that is at the heart of most editing problems you might have with your Toaster. To describe that, however, requires us to lay a little more groundwork.

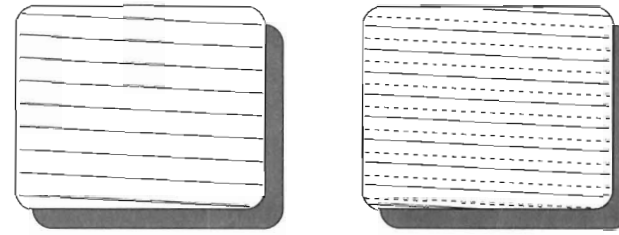
Sync or Swim

If we use an oscilloscope to examine TV signals, we end up with a display rather like what is shown in Figure 2. (Actually, the preferred instrument is an oscilloscope that has been optimized for video measurements, called a waveform monitor. Waveform monitors have a special graticule that is calibrated in units called IRE). For best reproduction, the luminance portion of the video signal should lie between 1.0 volt (100 IRE) for the highest white levels in the scene, to around 7 IRE, for the corresponding black level.

But Figure 2 shows that the scale extends from -40 IRE to about 110. What are the extra units for?

One reason is color. The color subcarrier is wrapped around the luminance signal. It displays as sort of a fuzz on the waveform monitor. The rest of it is sync. The horizontal sync signal is a negative pulse that dips down to -40 IRE for a short period at the beginning of each TV line. Its purpose is to tell the TV set to start writing a new line.

Okay, so we have a waveform monitor that has a display that looks like a thing from mars, a dippy pulse that starts each TV line, a black bar that tells the TV when to start writing a new screen and a lot more jargon than we ever hoped for. Is this all really important? Yup. When it's 2 a.m. against a 6 a.m. deadline, and the edit session isn't happening because you have a color-frame error, you bet it's important.



Even lines

Odd lines (interlaced)

Figure 1

What's that I just said? Color-frame error? Do you mean there is more to the story?

I've Been Framed

Back in the days when TV was black and white, television production was much easier. Then came color, and although it made pictures prettier, color really loused things up.

In the first place, just like the horizontal (H) and vertical (V) sync pulses keep the picture tube beam on track, the color TV signal has its own color synchronization pulse as well. It is called the color burst, and it is displayed on the waveform monitor as the Frisbee-shaped blob just to the right of the horizontal sync pulse.

The NTSC color burst consists of eight cycles of the color subcarrier frequency, 3.58MHz. This little eight-cycle burst serves as a reference signal. Its purpose is to help the TV decode the color subcarrier information which, as we described earlier, hangs like a haze around the luminance portion of the video signal. The instantaneous phase relationship between the 3.58MHz burst and the color subcarrier hanging around the video at each point, determines the color of each reproduced pixel.

Of course, any circuitry errors cause the colors to be incorrect. This was such a common occurrence in the old days that NTSC, which stands for National Television Systems Committee, was often called Never Twice the Same Color.

So What About Color Frame?

One way the engineers made color more balanced was to cement the relationship between the horizontal

sync pulses and the color burst. This was particularly important once the helical scan videotape machine became popular. This was accomplished by stating that the distance between the halfway point on the leading edge of horizontal sync was to occur 19 burst cycles in advance of the color subcarrier. The abbreviation for subcarrier to horizontal phase is SC/H. Maintaining SC/H phase on all sources is one of the trickiest parts of modern video.

But it gets worse. Remember the half lines at the top of the odd fields? They add a layer of complexity to all of this. The little line is just the right length to cause the color burst to advance about 1/4 cycle. When you take into account the subcarrier, coupled with the little extra line on top of alternate video fields, you end up with a four-field color cycle. That is, it takes four fields of video to get the subcarrier and the H-phase back in the same relationship. This is why it takes four fields, not two, to store a complete video image.

This causes two problems. First, four video fields occupy about 1/15th of a second. This is plenty of time to cause a blur in certain fast actions, such as a moving hand, or a hurtling ball or a blinking eye. This is why some stills have weird artifacts, such as disappearing fingers, butterfly eyelids and so on. This also explains why there is a four-field averaging option in the still-store section of the Video Toaster.

Edit Decisions

Four fields also adversely affect editing. A four-field color frame means that it is far more tricky to align two video sources that are to be merged. If you try to meld two items with incorrect color framing, you create a little jump, or hit, in the signal. Sometimes this shows up as a small shift in the image. Other times, it shows as a video breakup.

The editing system, in an effort to protect its reputation, may have been programmed to recognize this situation when it is about to happen. Some systems abort the edit if a color-frame error is about to occur. You can try over and over to make the edit, and the machinery refuses to budge, often presenting you with a cryptic error message.

But not anymore. Now that you know what causes the problem, you are halfway to fixing it. We will cover most of this material in the next issue, but in the event you are stuck in a stalled edit session at this moment, let me present three quick and easy steps that may get you by in a pinch.

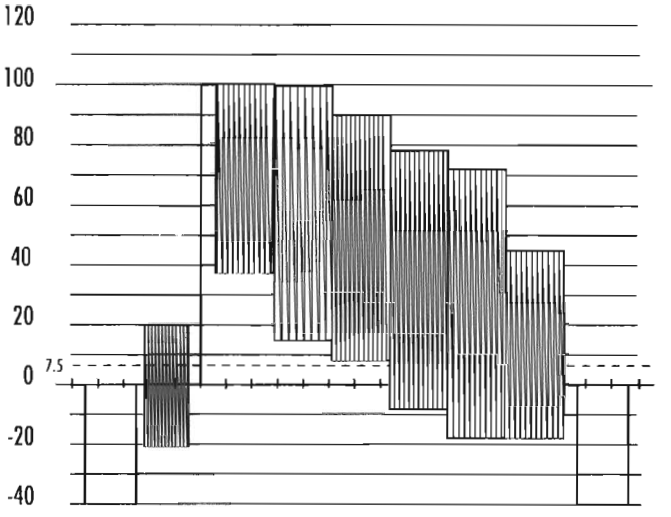


Figure 2

Step 1: Turn the Toaster off and then on again. Depending on the sync generator used in your setup, this may allow you to proceed.

Step 2: Check for a color-framing switch on your editing VTRs. Setting or resetting this switch, depending on the machine in use, may change the VTR's internal reference, allowing you to complete the edit.

Step 3: Verify that your video sources are in the correct SC/H phase to begin with. This requires special instruments which not all facilities own.

Next Issue

Next time we will present a discussion of how video mixes in a switcher such as the Video Toaster, and continue our assault on color frame errors.

VTU

Rick Lehtinen is a market analyst and author covering broadcasting, communications, multimedia, desktop video and computer graphics. Lehtinen is based in Phoenix, AZ, where it is hot in the summer, and in the winter you get grapefruit.

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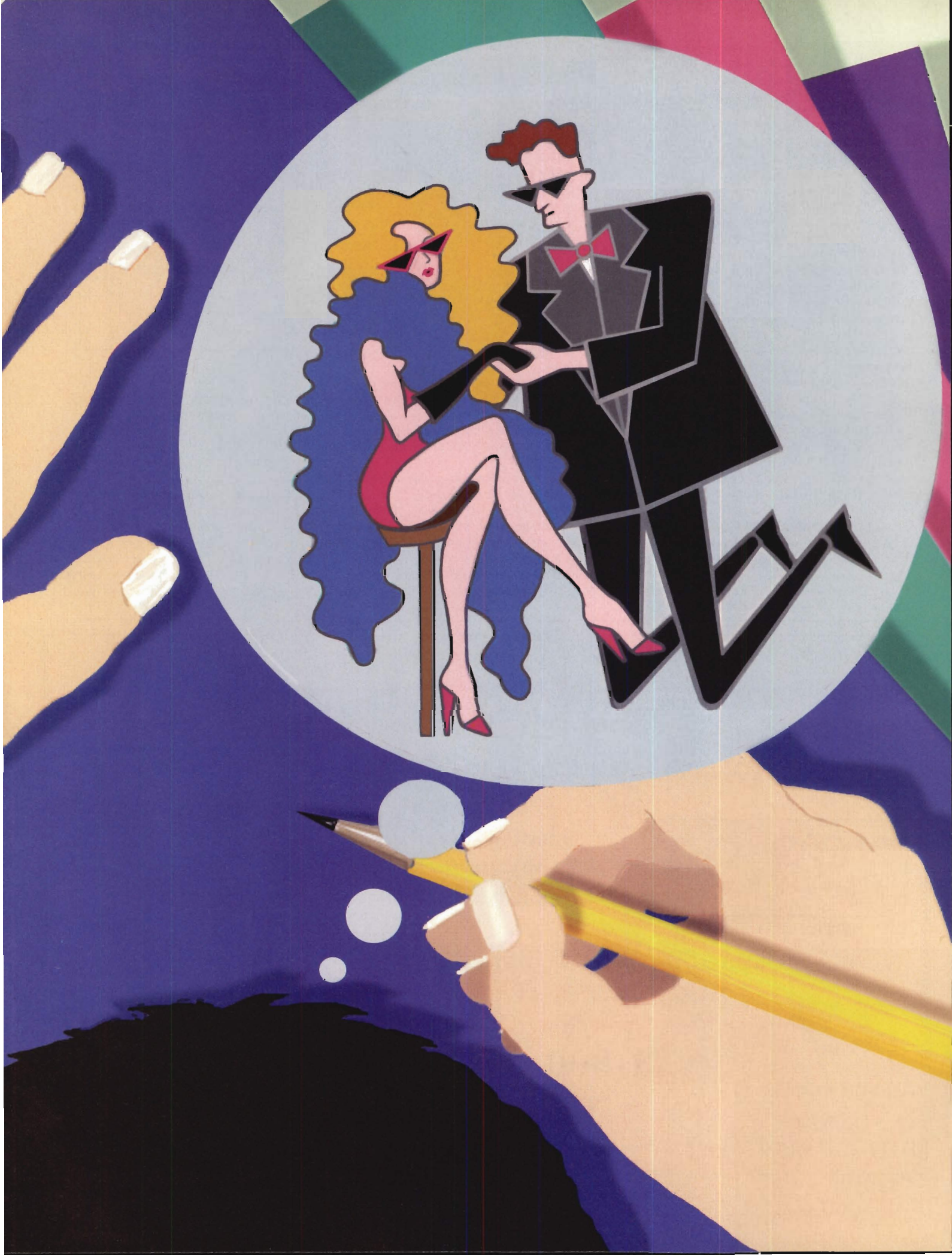

From Home Video To Home Box Office

By George Avgerakis

Part III

script-writing

One of the key distinguishing elements in a professional video is a good script. If you play with a camcorder and edit the results, you've built a professional foundation. Chances are, you can show your finished work to a potential client, an executive in a corporation, for instance, and maybe get a shot at producing a sponsored project. Your chances improve significantly if the work you show is a scripted video.

Clients usually do not have the imagination and creativity of producers. If they did, they'd be producers, living the fun life you want to lead! A script is the most inexpensive tool available to help your customer understand what the final work will look like. If your script is good *and* the client can visualize the end result, chances are high you can sell your project.

Scripted videos come in three basic varieties. The most subtle is the non-narrated documentary. Here, you collect interviews and edit the text into a story that makes commercial sense. The most difficult script is acted dialogue, which implies that actors are not speaking directly at the camera but at each other in some fictional context. The easiest and most applicable script to entry-level video producers is the narrated video, where an on-or off-camera presenter speaks to the camera/audience.

Risky Business

Because they tend to put specific elements on paper, scripts are risky. People can point to the scripted "short fat man," and say, "Hey, I don't like short fat people in my film." Music videos, on the other hand, are basically scriptless, merely taking their creative cues from audio. There are fewer specific elements to reject, and therefore less risk.

A producer can define risk as producing something a client will dislike and reject. A client defines risk as losing his day job. Since losing one's day job is more drastic than losing a client, you have to consider the dangers from a client's perspective. Take comedy for instance. This is the riskiest form of corporate scripts. The comedy can bomb or it can be in bad taste or it can be politically inappropriate. Is it likely an executive will risk his job to contract a comedy script? No.

On the opposite side of the risk spectrum is the narration script. If the script is created from a draft written by and eventually read to camera by the company chairman, that's almost risk-free. This is why so many corporate videos feature the chairman narrating. This is also why corporate videos are often so bloody boring.

A writer/producer's mission in life is to take risks and eventually to get other, less adventurous souls to bet their day jobs on those risks. The reward for your client is quite frequently a promotion. The rewards for you: maybe another job.

If comedy is riskiest and narration safest, you can guess that dramatic scenes fall somewhere in the middle. The trouble is, they're downright expensive to produce. Even rank amateur, "pay me with a demo dub" acting talent is going to cost you more than a narrator. Sure, you can save the customary talent fee of about $450 per day, but think how many angles you would have to shoot to edit a believable sequence. Think about how many times that bozo playing the romantic lead is going to blow his lines.

Continued on Page 78

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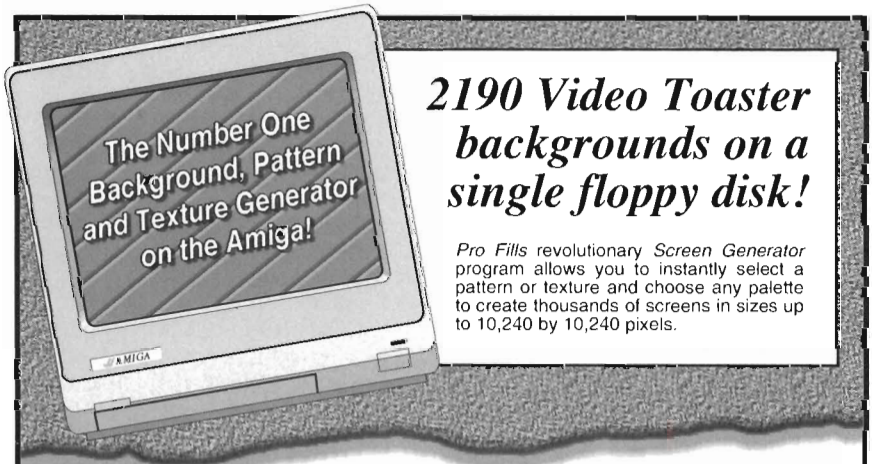

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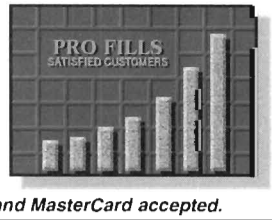

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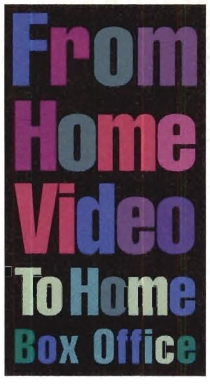

Think about the cost of multiple-screen teleprompters or, worse, memorizing the script. Think about editing expenses—which even with a Toaster, is going to take five times longer than a narrated video edit.

Now that you're thinking about cost, start writing. A common beginner's mistake is to overproduce a script. If it's a drama, you might include more actors than the budget can afford. If it's a documentary, you might write in more locations than you can afford to visit. Even simple narrated presentations have a way of growing out of proportion. However, there's a simple trick that you can employ to format a script.

Professional scripts always CAPITALIZE the words relating to budget. For instance, the first time you introduce a character, like JOE, capitalize the name. Also use caps whenever JOE speaks, like I do in the following script.

Video (*italic text*) Audio (normal text)

Exit Day, Enter JOE, the wisecracking son of a millionaire

Medium shot (MS) JOE

JOE: "Hey George! Don't forget to tell them to use caps for the other expensive things, too. That SHOTGUN we have to rent, for instance and the MILLIONAIRE'S MANSION and of course, that SUMPTUOUS FEAST that we'll eat in the NIGHT SCENE with the WILD BOAR that must be replaced, piping-hot and unconsumed for every retake."

As you can see, writing scripts is more than just storytelling or making a commercial point. It is a delicate balance between capability, finance and creativity. If you are writing just for yourself, a screenplay or telescript that fleshes out some of your wildest dreams, go ahead and forget the financial. It's good exercise and very liberating.

Most professional writing, however, especially at the practical beginner's level, is more restrictive—like writing a sonnet. You can create art, but of a different sort. You like helicopter shots? Think $2,000 per hour. You like directing Geena Davis? Think $70,000 per day plus airfare, limosine and flowers. How about, two college students in love on a park bench? Think 12 pages of script per day and eight hours of editing. (A good $500 narrator can kill 30 pages of prompted script in a day and you can edit that into a really boring piece in about 12 hours with Toaster graphics and some stock footage.) But now you've got half the writing job licked. You've defined your limitations.

The Other Half

Creativity, they say, can't be taught. Maybe so, but you can learn a heck of a lot by watching other people's work and incorporating good scriptwriting techniques. Note, I didn't say copy, parody or satirize. Sales meeting videos that parody a feature film (*Casablanca* being the most copied) or music videos that feature company executives pretending to be rock stars are more annoying than detergent commercials. What I mean by learning from the pros is examining technique.

Take for instance, the excellent film, *The Sandlot*. The story is presented by a narrator, speaking from some point in the future. This technique is ideal for

trimming a budget (you can narrate the expensive parts, dramatize the important highlights) while creating dramatic tension (what character will the narrator turn out to be?). This technique could be used to tell a wedding story or a salesman's success story or even to present an annual report.

The film *Miller's Crossing* features a character played by John Torturro who begs and pleads with a hitman to spare his life. The scene, and indeed the entire story, is a deep exploration of the meaning of loyalty and character. How powerful could a sales video be if the narrator, on-camera spokesperson or dramatic situation could evoke the power of *Miller's Crossing* to persuade the viewer that the video's point of view is sincere.

In the film *Lethal Weapon III*, the weaselly real estate broker played by Joe Pesci asks if he can finally be issued a gun. The immediate answer doesn't come from Danny Glover or Mel Gibson, but from 10,000 fans at a crowded hockey game, to which the script quickly cut, in time to hear a thundering, "No!" This kind of surprise can only be achieved in motion pictures and every budding professional should learn techniques like this to keep their work fresh and appreciated.

Here are three examples of script techniques you can use (and you can find many more in every decent movie or TV show). It isn't wrong to copy techniques. The pros certainly do it. Like the pros, when you do it you will undoubtedly come up with a new twist as you apply the technique to your specific script. You can, with any luck, invent something new and advance the craft. Soon, perhaps, writers might be quoting your work.

Breaking Down

The scriptwriting job traditionally finishes when production starts. Since you may be doing production as well, it helps to know how to break a script down into a blueprint for the director, crew and editor.

Only rarely does a script get shot in the order of the story. Take for instance a story with three short night exterior scenes, one at the beginning of the story, one in the middle and one at the climax. The production manager will probably schedule all three scenes to be shot in one night. This is called, "shooting out of continuity."

In order to organize scenes, each is numbered in ascending order through the story. Do not number the scenes of your script, however, until after you've received final approval. It's simply too difficult to maintain accurate numbering during the revision process.

Within each scene, the director may choose to create sub-scenes, called "setups." For instance, a scene in a living room with four actors may read like this:

37. *INTERIOR LIVING ROOM: PAPA, YURI at PIANO: ANNA TAMARA looking out WINDOW*

PAPA (playing a jig): "This is going away music." *(To ANNA)* "When are you going away?"

ANNA leads TAMARA out.

ANNA: "Right now, you old fool."

The director most likely shoots a "master shot" of the action first (which is far enough back from the action to see all four actors). Video is a derivative of film and film is a derivative of theater. The master shot is a throwback to the proscenium stage view in a theater. Although it covers all action, it tends to get boring and does not take advantage of the medium's ability to focus attention on specific dramatic details.

Continued on Page 80

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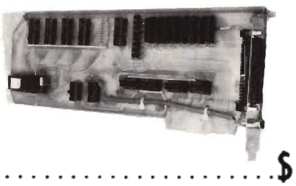

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For instance, since Anna and Tamara are leaving, the director might want to place the camera behind Papa and Yuri, shooting through them to accentuate the departure of the women. If so, the director creates a second setup, requiring a significant repositioning of the camera and lights. The original master shot would be numbered 37M-1. "M" signifies the Master shot and "1" indicates the "take" number. If the actors blow their lines or something goes wrong with take-1, the director will reshoot the scene and the "continuity person" will note that shot 37M-2 was created.

The second setup would be called A37L-1 and the continuity person might note that this is a "long shot (the L abbreviation) with Papa and Yuri in the foreground." The "A" prefix signifies that it is the first inserted setup to scene 37.

Any scene may require several setups and a multitude of takes. None of this, traditionally, is the scriptwriter's responsibility, but as a junior producer, you may have to break a script down before shooting. To do so, you should carefully visualize the script well in advance of production.

How do you decide what a scene is? Well, if Anna and Tamara storm off to the kitchen, that would certainly require a Scene 38. Next, we cut back to the living room to continue the action of Papa and Yuri, and this might be Scene 39. Simple.

But what if your script requires only one guy at a podium, showing slides for an hour? What do you do if your first professional scriptwriting assignment might be something so tedious? I suggest breaking down such a script into "operational scenes."

Operational scenes refer to the two departments which work with the script after you write it: the production crew and the editors. A production crew looks at a scene as a basic setup requiring a certain amount of lights, props, costumes, location, etc. Of course, a closeup or different camera angles within a scene may require adjustment of the setup (sometimes requiring hours to execute), but the basic setup determines the scene for the production crew. A man at a podium showing slides is at least two setups: One for the man and one for the screen showing the slides. You might include a setup for the audience. Maybe a third setup for possible questions from the audience (a Q&A microphone position).

Editors view a scene as the amount of finished master tape that can be accomplished in a day's work. Since the editor cuts between the man at the podium, the slides and other shots (we call the other shots "cutaways"), you may wish to break the speech down into chronological order according to the subjects in the speech.

In a one-person operation, you do both the production and editing, so you can experiment with the breakdown method and see what goes best in each category. Later, when you move on to better-funded projects, with your experience you'll be sensitive to the other workers' tasks and your scripts will be intuitively better crafted to meet their needs.

The first concern in breaking down a script is to make it easy to shoot. Once you've decided to take the script "out of continuity," what order of scenes yield the lowest production cost? On a feature film, this process is usually assigned to the Unit Production Manager (U.P.M.). They use a neat tool called a "strip chart." Although this tool may be overkill for your video, it's worth examining the theory that makes it work.

The Strip Chart

Imagine a cardboard frame in which you can easily insert thin strips of paper, vertically, side by side, like vertical window blinds in the closed position. Put one wide blind on the left and glue it in place. The other blinds can be removed and their left-to-right order changed. Now draw about 30 horizontal lines across all the blinds. This forms a kind of x-y coordinate grid. You can actually buy a setup like this from F&B Ceco, a film supply house in New York City.

Across the top, number all the scenes in your script. Down the left side, in the wide strip, list all of the actors in the script and at the bottom, list any special requirements that need to be shot, such as "Rain Scene," "Explosion Effects," "Special Props," etc.

Now go through your script and carefully note in which scene an actor or a special requirement occurs. At the convergence of the scene (vertical strip) and the actor's name (horizontal row), place an X. If you do this correctly, you can then lift out the paper strip representing any one scene and, reading downward from the scene number at the top and see Xs that tell you who and what are in each scene.

The magic of the strip chart is that you can now take the scene strips and rearrange them in the shooting order which makes the most logistical sense. For

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instance, if you have an expensive star and the budget can afford only one day's salary, you might want to group all of the scenes with an X by the star's name together, thereby forming one production day. Or, if you have five night scenes, you might want to group them together so all of the scenes can be taped in one evening. Obviously, you can have an almost infinite range of possibilities and certainly only one will be the cheapest to shoot. That's your goal.

Then there are variables, such as weather, which are unpredictable. A good U.P.M. schedules his exteriors early in the production and follows each with a "set pickup" day. The set pickup is a day of easy interior shooting, on a studio set, usually with non-star actors, that can easily be moved anywhere in the schedule with very few phone calls. This way, if an exterior shoot must be postponed for one day, the next day's shoot is temporarily expendable.

"Invent something new and advance the craft."

You can make your own strip chart with a piece of cardboard (for the frame) and simple, lined notebook paper. Design the grid on the whole sheet of paper, then cut the sheet into vertical strips. For practice, buy a famous movie or play script and break it down.

The test of the breakdown is the budget. One breakdown might result in 10 days of shooting, and three nights and two days of star talent use. The same script might be broken down into eight days, one night and one star day. You can easily see how U.P.M.'s create value for the producer and how you can arrange your own shoot to be most economical. Obviously, shooting anything in continuity is probably a mistake. Now you can understand why a director reminds the actors, "Now in this scene you are..." Shooting out of continuity is one of the most difficult things with which an actor must contend.

Last Minute Tips

Eventually, your script has to get produced. It may go through several revisions however. I suggest creating separate versions of each revision, especially if you are working for a commercial client. Often the client may want to resurrect something from a previous version.

Don't number your script's scenes until you have final approval from the client. This avoids tedious renumbering after each revision. If you are writing a script that will be pitched to broadcast television, don't number either. This script will inevitably be changed and to assume otherwise is considered amateurish.

Don't put elaborate cover pages on your script. The title and your name are adequate. If there is a client, put the company name somewhere on the cover if you wish. Copyright notices are not necessary for submissions to broadcasters. Besides, copyright notices require you to date your work which only serves to make it look old if you don't sell it after one year. If you feel compelled to put a copyright notice on a script, put it on the last page. It's legal if it's anywhere and readable.

Put your action in interesting places. Cars, restaurants and kitchens are the most overused areas. Think about the cockpit of a jet fighter or death row or the torpedo room of a submarine, but stay away from cars and places where people eat.

Be client-sensitive. Creativity can go all over the place, but your clients have ideas of what they want, too. Listen.

Begin at the beginning. The most common mistake of scriptwriters, especially those writing for industrial clients, is to create an educational document. Your client may be targeting the video to an audience that already knows everything about the technology or industry within which the video takes place. Obviously, you'll have to learn that technology or industry to write a good script, but you need not put everything you learned into the video. Cut to the chase. If the client wants to sell a product, show the product and start writing about how good it is from the first line.

End at the end. The end, as defined by Aristotle, is that point after which there is nothing. The second most common mistake of scriptwriters is going on and on after there is nothing left to say. After you've made all the points, don't rehash it. Okay, maybe a quick bullet-point summation. Then fade to black and collect your invoice. Taking my own advice, I'll end here. VTU

George Avgerakis began as a freelance film editor for Public Television in 1976 and originated the Nabisco Corporate Television Center.

Since 1982 he has been serving corporate and broadcast clients as Creative Director of Avekta Productions in New York City.

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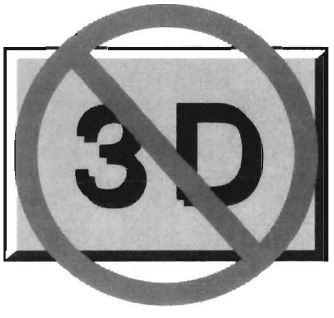

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The Need for Speed

By Bob Anderson

If you believe in the axiom, "Time is money," then this article could possibly help you make a lot of money.

Toaster users know that, in some cases, time is the enemy. Loading and saving images takes time, as does loading Character Generator pages. Did I mention LightWave? Think of Todd Rundgren working on his *Change Myself* video. Some of the individual frames from that animation took over four hours to render. At 30 frames per second, (the NTSC video standard) you can do the math. We're talking vast amounts of time.

Now, don't let this scare you. There are very effective weapons available to help you win this battle. By using accelerator cards, fast RAM, and fast hard drive controllers you can easily increase the speed of your Toaster tenfold.

Understanding the Amiga

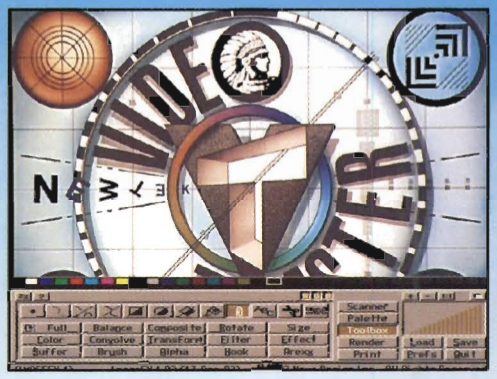
Let's take a moment to talk about the basic architecture of the Amiga computer. The Amiga's motherboard is built around a Motorola 68000 chip. This chip is the computer's main processor, and performs all of the binary mathematical functions that result in everything we see on our computer screens. The Amiga is unique in that it also utilizes several special chips which perform very specific tasks. These chips are known as the Amiga Custom Chip Set. They include, among others, the Denise, Agnes, Paula, and Gary chips. Denise is responsible for the Amiga display. The Agnes chip is used for image storage and animation. Paula is responsible for sound, and Gary governs input devices, like mouse movement. By farming out these repetitive tasks to the custom chips, the main processor chip is free to concentrate on more complex mathematical computations.

Continued on Page 84

ToasterFX™

Supports DIRECT Painting on the Toaster's Framebuffer!

Framestore Operators for GVP's ImageFX™ Software



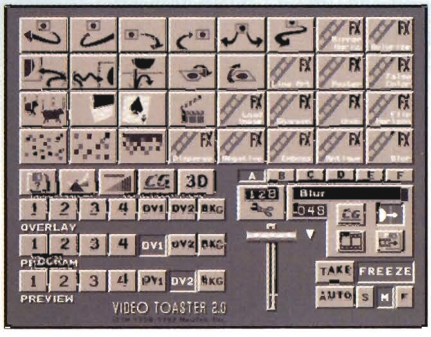
ToasterFX for your Video Toaster!

The ToasterFX framestore loader, saver, preview and render modules, and GVP's ImageFX software are a complete paint and image processing package for NewTek's Video Toaster, allowing direct painting on the Toaster framebuffer screen!

Replacing ToasterPaint, GVP's ImageFX offers complete 24 bit painting tools with an 8 bit alpha channel, airbrush tools, color balancing, composition controls, special effects filters (oil paint, ripple, disperse, distort...), morphing and more.

ToasterFX completely integrates the operation of ImageFX with the Video Toaster, allowing direct access from the Toaster's switcher screen.

ToasterFX's **FX Croutons** bring image processing power directly to the Switcher screen! **User configurable** special effects like emboss, antique, blur, sharpen, oil paint, flip, disperse and more are available as standard Toaster Effects to be performed directly on a framebuffer image.



The ToasterFX LOAD module allows DIRECT loading of framestore files into ImageFX as 24 bit images. View the ENTIRE image on screen while painting, or choose any zoom level for detail work.

The ToasterFX SAVE module saves any image loaded or created in ImageFX directly to NewTek's framestore format.

Convert Video Toaster framestores directly to and from Amiga IFF24, JPEG, Targa, TIFF, GIF, Alias formats and more.

Paint DIRECTLY on the Video Toaster's framebuffer with the ToasterFX PREVIEW module.

The RENDER module can directly display to the Video Toaster's framebuffers without leaving the ImageFX interface. (choose between DV1 or DV2).

ToasterFX also includes stand-alone utilities for:

- **Converting Framestores to IFF24 images**
- **Converting IFF24 images to Framestores**
- **Displaying any Amiga screen directly to a Toaster framebuffer.**

Not just for painting, ToasterFX with ImageFX is also a powerful image processing and special effects generator for Toaster framestores.

ToasterFX requires GVP's ImageFX for painting and image processing functions. Painting and image processing can be accomplished on any Amiga computer. NewTek's Video Toaster is required only for direct displaying of framestores to the Toaster's framebuffers.

ToasterFX is available at your Video Toaster and Amiga dealer or directly from:
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The Need for Speed

Macintosh computers are built around this same 68000 chip, but don't have these custom chips. This means that the main processor chip wastes time interpreting mouse movement, doing screen refreshes, and producing sounds, rather than spending its time on more difficult tasks. DOS-based personal computers use a different processor chip, but the single-processor scenario is basically the same.

The Amiga's custom chips help the computer run very fast; but now let's add the next part of the equation: Video images contain huge amounts of information. Uncompressed, a single frame of video is over one megabyte (MB) of information. As I said before, NTSC video runs at 30 frames per second. We're talking over 30 MB of memory for each second of video! Fortunately, the Toaster compresses the files down to a more manageable size. Toaster 2.0 deals with about 3/4 MB per frame, and version 3.0 and Toaster 4000 compresses most images to less than 1/2 MB. Even so, this is still quite a bit of information to be moving around.

Full Steam Ahead

So, what can be done to help the Amiga more effectively manage all this information? There are literally hundreds of add-on items designed to optimize your computer's speed. Just thumb through the pages of this magazine and you'll see plenty. The main speed areas are RAM, hard drive controllers and accelerator cards.

First, let's consider RAM and how it effects the overall speed of your computer. The amount of RAM in your Toaster is not as important as the type of RAM. This is not to say that having lots of RAM to work with isn't a good thing. For basic editing setups, 7 MB should do the job. If you are interested in doing graphics with ToasterPaint or the CG, 12 MB would be better. For those users doing serious LightWave rendering, consider around 16 MB. This is not to say that these things can't be done with less RAM. You can start the Toaster in the Get Small project with 3 MB. You can perform most of the Toaster's functions with as little as 5 MB, but doing so requires constantly performing memory purges, and limits your ability to multitask.

As I said, it's not really the amount of RAM that makes the difference, but the type of RAM. There are two different types of memory you can use in your Amiga: 16-Bit or 32-bit. Think of this as a 16-lane road versus a 32-lane highway. Obviously, you can move more traffic on the wider highway. 32-bit memory moves information twice as fast as 16-bit. The Amiga 2000 uses a 16-bit memory path on its motherboard. The only way to access any 32-bit memory on this model is by adding an accelerator card. The Amiga 3000 uses 32-bit memory on its motherboard, as does the 4000.

The Agnes chip is a RAM chip (it is referred to as Chip RAM). On the stock A2000, this is a 1 MB chip. The 3000 and 4000 both use 2 MB of chip RAM. There are add-on boards available for the 2000 that upgrade the Agnes chip to 2 MB. Adding this chip helps improve the speed of screen redraws, especially in Modeler.

SCSI Drives and the 2000

The Amiga 2000 is designed to use either Small Computer Serial Interface (SCSI) hard drives, or IBM-type AT drives. Data transfer to and from SCSI drives is considerably faster. Commodore sold its 2000HD systems with the SCSI-type drives, as did NewTek when they sold Toaster Workstations. The majority of Toaster owners use SCSI drives, therefore I'll concentrate on this type.

Hard drive controller cards make a slight difference in your speed. Using a faster card such as the ICD Ad-SCSI greatly improves boot-up time, and the time for writing or calling things from the drive. You'll notice somewhat of an improvement in LightWave, especially when calling an image sequence off the drive—you'll most likely shave a second or two off the total time.

You may have heard a lot about the newer SCSI-2 controllers. In order to take full advantage of these cards, you need to use an SCSI-2 drive. When used together, an SCSI-2 setup is unbelievably fast; but unfortunately, these drives and controllers are currently prohibitively expensive. A SCSI-2 controller transfers data at a good rate to regular SCSI drives, but if you aren't using the type-2 drives, the time saved is not worth the additional cost.

Computer	Version		Result
Amiga 2000 No accelerator	2.0		1:34:00
Amiga 2000 Commodore 2630	2.0		8:22
Amiga 2000 Rcs 040 28MHz	2.0	non F,P.	5:05
Amiga 2000 Rcs 040 28MHz	3.0		1:32
Amiga 4000	3.0		2:44
Test: Loading VTLogo into ToasterPaint buffer			
Computer	**Version**		**Result**
Amiga2000	No Accelerator		1:59
Amiga 2000	2630		:21
Amiga 2000	GVP '030 50MHz		:18
Amiga 2000	RCS '040 28MHz		:13
Amiga 4000	'040		:13
Test: Render "Special Presentation" Framestore page from CG			
Computer	**LightWave Version**		**Result**
Amiga 2000	No Accelerator		:49
Amiga 2000	2630		:11
Amiga 2000	GVP '030 50 MHz		:09
Amiga 2000	RCS '040 28 MHz		:07

TABLE 1

The Amiga 4000

The Amiga 4000 has an internal IDE controller, thus eliminating the need for an add-on hard drive controller. Data transfer speed on an IDE is about halfway between a SCSI and a SCSI-2. Many Toaster "power users" have made big investments in large capacity SCSI drives, and the good news is that you can use a controller card from your A2000 in the 4000, and continue to use your SCSI drives.

Ok, now for the big guns. As the name implies, when it comes to speed, accelerator cards are the most important element of your system. On the Amiga 4000, this is fairly straightforward.

You can get both a 68030 (commonly called an '030) or an '040 running at 25MHz. The processor chip is part of the motherboard. At this point, no one is manufacturing an add-on or replacement accelerator card, but once these are on the market, you'll see plenty of upgrades. Commodore's '030 board doesn't have a math coprocessor on it, and it is therefore somewhat slower than many other '030s. I'll talk more about math coprocessors in a minute.

As I said before, the Amiga 2000 is based on the Motorola 68000 chip as its main processor. Accelerator cards upgrade this chip to a 68030, or 68040. These chips run between two to 14 times faster than the basic 68000. When discussing accelerator cards, there are two important pieces of information that must be addressed. First, what is the clock speed of the processor (referred to in Megahertz, or MHz), and second, whether it is an '030 or an '040.

Accelerators come in many different clock speeds. Commonly, you'll find 25, 40, and 50 MHz '030 cards and 28, and 33 MHz '040's. The higher the number, the faster the card. Generally speaking, '040 accelerators are faster than 030's regardless of the clock speed. These cards make vast improvements in any of the Toaster's time consuming processes, such as rendering LightWave images, rendering Framestore-style CG pages, or calling up an image in ToasterPaint. Take a look at the benchmark tests in Table 1 for a head-to-head comparison of many popular accelerator cards.

The point of these tests is to show you comparative speeds between different accelerators. Your results may vary. The test results are relative to more than just which accelerator card is in the machine. Other factors such as type and amount of RAM, and which hard drive controller card you are using affects results. For instance, when loading the framestore style CG page, an unaccelerated machine took one minute, 59 seconds. With the GVP '030 50 MHz with no RAM it loaded in 21.6 seconds, and it took 9.0 seconds after installing 8 MB of 32-bit RAM. It can take some experimenting to get your machine to its optimum performance speed, but, as you can see, accelerator cards make all the difference when it comes to speed.

There is also the issue of the Floating Point Math Coprocessor. This is a special chip that does nothing but mathematical computations. By utilizing this chip, rendering times are greatly reduced for math intensive procedures such as ray tracing and shadow mapping. At their first introduction, many '040 boards didn't feature this chip. Because the LightWave code was optimized to find this coprocessor, you have to trick the Toaster into loading a special version of LightWave and Modeler that are designed for use with no accelerator card at all.

The good news is that whether you are running an Amiga 2000 with an '030, or '040, or either version with an Amiga 4000, LightWave 3.0 will work at its optimum speed. In most cases, you should see an appreciable increase in rendering speed, in some cases up to 14 times faster.

If you increase your working speed, you can accept more jobs and increase your income. As I said, time is money.

VTU

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Buying Used/Demo & B-Stock Broadcast Equipment

By Frank Kelly

Once you've been bitten by the desktop video bug and you have a few productions under your belt, you eventually begin to wonder what advantages might be had by upgrading your gear to broadcast quality. One of the most interesting side effects of the explosive growth in personal video production is a new category of video equipment called "prosumer." This new category of equipment is somewhere between professional and consumer. The most important features found on these new products have previously only been available on professional product offerings. For example, prosumer VTRs might have a serial port for computer control during single frame animation, or to interface with an edit controller for multi-machine editing, and some form of time code capability, which is an invaluable aid in accurate editing and the edit decision process. New prosumer cameras offer features such as multiple chips for better color reproduction, gain up for better performance in low light, and zebra pattern highlighting in the viewfinder to show when the scene is too bright.

Although many of the offerings in this new product category are more feature-rich than their consumer counterparts, they are usually not intended for the rigors of professional use. For many, prosumer gear is the best option, but for others who need more durability and features, broadcast or industrial-level equipment is the only answer. This equipment is designed for heavy-duty use and offers features that make integration into professional environments much more practical.

Once you've decided to make the move up the video production food chain to acquire this level of equipment, you may be faced with sticker shock on new items (which can make even the strongest hearts faint). A prosumer edit deck might cost somewhere around $4,000-$5,000, whereas a professional version might cost $40,000. Where you might expect to pay about $3,000 for the latest prosumer camcorder, its professional counterpart costs about $25,000 (without a lens). With all this disparity in pricing, it seems there isn't an affordable road to take in the upgrade path; however, there is an alternative: buying used. With a little diligence and some homework, you can save thousands of dollars and acquire perfectly good equipment that gives you years of service.

If you understand the way the computer industry is constantly obsoleting itself with new product introductions, you won't be too surprised to learn that it is much the same case in professional video. As an example, time base correctors (which have been required equipment to mix taped video signals together) cost upwards of $10,000 a few years ago. Now they can be had for under $1,000. As high-end production facilities and television stations rush to keep pace with the latest technology, you can obtain their castoffs at tremendous savings. But be careful; purchasing someone else's problems can be an expensive lesson.

Although this equipment is designed for rigorous use, if it hasn't been properly maintained, it can be quite expensive to repair or refurbish. It is not uncommon for the price to replace video heads to exceed the overall value of a VTR, if parts are scarce. Currently there is a wide selection of broadcast tape formats and equipment models that may have fallen out of favor and are no longer supported by repair technicians because parts are no longer available or are expensive to obtain. For this reason, many experienced used-equipment buyers purchase multiple items so parts can be taken from backup machines when repair time comes. You can also purchase discounted vintage equipment, referred to as B stock, through authorized dealers. This equipment has usually functioned as a dealer demo, and may have some cosmetic blemishes, but otherwise comes with a full warranty. Typical savings on B-stock can be from 20% to 40%, depending on whether or not the item has been discontinued by the manufacturer. C-stock is another equipment category, but is more difficult to find and almost always has cosmetic or even mechanical problems which are too excessive for warranty repair. C- stock can be purchased quite inexpensively, but expect to invest in refurbishing before using it.

Exploring The Options

When buying used, you can buy directly from the seller or through a middleman, called a broker. There are advantages to both options. When you buy directly from the seller, you don't pay a broker's commission (which although technically paid by the seller, can still be a factor in the final price you pay). If you use a broker, the funds are held for a reasonable period of time to allow you to verify the condition of the merchandise. The broker can also be helpful in finding buyers for any merchandise you may be interested in selling to facilitate a swap or trade-in value towards your purchase. Many dealers in new broadcast equipment also offer brokering services as an aid to help their clients raise cash for pending new equipment purchases. Although you may pay more, a broker usually has multiple sources for items, can screen out the equipment that has been poorly maintained, and hold funds in a transaction account while you have a technician examine the item.

Try to remember that as a used-merchandise buyer, it is ultimately your responsibility to inquire about condition and if needed, to verify the same. Don't expect someone to volunteer what might be wrong with a piece of equipment. You need to ask certain questions, such as how many hours have been logged on a tape deck since the heads have been replaced, if at all. Don't be shocked to hear that a deck might have over 1,000 hours on the meter, since most broadcast units can operate trouble-free for 3,000 hours or more with proper maintenance. If you're

Breathing New Life into 3/4 Umatic

Among the many bargains in the used equipment marketplace is the venerable 3/4 Umatic VTR. Since the introduction of the professional "S" format, many in the broadcast industry have proclaimed the death of 3/4 Umatic. It should be stated that 3/4SP Umatic is still in current production and, although not as popular as professional S, it is far from dead. The primary complaint when comparing the two formats is the stated horizontal resolution. Professional S comes in at over 400 lines, while standard 3/4 Umatic is at approximately 260. These numbers represent luminance detail (black and white picture information).

Color reproduction characteristics are similar between the two formats when using Y/C or Umatic dub connectors (with Umatic's color reproduction in successive generations being a clear winner between the two). The 3/4 Umatic went through an upgrade a few years ago when Sony introduced the 3/4SP format. 3/4SP increases luminance bandwidth so that it yields 360 lines of horizontal resolution.

When purchasing used video equipment, standard 3/4 Umatic can be purchased for roughly half the cost of 3/4SP. There is, however, a modification which can be made to a standard 3/4 Umatic VTR which gives it the performance characteristics of 3/4SP, while maintaining compatibility with standard 3/4 Umatic tapes and machines. The modification is referred to as "Widebanding" or the "SP mod." The cost can vary depending on the source of the modification and the model of the machine, but expect to pay under $1,000 to wideband a standard 3/4 editor, less for portables and source-record play decks.

Another useful modification is to have the Umatic dub connectors modified from Y-688 to YC-358. This allows you to use a wide variety of current-model time base correctors and switcher/effects units that utilize YC-358 connectors. The modification cost usually depends on the shop rate of the service technician and the parts involved. Shop time per machine shouldn't exceed three hours—less if it's being done in conjunction with some other related maintenance or modification. One company that performs these services is Broadcast Systems Design in Campbell, CA ([408] 866-6900). There is a voicemail system that has a message which explains the wideband modification in more detail, and shipping arrangements.

looking to purchase a camera, ask if it has any burns (if a tube camera) or whether it comes with "glass," a term used to describe the lens by most pros. It is common for professionals to spend as much for the lens as the camera head, and to keep their lens when they upgrade to a new model. If buying equipment that is designed to operate with battery power, ask if the price quoted includes batteries and a charger. Items such as switchers and effects boxes usually have various options available which upon closer examination may be required for you to use in your particular setup. Don't be afraid to describe your setup and your needs in specific terms to avoid any misunderstandings.

Personal Recommendations

I have outfitted my post production facility primarily with used and B-stock equipment, purchasing only a few items new. Through this experience, I have found several sources for equipment, both new and used, that I would like to recommend.

As a general source for equipment, I have had good experiences with the Broadcast Professional forum on Compuserve Information Service. I make it a point to check the classified forum at least once per week. When I look for a particular item, I can post a "wanted" message that usually turns up a good lead for a source. This is also a very useful place to inquire about the performance (or lack thereof) of any particular model of equipment someone else may be offering to sell. Although Compuserve cannot be considered a marketplace, it has been a valuable information source.

Another place to look for used-broadcast gear is the classified section of a publication called *TV Technology*. This trade publication comes out monthly and can be obtained by subscription. *TV Technology*'s classified section offers a wide selection of items for sale from all over the United States, and can give you a starting point from which to determine a particular item's value. Using a recent issue of *TV Technology* can be handy when negotiating prices with a broker, keeping in mind that brokers work on commission, so their pricing may be higher than current market value.

As a general rule, the amount of money involved in a transaction for broadcast gear demands some kind of procedure for protecting both parties. One method I have found useful when dealing with a private-party transaction is to have a factory-authorized service center for the particular brand of equipment act as the

Continued on Page 88

At Last! Peer to Peer Networking for the Amiga!

Interworks introduces its Ethernet-based Distributed File System, for the Amiga. ENLAN-DFS is an Ethernet based peer-to-peer LAN solution for the Amiga. You get powerful **disk, file and peripheral sharing** that until now was only available on other personal computers.

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Dealer inquiries welcome

Equipment For Sale:

Getting $$ Out Of Your Pre-Toaster Equipment

By Rick Lehtinen

Now that you have joined the revolution and are producing great video with your Toaster, you face a mild dilemma—do you keep excess equipment?

If comedians Penn and Teller are right, buying a Video Toaster allows you to retire about $65,000 worth of professional video equipment. However, if you're not a professional and personal video production is not your game, it's more than likely you used more modest consumer or prosumer equipment in your B.T. (before Toaster) days.

There are, ultimately, two reasons to sell surplus video equipment. The first is you need the money. The second is the fact that keeping something you don't need offends your sensibilities. Whatever your motivation, this article shares some insights into selling your used video production gear.

Divide And Conquer

Equipment just ain't equipment, it comes in three broad categories—consumer, prosumer and professional. Knowing how to classify your gear is important because it helps determine the most successful marketing strategy.

The cardinal rule says it is easier to sell downstream, than up. For example, you can sell prosumer gear to the consumer, and you can sell professional gear to the prosumer; it is extraordinarily difficult to do either task the other way around.

Here's more information on equipment categories:

Consumer

You know you have consumer-grade video equipment if you can buy its replacements in a shopping mall. Regardless of how much you paid for it when it was new, or how good you think it works, there are significant differences between consumer and prosumer gear. These differences define the market to which you can sell your equipment.

As far as equipment goes, consumer gear is at the bottom of the pyramid (see Figure 1). Consumer gear is typically available in the under-$1,500 range. It is mass-produced, and manufacturers include only features that are important to the hordes.

If you're trying to sell surplus consumer gear, use the same techniques used to sell a spare outboard motor. Your market is the general public, so your best bet is to try the classified sections in newspapers, or the classified advertising handouts found in most supermarkets.

Some regions are served by one or more computer newspapers. These might work as well, although you may have to play up the "desktop video" aspect of your equipment to justify your ad's placement in a computer journal.

Any community-wide medium, from the YMCA newsletter to the bulletin board that hangs in front of the general store, has legitimate marketing prospects.

Your market is extremely broad—everyone who has ever desired to use a camcorder is a potential buyer. The bad news is, you will not be paid very much. Your customers go to the mall as well, and can quickly figure out if your asking price is fair, considering the age of the equipment and the lack of factory warrantees. Arguments about the importance of S-video versus composite, or debates about lines of resolution, are likely lost on this crowd, many of which would not know a lens cap from a Frisbee. Instead, be prepared to demonstrate the gear. If they see the images record and play back on a TV, they are likely to be prospective customers.

Prosumer

Prosumer gear is at the top of the consumer equipment tier and at the bottom of industrial.

In addition to the classifieds, look to special interest publications. Call a few video production houses in your area to find out which trade magazines they read. In addition to national trades, there is likely to be a regional production magazine serving your area. Get copies to see if these publications have a classified section.

Additionally, find out if there are any industry groups, such as the International Television Association (ITVA), that meet in your area. If the local group has a newsletter, try and post your ad in it. Often, there is a computer bulletin board system (BBS) that serves the local community as well. See if you can drop a note there.

Two classes of buyers emerge at the prosumer

Continued From Page 87

holder of the funds while they put the item on the bench for a complete checkup. If the transaction is with a party from outside my local area, a cashier's check for the amount of sale is purchased before shipment, and a photocopy of the check along with the sales agreement is mailed or faxed to the seller. The purchaser then pays for shipment to the authorized repair center and the cost of the checkup. The seller is responsible for return shipping if the item doesn't perform as represented. This arrangement gives the seller the opportunity to check with the factory regarding the credibility of the authorized repair center and protects the buyer's interests just as in a brokered transaction. If a seller balks at this kind of arrangement, they may have something to hide about the condition of the equipment.

Some Final Thoughts

Buying used equipment can save thousands of dollars, but it isn't always the best option. I have heard horror stories about people purchasing merchandise offered as being in excellent condition, but upon closer scrutiny discovered just the opposite. They end up spending more in repair bills than the item is worth. Usually the rule of common sense—let the buyer beware—holds true in all cases when buying used equipment. Don't let your emotions run away with your hard-earned money! There will certainly be other opportunities to purchase what you are looking for, so if there isn't a satisfactory way to protect your interests, back away from the transaction.

If purchasing from a party that isn't in your local area, insist on shipping by a freight carrier that offers insurance for the item's replacement value. Also make certain that if available, original packaging is used. If the original packaging isn't available, insist on double-boxed packaging. Insurance claims are easily disallowed if stringent packaging requirements aren't followed.

Although the actual value of anything is what someone is willing to pay for it, don't expect to get a steal on every transaction. There are certain items that are in demand that fetch a higher price than you might be willing to pay. In these cases, trying to negotiate a ridiculously low price will only serve to erode your credibility, and in the future you may want to do business with this source again. There is a fine line between a sharp negotiator and someone who shows their profound ignorance in the face of a legitimate deal. When it comes time for you to upgrade, you want as many people in your network as possible to find a buyer for your used gear—so don't burn any bridges by being unreasonable.

Finally, I am going to list a few resources for buying used, demo and B-stock equipment that I have personally used. There are many other sources you may want to explore, such as large corporate communication centers, school districts, government agencies, television stations, and of course other local production companies. These are all likely sources because they upgrade their equipment from time to time and might prefer to do business with a local buyer. Also get acquainted with leasing companies that specialize in broadcast or video production equipment leases. Not only are they a strong source to find good values in used gear that might be coming to the end of a lease term, they can also help in financing your acquisition.

Most of all, I recommend patience, because rarely are there cases when prices on used gear go up, and given time, prices eventually fall. You just need to decide whether the amount of new business you can generate with this acquisition justifies its price. VTU

Hi-Tech Trading Company
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Pro Video & Film Equipment
Broker/Dealer Specializing in Used and Demo Broadcast Equipment
(214) 869-0011

Stereotronic Industries
Dealer Specializing in New/Demo/B-Stock Broadcast Equipment (708) 746-1600

level. The first is owners of existing facilities looking for a backup piece of equipment that matches something they are already using. These people know that repair facilities can sometimes take months to service broken equipment, and they can not afford to be out of action for that long. A spare can be a lifesaver, especially if they obtain it for a reasonable price.

Also, post houses and TV stations often have staff members who would love to strike out on their own. Many of these folks operate their own small production operations, such as wedding or event videography businesses, in their spare time. As such, they are likely candidates for anything that helps increase their production capability without breaking their exchequer.

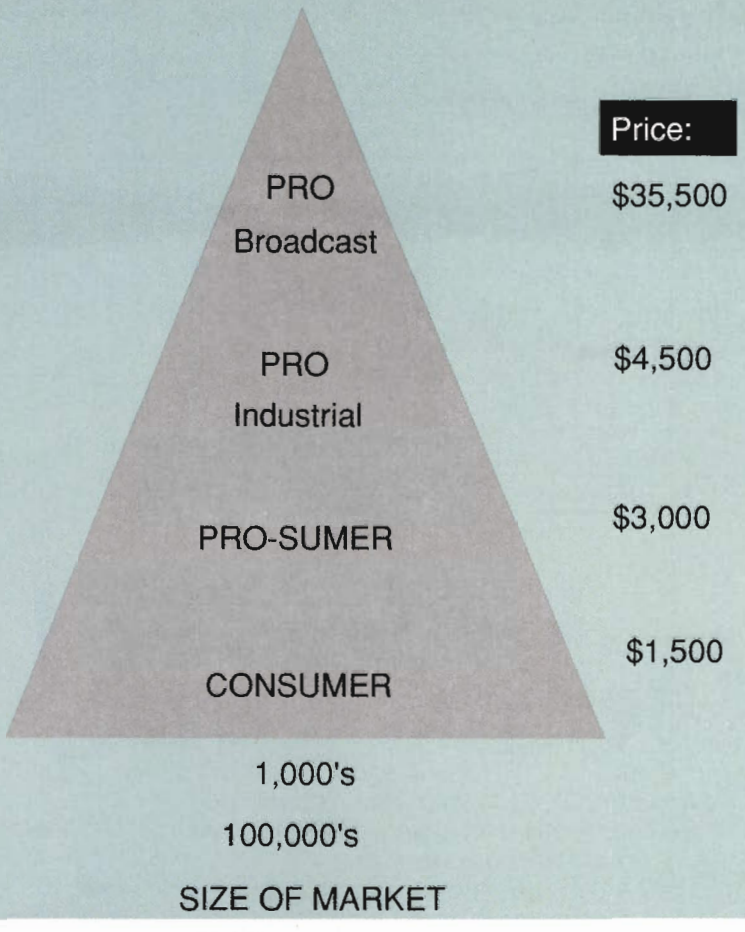
Professional Equipment

The equipment used in TV stations and top-end post houses generally costs a lot of money. It is, however, sturdily built, and designed to accept repairs, if needed. This means it can withstand years of hard daily use.

A lower line of professional equipment is the so- called industrial-grade tier. It can be easily serviced like broadcast gear, but is simplified somewhat to reduce its cost, making it more attractive to corporate, industrial, and educational clients.

For selling professional gear, advertise in professional journals. Some titles to check are *TV Technology*, *Broadcast Engineering*, *A/V Video*, *Video Systems* and *Videography*. If you can't find

Continued on Page 90



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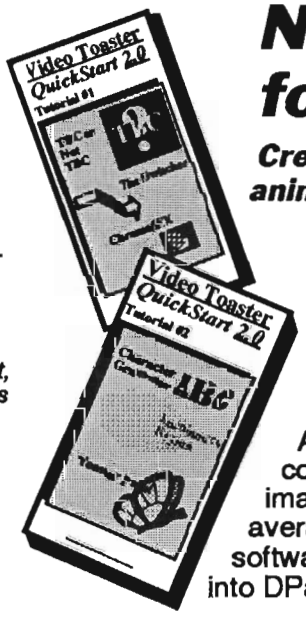

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Equipment for Sale Continued From Page 89

these in a newsstand, you can usually obtain copies by asking politely at any broadcast facility. Locate the classified ad manager's name in the masthead (the publisher's personnel list near the front of most magazines). Call or write for rate information.

Also, look in on the Broadcast Professional forum on Compuserve. Many sellers post equipment availability here.

Find out if there a chapter of the Society of Motion Picture and Television Engineers (SMPTE) or Society of Broadcast Engineers (SBE) that meets near you. There is usually one or two people in each chapter that have unofficially assumed the role of knowing who has what for sale. These folks may find you a buyer, or at least help you find out who may be looking.

General Guidelines

Remember, cleanliness is next to dollar signs.

When you determine that a piece of equipment must go, clean it thoroughly. Carefully wipe off the exterior with a cleaner similar to what you would use on your car's dashboard. Test the cleaner in an unobtrusive area first, to make sure it doesn't stain or leave a residue.

Straighten up the inside with a vacuum cleaner brush—like the one used to suck dirt out of PC keyboards. Don't use a metal extension, and stay away from the video head drum. If you don't think you can suck out the dust bunnies without disturbing the tape path components, don't try. Compressed air can blow away the dust, but make sure it is clean air out of a can.

Of course, it goes without saying that equipment that works perfectly fetches more than equipment with problems. Check with a dealer to see how much repairs cost. While there, see if the dealer offers a consignment program where they broker your gear and take a commission.

Records, Please

When you show the equipment, be prepared to show a notebook containing the purchase receipts, manual, service guides, date(s) of service, what service was performed and by whom. Keep detailed records. There are few things more reassuring to a prospective customer than to have you say, "Yes, I bought this deck from XYZ four years ago. It's been to the shop twice, both times for minor problems. Steve worked on it. Perhaps you'd care to call him and ask what he thinks of this machine."

Don't forget that almost any gear you can sell, you can donate. Always check with your accountant or attorney to make sure that you handle the transaction in a way that obtains the most appropriate tax deduction.

Seller Beware

One warning: Just because you are a righteous participant in the personal video revolution, don't believe everybody is. A "check in the mail" doesn't pay your bills, and banking a bad check may end up costing *you* service fees. Protect yourself by requesting funds in guaranteed form—a cashier's check or money order—or take cash on the barrel head.

Remember also that to bring a prospective buyer who is unknown to you into your home may carry a risk. Have someone with you when your customer visits, and try and to get their car's license number as they leave. Don't let them have the run of the place.

Softest Sell

The easiest way to recover the value of older video equipment is not to sell it at all. Many post houses use their older generation equipment to equip off-line rooms. Consider this for your facility. It may be great to have a place to preview and log tapes, or you could charge others to off-line in your second suite, while you are performing amazing effects with your Toaster in the online room.

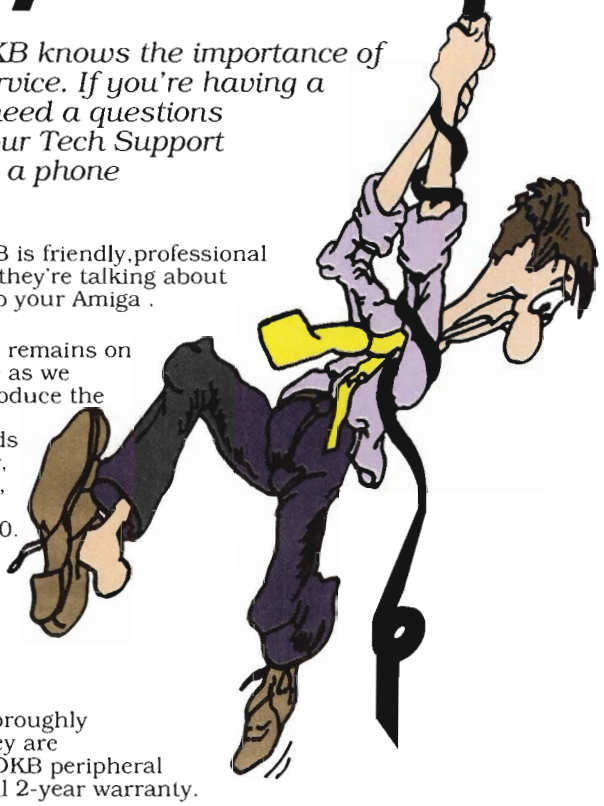
By the same token, as Toaster 4000s come online, it might seem reasonable to expect that used 2000s and 2500s will appear on the market in droves. However, Toaster users may be well advised not to sell their older Amigas. Card slots are at a premium in the 4000, and stand alone devices such as on-card TBCs may more comfortably remain behind in 2000 chassis. Also, there are a rash of interesting new products that can move into a de-Toasterized 2000. These include a disk-based video recorder for real-time and single-frame recording, a multi-layer image processing and compositing system, and various video signal test and measurement devices.

If you decide to sell your used Amiga, follow the general guidelines listed earlier—just adapt them to desktop buyers: Amiga users groups, Amiga BBSs, desktop video and Amiga trade publications and other classified sections.

VTU

We won't let you down!

Hang on! DKB knows the importance of customer service. If you're having a problem or need a questions answered, our Tech Support Team is just a phone call away.



Everyone at DKB is friendly,professional and know what they're talking about when it comes to your Amiga .

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- Sonia King, Amiga Hobbyist

"With Workbench and CLI, you waste too much time using correct syntax and looking for the right program to view the right file. With OPUS, everything is at my fingertips."

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Face it. The more you do with your Amiga, the tougher it is to organize hundreds of files, directories and programs. How do you copy a file? How do you view and manage multiple directories? Which viewer works best with which files?

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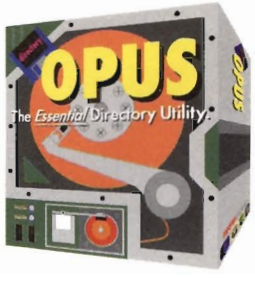
Pick up a copy today, or call INOVAtronics at ***1-800-875-8499*** for the location of the INOVAtronics dealer nearest you!



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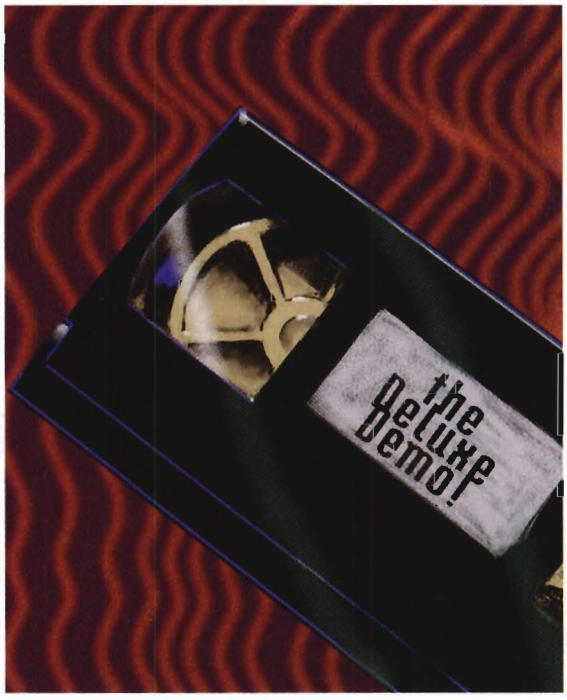
How To Make An Impressive Demo Reel

By Thomas Dawson

"Showing your demo reel...is the moment of truth."



Editor's Note: This is the final installment of a three-part series by Thomas Dawson. His "A Complete Business Tutorial for Freelance Videographers: and "How to Make a Company Brochure" appeared respectively in the April/May and June/July issues of Video Toaster User.

Showing your demo reel to a potential customer is in effect the moment of truth. All your claims of high-quality professional work are either proven or disproven by what is shown. What it boils down to is this: Your work is only as good as your demo reel. The Video Toaster produces the required picture quality, but your own capabilities must shine through! The determining factor in your success as a freelance videographer is the impression your demo reel makes on a potential client. Of course, the most impressive demo reel is one which makes the client say, "I want the work you do for me to look that good!"

Making A Demo Reel

What material should you use on your demo reel? If you do not have previously-produced material, such as videos you've entered in contests and festivals, start working. The practice of entering video contests before starting your business gives you experience in meeting a deadline, garners awards and honors for you to mention in your brochure, and provides ready-made material for your first demo reel. If you win any awards or honors, use the best parts from those videos.

Along with entering video contests and festivals, I strongly recommend producing a couple of public service announcements (PSAs). Pick your two favorite charities and make each a free television commercial for their cause. Television stations and cable services air PSAs for free. This can truly be considered a win-win situation. Your favorite charities get a free commercial which is aired by local broadcasters, and you get some great experience. Now you can say your work has been shown on television and you also have more material for your demo reel. Treat these jobs like any other professional assignment by making storyboards and production schedules. These two pre-production efforts are used as practice runs before actually starting production.

Recording Quality

To make an impressive demo reel, start with the tape it's recorded on. You should have a master copy on the highest-quality format you can afford. This can actually be better than the format you normally use in production. Demo copies are made with the best format the client has available at their facility or the best format you have available at yours.

Avoid showing your demo reel on a VHS tape (to most video professionals VHS tape is synonymous with amateur quality)—use VHS as a last resort. If VHS is your only option, then use the biggest most impressive tape you can get. I recommend the T30 from 3M Corporation. It comes in a large plastic clamshell case which closes with a sliding clasp. If you can't show your demo reel on an impressive format, then you can at least bring it to the customer in an impressive case.

Next, consider how the tape is labeled. This sounds a bit picky but it adds a nice touch of professionalism to your work. You don't need to spend a fortune on this—using labels from your printer works just fine. If your printer labels match the style used in your other promotional materials, then so much the better. Avoid using hand-written labels on what is supposed to be a professional product.

The label should provide your company name and the year the tape was produced, followed by the words "Demo Reel" and a copyright notice. Also, use a label for the tape case or sleeve. The best place to label the container is along the side (the spine), which is visible when the tape is stored like a book in a bookcase. These long skinny labels are available in sheets or tractor-feed format for your printer through different companies. One company, PolyQuick, is a good source for labels, cases, blank tapes in any format, or just about any other replenishable item needed for video work.

Scripting the Show

From this point on, when I mention the "demo reel," I am specifically referring to the footage that comprises the demo reel. Let's break this show into five parts: what is shown before the demo reel starts, the introductory sequence, the examples of your previous work, your closing sequence and what is shown after the demo reel ends.

Before we actually start the show, we want to throw in a few items which help give us a professional look. At the very beginning, you may want to show a set of color bars. This is purely optional and shouldn't last very long, approximately 15 seconds. Supply an audio tone with the color bars for setting a proper sound level.

Your next visual is what is called a slate. Color bars or not, the slate should not

begin in the first 15 seconds of the tape. The first portion of any tape has the most potential for signal dropout so we pass it by. For a demo reel, the slate is merely the same information you provide on the tape's label—just displayed onscreen for five to eight seconds. The important point to remember is to have a copyright notice as part of our presentation. The final item is a countdown prior to the start of the show. The countdown sequence provided by the Toaster's Switcher works just fine but remember, this is your demo reel. A custom countdown sequence which matches your overall company image would be much more impressive.

The opening sequence to your demo reel can be an animation of your company name and logo, if you have one. This should not be the most impressive part of the show but simply appear quick, clean and professional. Having your own company name outshine everything else in the show does not make the right impression. You want to show some pride in your company, but don't want it to look as though nothing else turned out right.

A good idea would be to animate the designer pattern used for the company promotional materials and bring up your company name and logo as part of that. If you're not into the animation side of the Video Toaster, then find someone who is. Building a professional relationship with an animator also allows you to list animation services in your brochure. Your demo reel has to look as professional as possible so animated titling is strongly recommended.

At this point, make a decision about the soundtrack and how to choreograph your presentation. The soundtrack starts at the introductory sequence and fades out at the end of the closing sequence. Keep in mind that the quality of the soundtrack has to match the quality of the videography, so if you can create a custom soundtrack on your own or have access to someone who can make one, then this might be your best option. I feel terrible when I see an otherwise excellent demo reel ruined by a poor soundtrack.

If you are not a professional musician or do not have access to music/MIDI software, then I suggest contacting a music library company. One company, The Music Bakery, is a CD-of-the-month club for background music. Their music is always of the highest quality and each song comes in a set of variations based on playing time. They send you a new CD each month and if you don't like it, you can send it back. You pay for the CDs you keep at a cost of about $50.00 per disk. This is not expensive because when you buy the disk you are also buying limited rights to the music. This means you can use the music in your own productions without paying any money in royalties or other usage fees. Normally you have to pay royalties to the owner of the music rights every time you use it. With The Music Bakery, you can use the music as many times as you want just for the price of the CD. I personally feel this is a pretty good deal.

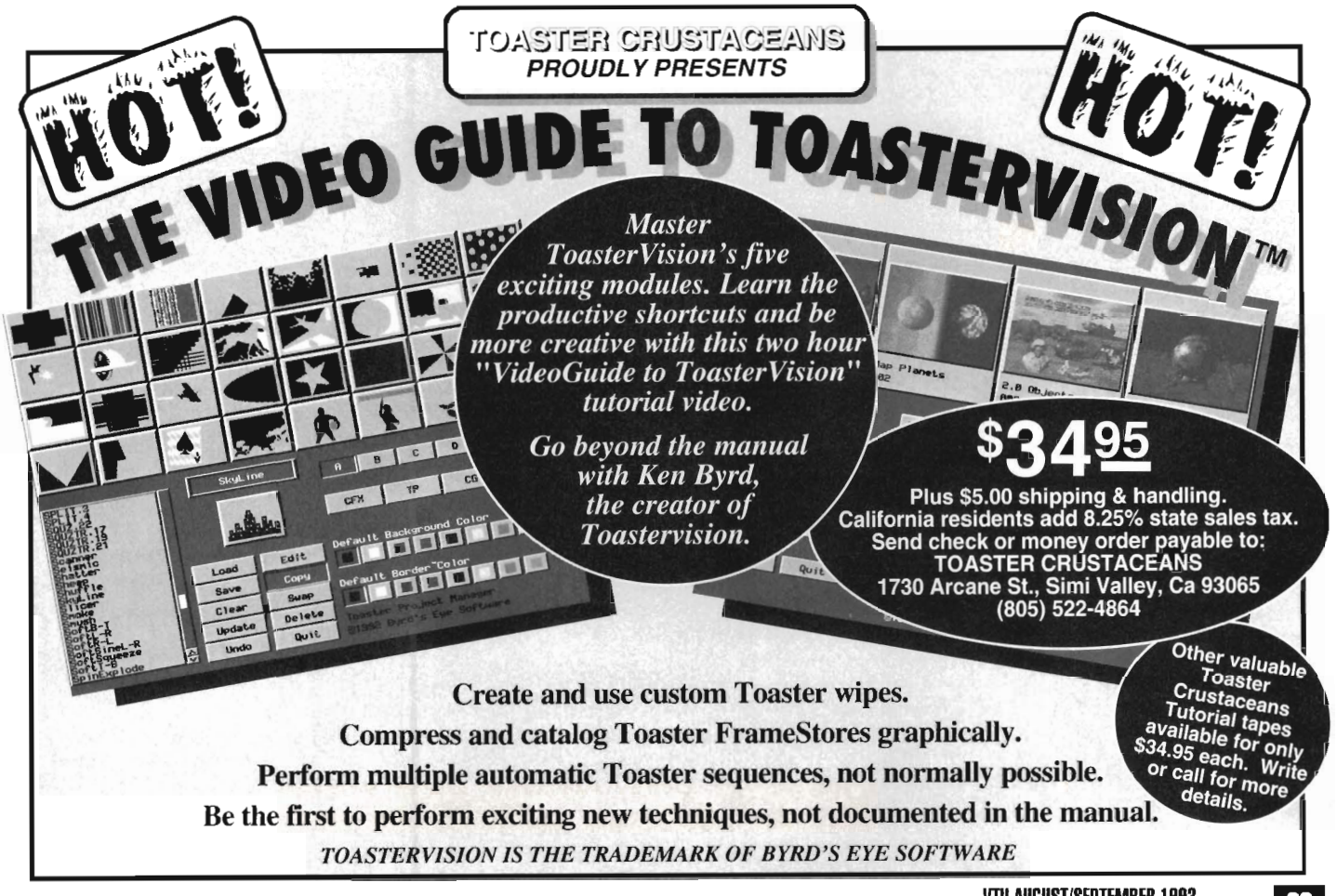
Editing

The choreography of your demo tape is a careful exercise in taking existing video sequences and arranging them in some sort of sensible order. The music on the soundtrack should give you a good place to start, and since you don't want to rearrange the soundtrack, rearrange the order of the video sequences.

Here we take music written independently of our work and try to fit our video to it. You want the action in the videos to match as closely as possible to what the soundtrack is doing. *[Editor's Note: For more information about editing rhythm, see "From Home Video to Home Box Office, Part II" by George Avgerakis, in the June/July 1993 issue of* VTU.*]* The best way to do this is to take each video sequence and find the section of the soundtrack which fits it best. Sometimes there are gaps and overlaps among individual video clips, but there are ways of handling them. First you need to keep arranging things until each gap or overlap lasts only for a couple of seconds at most. Wherever there is an overlap, use a fade transition between the two overlapping videos. The length of the fade is set by the length of the overlap between the two videos. Everywhere there is a gap, you need to add some filler material. The content of this filler material is comprised of animated patterns based on the designs used for the company promotional materials. I suggest keeping the transitions to and from the filler material to simple fades and cuts.

Everyone knows the Video Toaster comes with a bewildering array of video transitions, but this does not mean you need to use every single one of them. I suggest that you shy away from over-transitioning your demo reel. NewTek had to have a lot of transitions in their demo reel in order to show the Video Toaster's capabilities. The purpose of a demo reel is to showcase your work as a videographer, not to catalog a vast set of video transitions. Clients should concentrate on the quality of your video work, not on transitions between scenes in our demo reel. The best transitions go unnoticed by the viewer.

Continued on Page 94



Demo Reel Continued From Page 93

The closing sequence is much like the opening: a visual of your company name and logo. However, this one should be slightly different. The closing sequence is a way of saying "The End" without actually printing it on-screen. Using "The End" has come to be associated with tacky production values. Try to think of the last time you saw a movie that ended with the words "The End." It's very common to close by using a simple cut or fade to black after the last scene. I try to be a little creative by having my demo reels end with a blue biplane which rips through the end of the closing sequence from behind and appears to fly over the head of the viewer. When this is over, the only thing left is a black screen with a small copyright notice at the bottom. The copyright notice fades out after a few seconds and the demo reel is finished.

Once the demo reel portion has ended, insert at least 10 minutes of black afterwards. Having the screen go to snow right after the demo reel ends look like a mistake in editing. Another reason to finish with a few minutes of black is that you can casually walk over and turn off the player at your leisure. Don't be in a hurry to jump up and shut off the machine. Displaying an unhurried manner helps build an impression of being calm and confident with the client.

Never-Ending Improvement

The cardinal rule of demo reels is to always improve, but adding newly-produced work requires written permission from the client that paid for it. The easiest way to do this is to have a line item in your contract which indicates whether the client does or does not give permission for the work to be used as part of a future demo reel. Along with updating your demo reel, there are other things you can do to help give you an edge. Two examples are adding a spoken narrative and creating multiple demo reels targeted at a specific market.

Adding a spoken narrative means making your demo reel into a short commercial for your company. The content of the narration is critical and has to be performed by professional voice talent—someone who makes a living doing voice-overs. The basic narration text should be based on convincing the client that your company is the right choice for video services. This is done through citing specific evidence about the quality of your services. This evidence comes from what is printed in your company brochure. Discussing them while actually showing how great your work is creates a pretty convincing show.

Going after a range of video markets means it's probably a good idea to have multiple demo reels. A client interested in a wedding video may not be thrilled by watching a cause-of-death animation done for a court case. I'll be the first to admit this means you have a lot of work ahead of you. The best way to handle this is to start concentrating your efforts on a single market and expand your business one application at a time. As long as all the video sequences on a demo reel are of interest to a single viewer, it's fine to put them together. When you find that your demo reel has different parts which interest different kinds of clients, then it's time to consider splitting it up. The decision to expand into an entirely different market is based partly on whether it is worth creating a whole new demo reel.

Proving You're a Professional

As a final note, I would like to give some pointers about coordinating the look of all of your company products. It is a hard fact that the quality of your demo reel is the single most important factor in your success as a freelance videographer. Having a completely-coordinated appearance between all of your products makes your demo reel look much better.

The video production business is often a competition to prove who can produce the most professional-looking work, and the proof of your professionalism is given by the contents of your demo reel. Make a lasting impression.

VTU

Thomas Dawson is the owner of Animation Effects—an award-winning freelance animation company whose past clients include major automobile manufacturers, insurance companies, real estate corporations, video production houses and cable television.

Companies Mentioned:

PolyQuick
1243 Rand Road
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REVIEW

The Box
Bernoulli for the Amiga

by Lee Stranahan

Could not save frame: Disk Full. This is not the message you want to read at the eleventh hour of a production with the client impatiently tapping their foot and pulling their hair out. If you get this message, that all-important framestore or animation doesn't get saved, and you have to decide what other frames get deleted to make storage space.

This scenario is all too common with many Toaster owners. The problem is hard drive storage. Many Toaster 2.0 systems supplied only a 52 megabyte (MB) hard drive; and with Toaster software needing approximately 30 MB, there isn't much room for graphics storage.

Toaster 3.0 and 4000 are even larger—requiring nearly 100 MB. In addition, one of the niftiest 4000 features is the ability to play back animations. However, a six-second animation can easily gobble up 15 MB of valuable hard disk real estate. All of this adds up to filled hard drives and lots of frustration.

One solution is to add another, bigger hard drive (which can quickly become filled and present the same problem). That's why many Toaster owners use removable media drives. These units use cartridges, similar to floppy disks, but are faster and hold more information. When one cartridge is full, you simply remove it and pop in another one.

To date, the most popular and well-known removable media drive is the SyQuest cartridge system. In fact, among may Toaster users, SyQuest has become synonymous with removable media. Computer buffs, on the other hand, remember that one of the first removable media drives was the Bernoulli Box. Unfortunately for Toaster owners, the Bernoulli wasn't previously supported on the Amiga, so SyQuest became the de facto standard.

Well, the box is back. Iomega recently introduced *The Box* for the Amiga—and it's a winner. It has three big advantages over the SyQuest: storage space, cost and reliability. For removability, these are the advantages you need and want.

Storage Space

First, let's look at storage space. The Box has it in spades. Its standard cartridge provides 150 MB. That's bigger than many hard drives and is nearly double the space on SyQuest's current largest cart, which has 88MB. The Box's cartridges are also thinner and less bulky than SyQuest's. In addition to the 150 MB cartridge, The Box also reads and writes Bernoulli's 105, 65, 35, and (with decreased performance) 90 MB cartridges.

For Toaster 4000 users, a 150 MB cartridge is very useful, since the standard Amiga 4000 drive is 120 MB. This means you can back up your entire hard drive onto one cart, as opposed to swapping a SyQuest cart or using hundreds of floppy disks.

Speed

The Box is fairly quick for a removable media system—in fact, it seems to be nearly as fast as my regular Quantum drive. To test speed, I connected the Box to my GVP G-Force '040 card (which has a built-in SCSI controller). Then I booted SunRize's Studio 16 audio recording package. Recording CD-quality audio straight to hard disk is a grueling job for any drive; but with the Box and my Toaster configuration, it worked flawlessly.

Will It Hurt My Wallet?

Price seems to favor the Box as well. Bernoulli's 150 MB cart and SyQuest's 88 MB cart both sell for just over $100, but The Box gives you almost twice the storage space. While the SyQuest drive mechanism runs about $200 less than Bernoulli's, after purchasing a few cartridges The Box more than makes up the price differential.

Reliability is another important consideration. SyQuest has previously had reliability problems; and although they've improved, I still get an unusual chill up my spine when I knock a SyQuest cart off the tabletop. Bernoulli's carts, on the other hand, can withstand a force of up to five Gs—which is like dropping a cart eight feet onto a concrete floor. This means that even the U.S. Postal Service probably can't inflict damage.

As a real-world test, I recorded data to the drive, pulled the cartridge out and tossed it to a friend of mine standing across the room. We threw it back and forth a few times, and because I'm a klutz, it hit the floor more than I care to admit. It didn't land too lightly, either. When I put the cart into the Box, it worked fine—no problems at all. It's nice to know that the carts can take a smashing and not start crashing.

The Box's cartridges are guaranteed for five years. This is another cost savings because with fewer damaged carts, less money is spent replacing them.

The Bottom Line

The Box has some real advantages over the SyQuest: it's just as fast, holds more, costs less, and can stand up to the rigors of day-to-day work. As the reigning king of the hill, the only advantage SyQuest has is, well, it's king of the hill. If you bring your cartridges over to a friend's studio, chances are they have a SyQuest.

Fortunately, the Box's trasportable version answers this in a pretty slick way—you can bring the entire drive with you. The transportable version has a fold-out carrying handle, which makes traveling a breeze. Since the carts are so rugged, you don't have to worry about losing data. The Box is also available in an internal version.

Toaster 4000 owners should be aware that the Box is a SCSI device and does not work with a stock Amiga 4000. A SCSI card is needed.

I'm very impressed with The Box and Iomega's attitude towards the Toaster market. They're very excited about personal video production and want the Box to be standard equipment for Toaster users. With its combination of cost and practicality, as well as the ever-increasing need for Toaster storage, I'd say it's a pretty good candidate for the job.

VTU

The Personal Animation Recorder

By Tim Doherty

Every once in a while, a product appears on the market which not only changes the way people do business, but also charts a whole new course for the market itself. The Toaster put sophisticated video production into the hands of the masses by combining easy-to-use, feature-laden software with inexpensive but powerful hardware. It launched the desktop video industry and inspired a host of innovative, cost-effective third-party video and graphic products.

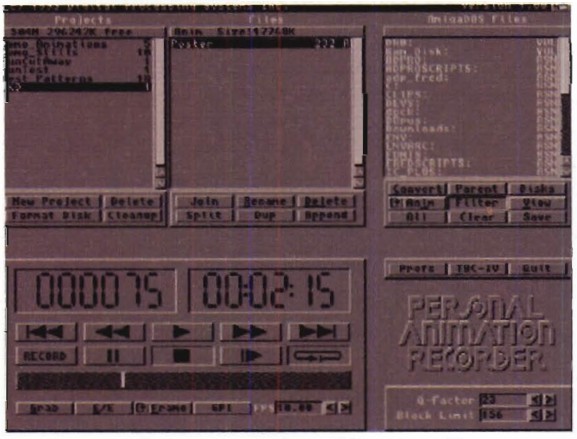

Figure 1: The PAR Project Manager Screen

Digital Processing Systems (DPS) has been leading the subsequent charge of Toaster-compatible hardware. Their Personal TBC and Personal V-Scope set the standard for affordable time base correctors and vectorscopes. And at this year's National Association of Broadcasters convention in Las Vegas, DPS introduced yet another trendsetting desktop product: the DR-2150 Personal Animation Recorder, or PAR. In keeping with the breakthrough performance of their Personal product line, PAR enables animators to play back 24-bit animations in real time, with component analog and S-VHS output. It replaces both the single frame controller and the videotape recorder. What NewTek's hardware does for the videographer, the DPS DR-2150 does for the animator.

PAR Overview

The PAR system consists of a single card which plugs into a zorro expansion slot of an Amiga 2000, 3000, or 4000. This card employs proprietary hardware JPEG algorithms with Q tables optimized for animation, so 24-bit image sequences can be compressed for real-time playback. In addition to the card, there is an elegant software interface which provides VCR-type controls. A dedicated IDE hard drive (not supplied) stores the compressed animations, and plays them back in realtime through the PAR board. An optional DPS TBC-IV card can be added for real-time rotoscoping.

Like other DPS products, the PAR card is handsomely-designed and brimming with custom chips. It has a 50-pin connector for the TBC IV card, and a 40-pin connector for the IDE hard drive. Neither is keyed, so it is possible to mistakenly attach the ribbon cables backwards. This doesn't hurt anything, but the product won't work either.

An IDE hard drive controller is built into the board. The hard disk cannot be mounted to the card, so you need a floppy bay or other card to hold the drive. DPS recommends a hard disk of at least 500 megabytes (MB), providing an astounding three to five minutes of playback. Note that this is a dedicated hard disk. As such, it cannot be used by other Amiga programs. In fact, the Amiga system will not even recognize the existence of the drive unless the PAR software is running. However, as long as you are using PAR, the dedicated drive functions as a DOS disk, so you can copy files from it. SyQuest owners who have previously rendered onto cartridges, will probably find it best to render directly to the IDE drive, then use their SyQuests to back up the compressed 24-bit animations.

The back of the board contains one S-VHS and five BNC connectors. The BNCs were not labeled, nor were they identified in the preliminary operations manual I received. DPS tech support quickly identified them in descending order: S-VHS output; composite output; Y, R-Y and B-Y component output; and genlock in. Tech support also advised me that the card is designed to display either S-VHS or component signals, but not both at the same time.

The system is easy to install. After plugging in the card and attaching a Segate 3600A 540 MB hard disk, I simply executed the auto-install program on the supplied PAR diskette. After it finished copying the PAR software to my Amiga's DH0 drive, I double clicked on the PAR icon to open the Project Manager program. At this point the IDE hard drive was automatically added to my system under the name DDR. DDR is actually a virtual disk, used as a front end to the dedicated drive. The user doesn't need to worry about this technical difference, since DDR functions as a standard DOS disk as long as PAR is running.

The PAR Project Manager

Figure 1 shows the PAR user interface. I found it to be exceptionally well-designed and friendly. All work done on the dedicated hard disk is divided into directories and indentified by PAR as projects. Projects can contain more than one animation, but cannot be divided into sub-directories. Loading stills or animations for playback is a simple matter of clicking on a directory in the Project requestor, and then clicking on the appropriate filename in the Files requestor. The VCR gadgets can then be used to play the animation.

Buttons below the requestors provide a number of useful tools for managing the hard disk and animation files. For example, you can split animations into two, join two or more animations into one, or append an existing animation. You can duplicate either an entire animation or a range or frames. You can also set an animation or frame range to loop, ping pong or reverse. Other buttons allow you to delete files or directories, format the hard disk, rename files or optimize the drive.

Keeping the drive optimized is important for real-time playback. Though PAR optimizes the projects as they are created, deleting files may cause the unit to become fragmented and requires that you use the Cleanup button to optimize it.

Compressing files is almost as easy as recalling them. After selecting or creating a project, use the Anim/Still button to choose whether to convert still pictures or an animation. If the image files have been pre-rendered, you can select them with the AmigaDOS file requestor. Clicking on convert compresses them to the current project directory. If you are creating a PAR animation on the fly, as it is rendered, just tell LightWave to save the framestores or images to the appropriate project directory of the DDR drive. When LightWave is finished rendering, click on

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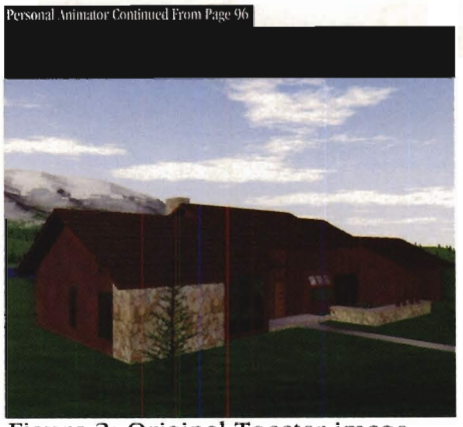

Figure 2: Original Toaster image

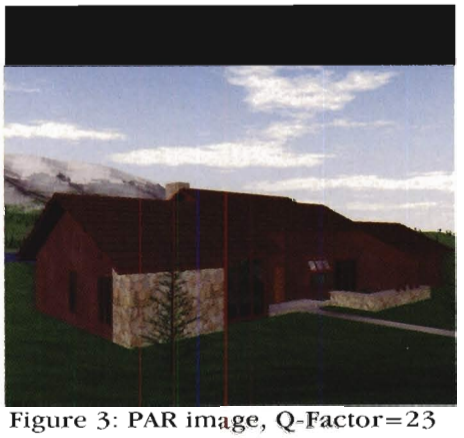

Figure 3: PAR image, Q-Factor=23

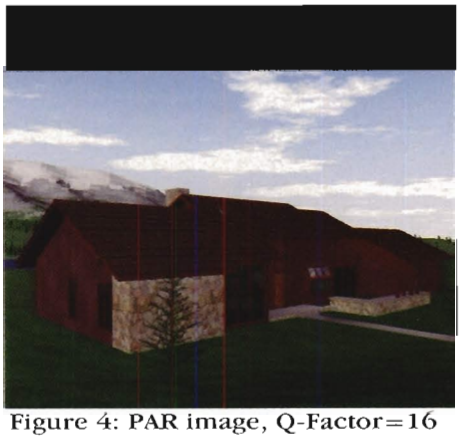

Figure 4: PAR image, Q-Factor=16

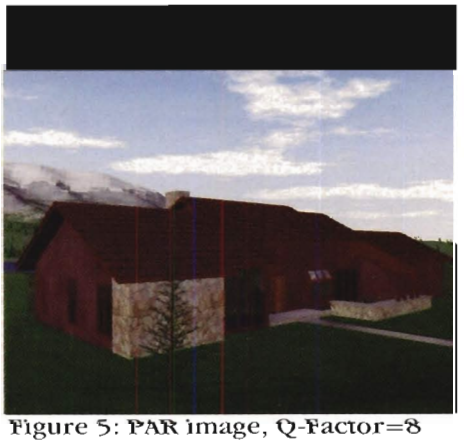

Figure 5: PAR image, Q-Factor=8

the Done button in the PAR requestor. PAR prompts you for a file name, which is loaded automatically for you to play back.

There are a couple of other important considerations when compressing 24-bit images. The bandwidth of IFF files is often too high for video, so the Filter button filters the chrominance signal. The effect is very slight, and usually not perceptible. DPS recommends that the Filter button remain activated at all times, unless you are reconverting IFF pictures which had previously been compressed (and thus filtered) by PAR. Framestores are already filtered, so PAR automatically ignores the filter button when converting them. Incidentally, when using PAR, it is preferable to render IFF images in LightWave rather than Framestores. Framestores are an NTSC format which over-filters the chrominance signal. This results in slightly-soft chroma edges. DDR does not filter as much, and therefore produces slightly better images when converting IFFs rather than Framestores.

The Q-factor determines the amount of compression PAR employs and, correspondingly, the quality of the resulting image. Generally, the Q-factor should be left at its highest setting of 23. Compression time is about five seconds at this level. When PAR creates an animation, it automatically adjusts the Q-factor to the setting nearest to your selected level, based upon the block limit of the hard drive. The drive's block limit determines the speed with which data can be read from the hard disk. If the file size is too large, PAR is unable to read data from the disk at 30 frames per second (fps), and adjusts the Q-factor to the nearest amount to ensure playback at full speed.

Digital VTR

PAR's VTR controls are delightful to use. As illustrated in Figure 1, there are two large counters. The first displays the frame number during playback, and the second displays the running time in SMPTE format. Buttons allow you to play, stop, pause, single step through the animation in either direction, or jump to the first or last frames. You can also tell PAR to loop the playback, though there is a very slight pause each time the hard disk moves back to the beginning of the file. Other gadgets allow you to slow the playback rate, display either frames or fields, activate GPI control to start the playback, or set PAR to grab frames from the TBC IV.

If that is not enough, DPS also included a slider bar so you can scroll back and forth through the frames of the animation. All of the controls function instantly. It is undoubtedly the most responsive method I have ever seen for viewing a 24-bit animation.

Performance

The obvious question is: How good is the actual output? Obtaining a clean component signal without spending a small fortune has long been a problem for the desktop animator, and one of the biggest stumbling blocks to competing with high-end systems. I'm pleased to report that PAR's S-VHS and component outpnts are dazzling. Signal to noise is 60 decibels, and the video bandwidth is 5.5 megahertz. I tested it going to a Sony PVW 2800 Betacam VTR, and was impressed to see a perfectly clean signal. PAR's preferences screen allows you to toggle between MII and Betacam components, so the card is well-suited to either high-end format.

This leaves only the question of compression

quality. At its highest level of compression the results were very impressive. Figures 2 and 3 show my original Toaster image versus an image compressed with a Q-factor of 23. I could see no difference. In fact, the compressed file, which was reduced by a factor of four to one, actually looked better on my monitor than the uncompressed Toaster output because of the component signal. Unfortunately, I was unable to create any animations at this level of compression due to the playback speed of the hard drive. PAR automatically dropped the Q-factor to around 16. The resulting playback was still very nice, but some image loss was evident, as shown in Figure 4.

Overall, considering the slight image loss, I still prefer PAR's compressed component signal to the Toaster's composite one—even without taking into account the obvious benefits of using PAR's real-time playback. At still lower Q-levels, the image loss is more apparent. Figure 5 shows a Q-factor of 8. The manual states that a quality level as low as 8 may be needed to capture real-time video with the TBC IV, since PAR otherwise might not have enough time to compress and save the images. Though I have not had the opportunity to test PAR's download ability, I suspect that this might produce frames of borderline quality.

The ease of being able to instantly combine, spilt, play, append, and modify rendered animations must be experienced to be appreciated. PAR performed flawlessly in this respect. I was able to join separate scenes together into one long animation, and also cut and paste frames which had to be retouched. The only problems I encountered occured when I tried to play animations at slower speeds, such as 15 or 10 fps. This caused occasional glitches, because the animations were encoded at a Q-factor close to the hard disk's maximum speed, and playback at slower speeds then became not purely sequential. Acording to the manual, the only remedy is to re-do the frames at a lower Q-Factor. The manual also states that "this would be an extremely rare case," but I found it to be the norm.

Overall, the Personal Animation Recorder is an extremely easy-to-use, powerful method of outputting LightWave animations, providing more flexibility than ever before. Its compression is very good, and its component output is outstanding. The real-time playback is a joy and amazing, when you consider that it can hold a whopping three to five minutes. That probably represents at least a few months of work for most animators. With a list price of $1,995, and a total system price (including hard drive) of about $2,800, I believe that this unit will reshape the industry.

VTU

Tim Doherty is a professional LightWave animator. Contact him at:

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The **BreadBoard** has five video buffer amplifiers, three with delay lines. The buffers are strappable between PGM output, PVW output, Inputs 1-4, Key source signal, Key Insert video.

The **BreadBoard** cables into the Video Toaster feature connectors; uses none of the six external BNC's.

The **BreadBoard** physically mounts inside the Amiga in a PC expansion slot, using only power from the bus; no bridge board required.

The delay lines can be strapped for a wide range of delay and adjusted for unity gain. All outputs are rear mounted BNC's. A dual board configuration achieves maximum flexibility: Four delayed Inputs, two delayed Key signals, Four Program/Preview outputs.

PreVue Technologies
(Formerly Cardinal Video Products)
P.O. Box 2617
Grass Valley, CA 95945

916-477-2905
916-272-1528 fax
$398

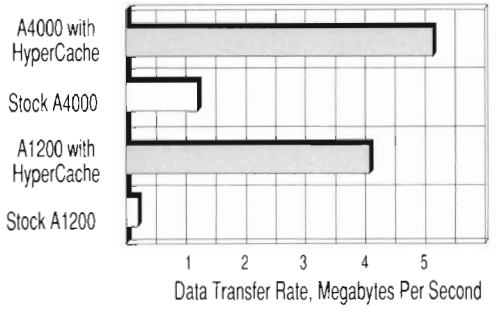
TM's Commodore Business Machines, NewTek, Inc., PreVue Technologies.

HyperCache PROFESSIONAL

Silicon Prairie Software
2326 Francis Street
Regina, SK S4N 2P7
Canada (306) 352-0358

HyperCache Professional is a filesystem and device accelerator unlike any ever available for the Amiga! A must for any serious Amiga user, it can provide performance increases of up to 2200% on your storage devices. HyperCache is an N-way associative line/set cache, and accelerates all device operations, such as program loading, directory scans, Workbench operation, and more! Great for large font and image libraries, it's like having all of your most-used data in a RAM disk. HyperCache is compatible with Kickstart versions 1.2 through 3.0 (including the new DCFS). It works with OFS, FFS, and MS-DOS filesystems on Amiga hard drives, floppy drives, and CD-ROMs. Toaster and network compatible!

- *Toaster Compatible*
- *KickStart 3.0 Compatible*
- *Network Compatible*
- *Get Workstartion-like performance on any Amiga!*
- *Performance increases of up to 2200% over Addbuffers*
- *Great for font and image libraries*



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TAO

EDITIZER 2.0

PC-Based Edit Controller

The TAO Editizer 2.0 is a hardware/software combination video edit edit controller that runs on Windows 3.1 and supports both Prosumer and Professional equipment. The Editizer comes complete with integrated Windows-based software for VCR control, A/B Roll Editing, tape logging, EDL management andd EDL import/export. The Editizer supports virtually every protocol including Sony Control L, Panasonic 5-pin, RS-232 parallel and serial. It has 3-VCR control, an auxiliary serial port and multiple GPI triggers. It has switcher control for the GVG-100, WJMX-50, Toaster and will control most of the other devices in your suite.

Hardware Features:

- Three VCR control ports for true A/B roll. Each VCR port can support a different protocol. (For example, you can use a Panasonic AG-1960 as "A" source, Sony EVS-3000 as "B" source and JVC BR-S822 as record VCR).
- Built-in SMPTE Longitudinal (Audio) Time Code generator with external and internal video sync.
- Three multi-speed SMPTE Longitudinal time code readers.
- Auxiliary serial port for full control of Newtek Video Toaster, GVG 100, and Panasonic WJ-MX50 switchers.
- MPC Audio and MIDI support for embedding sounds and MIDI sequences in your EDL.
- DPS TBC II & III support – you can control two personal TBC cards and the Personal V-Scope from a serial port.

Software Features:

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

HORITA

TG-50 Time Code Generator

- Generates SMPTE in drop or non-drop frame
- Jam sync mode jams to TC input and outputs new TC
- Mickes burned-in SMPTE time-code window dub
- Simple on screen preset of time code and user bits
- Compatible with all 1/2", 3/4" and 1" tape formats
- Battery operation allows portable field use

TRG-50

Has all features of TG-50 *Plus:*

- Reads and displays SMPTE time-code from 1/30 to over 10x play speed
- Reads forward and reverse

TRG-50PC

Includes TC-TOOLKIT Tape Logging Software Package

• Has all the features of the TRG-50 *Plus* -

- "Two-way" communications with IBM compatible PC using RS-232 serial port. No plug-in cards required, log in field using portable PC
- TC-TOOLKIT with six time-code programs
- Includes serial cable, DB-9/DB-25 adaptor, 3-1/2 and 5-1/4 disks

BSG-50 Blackburst & Sync Generator

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

- 6 BNC video/pulse outputs
- Outputs can easily be configured to meet specific user and equipment needs
- 4 black-burst, 4 sync, and 2 subcarriers available
- Each sync output individually settable for composite sync, composite blanking, H-drive or V-drive
- Separate buffer for each output provides maximum signal isolation.
- OdB, 1KHZ sinewave audio one output
- DC powerable tor use in the field
- An unusually versatile black-burst, sync pulse, and audio tone generator.

FutureVideo

EC1000 PRO Series • EditLink 2200 Series

EditLink 3300 Series

Since 1986 Future Video has been a recognized leader in the manufacture of desktop videotape edit control systems. Whether you need a "stand-alone" controller (EC1000 PRO Series) or a PC-based controller (EditLink 2200, 3300 Series) Future Video's award-winning line up with the latest features and advances in desktop videotape editing has a controller to fit your needs.

STANDARD FEATURES:

- Using low-end industrial VCRs like Panasonic AG-1960, AG-1970 an accuracy of 2 frames is achieved. With same VCRs and time code 1 frame accuracy is achieved.
- Any of Future Video's controllers can edit between any combination of VCRs equipped with Panasonic 5-pin serial remote terminal (AG-1960, AG-1970) and over 100 consumer and prosumer camcorders and VCRs equipped with Sony Control-L (LANC) serial remote terminal.
- They each perform four editing modes - Quickly and precisely executing Assemble, Video Insert, Audio Dub and Audio/Video Insert editing modes.
- True E-E (Electronic - Electronic) Preview - insert edits with certain VCRs may be previewed in true E-E model allows all e d t s to be "rehearsed" before they are performed) ensuring correct placement of each scene in your production.
- They provide fast and accurate editing by cuing both the player (source) and Record (edit) VCRs or camcorders to their pre-roll position.
- Upgradability - All models may be factory-upgraded (certain models may be field upgraded) to higher model specifications within the same series. As your needs evolve, your edit controller can grow with you.
- Reliability - All FutureVideo edit control products carry a full 1 year parts and labor limited warranty. FutureVideo products are precision engineered and manufactured - with pride - in the USA.

EC-1000 PRO

- EC1000 PRO is a stand-alone, cuts-only control track edit controller. Controls any two machines with Panasonic 5-pin and/or Sony Control-L serial editing terminals.
- 5-digit LED display (hours/minutes/seconds)
- Up to 9 scenes can be stored in memory and then executed automatically.
- Built-in GPI trigger fires at edit pre-roll and edit out points. Can be used with any SEG (Special Effects Generator) with GPI input like the Video Toaster or WJMX-50. GPI trigger can also be used to set off second source VCR so you can do semi-auto A/B roll while doing your effects on-the-fly with a switcher like Panasonic WJMX-12.

EC1000 PRO MKII

The EC1000 PRO MKII has all the features of the EC1000 PRO Plus-

Additional Features:

- Can read Sony's 8mm RC time code. Sony camcorders (CCD-V801 and future models) that output RC time code can be used, resulting in 3 frame accuracy.
- 7-digit LED display (hours/minutes/seconds/frames)
- Built-in RS-232 serial control for connection to IBM or AMIGA computer and Future Video's Edit List Manager series software providing a fast intuitive means to create and manage EDL's (Edit Decision List) of 999 events.

EC1000 PRO/TC MKII

- Same as EC1000 PRO MKII except also has a built-in SMPTE time code reader totally compatible with Professional SMPTE time code. With low-end industrial VCRs like Panasonic AG-1960, AG-1970 frame accuracy is achieved repeatedly without tape slippage errors.

EditLink 2200

- EditLink 2200 is a plug-in card edit controller. A PC-based card that transforms your IBM PC/AT/386/486 compatible into a powerful videotape editing workstation.
- Has all the features of the EC1000 Pro MKII plus it also controls selected RS-232 industrial VCRs like the FVC BRS-605 and Panasonic AG-5700.
- Use with Future Video's Powerful EditList Manager 2000 software or other compatible 3rd party application software like the Matrix Personal Producer to complete your system.
- Has programmable GPI trigger for timed turn on, turn off, or pulse. So now your transitions can be set anytime and not just at the edit points.

EditLink 2200/TC& TCG

2200/TC • Same exact card as EditLink 2200 Plus has professional SMPTE time code reader built-in.

2200/TCG • Same exact card as EditLink 2200 TC Plus generates as well as reads professional SMPTE time code.

EditLink 3300

- With EditLink 3300 true A/B Roll (3-machine control) editing is now possible using low-end industrial, and prosumer VCRs and camcorders.
- EditLink 3300 can control a variety of machines including those with Panasonic 5-pin and Sony Control-L Protocols, as well as selected RS-232 serial VCRs.
- The advanced EditLink 3300 provides easy upgradability using the latest FLASH memory technology. This feature allows adding new functions and new VCR compatibility by downloading the upgrade from your PC to the controller.
- 13 different LED's for monitoring status
- Provides three external programmable GPI triggers.
- EditLink 3300 connects to your computer via a built-in RS-232 serial port. It is platform independent so it will work with AMIGA, MACINTOSH or IBM.

MICROPHONES

SAMSON

WE ARE THE WIRELESS FUTURE™

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 output & headphone level output controls.
- Headphone monitor output – lets you hear the sound you're getting before it goes into the camera.
- Removable flexible Rubber-Duckie antenna ensures perfect reception and easily handles those little bumps in the night.
- Can be powered by a 9V battery for 10 hours.
- SH-2 hand-held transmitter can be used with a variety of 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 microphones like Sony ECM-144 or Audio Technica 831.

Lavalier (clip mic) Systems

- ST-2(L)ECM-144 Transmitter with Sony mic & MR-1 Receiver **349.95**
- ST-2(L) ECM-44 Transmitter with Sony mic & MR-1 Receiver **399.95**
- ST-2(L) AT 831 Transmitter with Audio Technica unidirectional mic & MR-1 Receiver **399.95**

Hand-Held Systems

- SH-2/PR4 Audio Technica Dynamic mic element & MR-1 Receiver **379.95**
- SH-2/58 Shure SM58 Dynamic mic element & MR-1 Receiver **399.95**
- SH-2/85 Shure SM-85 condenser mic element & MR-1 Receiver **549 95**
- SH-2/87 Shure SM-87 condenser mic element & MR-1 Receiver **549.95**

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	499.95
Sony ECM-44	549.95
Sony ECM-55	649.95
Sony ECM-77	679.95
Senheiser MKE-2	699 95
Beyer 10.9 Uni-directional	679.95

SONY

ECM-44B

Omnidirectional Lavalier

- The ECM-44B makes the exceptional quality of Sony's electret condenser microphones easily available for budget conscious productions and a variety of sound reinforcement requirements such as lectures and demonstrations.

SENNHEISER

MKE-300 Short Shotgun

- Lightweight electret condenser mic to support the excellent video capabilities of most camcorders with the superior audio they deserve.
- Ideally suited 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 virtually 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**

NADY

151 VR Wireless System

- Puts the microphone "where the action is" for professional quality audio on your tapes
- Operates on VHF High-Band Frequencies for interference free performance. Two frequencies available.
- Nady's patented Companding Circuitry gives you crisp, clear sound without overload distortion or background hiss. Dynamic Range over 110 dB.
- Compatible with all camcorders and video cameras
- Range is 250 ft. Line-of-sight up to 1500 ft.
- Works with all camcorders having an audio input
  151 VR/LT lavalier system **119.95**
  151 VR/HT handheld system **139.95**

351 VR Wireless System

- The new 351 VR is compatible with virtually all camcorders and video cameras, and delivers sound that is every bit as good as the best hardwired mic.
- Ultra compact receiver – using new technology the receiver is no bigger than an audio cassette and connects instantly to any camera's external mic jack. Attaches either with shoe mount or belt clip both provided
- Both handheld and lavalier transmitters feature transmitter and audio ON/OFF switch, level trim and low battery LED
- Unparalled dynamic range of 120 dB to ensure a soundtrack with no background hiss or overload distortion.
- Available in four factory installed frequencies from 170-218 MHz allowing simultaneous operation of up to four mic systems in the same location.
  351 VR/LT lavalier system **179.95**
  351 VR/HT Handheld system **209.95**

AZDEN

PRO SERIES VHF WIRELESS MICS

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

They All Feature:

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

COMPLETE SYSTEMS

WMS-PRO

- Professional VHF wireless system with 250 ft. range
- Two switchable frequencies (169.445 and 170.245 MHz)
- Includes handheld and lavalier mic for extra flexibility
- Compact transmitter attaches to belt or fits in a pocket
- Includes earphone monitor and leatherette carrying pouch
- Battery-powered receiver comes with belt-clip, velcro and shoe mount for added versatility **149.00**

WLX-PRO

- Sensitive lavalier mic with attached tie clip
- Lightweight belt-pack transmitter with two frequencies
- Includes wind screen, earphone monitor, shoe mount and velcro **139.00**

WHX-PRO

- Handheld microphone with built-in transmitter
- No wires, no beltpack, no tangle-hassle free
- Operates on one AA battery for up to 8 hours
- Has a combination on/off-mute switch for quiet switching
- Includes shoe mount, velcro, earphone monitor **179.00**

ECZ-990 SHOTGUN

- Short electret condenser supercardioid shotgun with two positions, wide and narrow **79.95**

PRO SERIES COMPONENTS

WL/T-PRO

- Lavalier mic with belt-pack transmitter
- Same as WLX-PRO except without receiver
- Now owners of the WHX-PRO can combine the WL/T-PRO and have a complete system of one handheld and one lavalier mic with receiver **99.00**

WM/T-PRO

Now owners of the WMS-PRO can get a completely wirefree VHF handheld microphone with transmitter built in.

- Combine it with the receiver from the WMS-PRO or WLX-PRO and you now have the ultimate quality microphone for interviews or pass around
- 3-position switch for on, off and "standby" for quiet switching
- Choose from either of the 2 switchable frequencies for the cleanest sound **119.95**

NEW! WR2-PRO

- Unique new receiver which allows you to use any two Pro Series mics simultaneously.
- Each transmitter can be from 10 to more than 250 ft. from the receiver.
- Size of a cigarette pack the WR2-PRO mounts on a camera with supplied shoe mount or velcro
- Operates on a 9 volt battery and with optional adapters on 12 volt DC or 120 volt AC **179.00**

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B&H PHOTO-VIDEO

AG-455
2-Hour S-VHS Camcorder

- S-VHS system – records and plays back over 400 lines horizontal resolution
- Laminated amorphous video heads assures exceptional picture quality, high resolution, superb color reproduction, and high S/N signal-to-noise ratio
- 12:1 power zoom lens with continuously variable speed zoom
- Hi-fi stereo and linear track for recording. Also has "Audio Out" select switch for Hi-fi/Normal/Mix combinations
- High performance stereo zoom microphone features three different settings : Wide, Telephoto or automatic zoom.
- Built-in VITC (Vertical Interval Time Code) time code generator gives absolute address to each frame of video for frame accurate editing (with specific edit systems)
- Audio/Video Fade-In and Fade-Out for smooth, professional scene transitions
- Automatic iris plus manual control for fine adjustment
- Variable high-speed shutter from 1/50 to 1/8000 second.
- **Digital Effects:**
  Digital Mix – for soft fade-over between memorized still and moving images
  Digital Tracer – to add an after-image effect to moving subjects
  Digital Still – lets you freeze a particular scene for as long as you like, without interrupting sound recording
  Digital Zoom – Thanks to digital processing, you can enjoy shots with ultra-high magnifications of up to 100:1
  Digital Gain-Up – delivers clear, distinct images in low-light levels, even down to 1 lux!
  Digital Strobe & Digital Wipe – add professional effects to your shooting.

AG-460
2-CCD S-VHS Camcorder

Features:

- Two 360,000-pixel CCD image sensors
- 470 lines horizontal resolution & superb color reproduction.
- Laminated amorphous video heads
- Hi-Fi audio with stereo zoom microphone
- Two-speed 10x power zoom lens
- Piezo auto focus (TTL) with 3-step focus zone
- Sensitivity switch (0 db, + 18 db. AGC) helps overcome lighting deficiencies
- Advanced auto-tracing white balance with manual override
- Black & white Audio/Video Fade-in & Fade-out
- Automatic iris with manual override
- Variable high-speed electronic shutter
- Audio level control with LCD level meter
- Audio/Video insert editing and dubbing capabilities
- Audio out select switch (Hi-Fi/Normal/Mix)
- Versatile editing facilities: S-Video Out terminal/Adaptor terminal/Synchro Edit/5-pin Edit terminal/Edit switch/ Character Generator direct connection capability
- Includes Panasonic metal system case

WV-F250B
3-CCD Color Video Camera

The WV-F250B provides the flexibility needed for truly professional performance. Its high density 1/2" CCDs deliver outstanding horizontal resolution of 750 lines. It has a high S/N ratio of 60dB and consistently outputs high image quality with low smear. Has component output plus Y/C output for compatibility with VHS, S-VHS, MII, Betacam and virtually any type of VCR - for truly outstanding professional performance in ENG/EFP, studio and dockable (camcorder) type applications. The WV-F250B combines advanced technology with ergonomic design and operating convenience to fulfill the demands of the ever expanding professional video world.

Features:

- 3 FIT (Frame Interlined Transfer) CCD chips with 380,000 pixels each deliver 750 lines of horizontal resolution.
- High signal-to-noise ratio of 60dB enable consistent recording with low vertical smear level and outstanding sharpness of details.
- Advanced electronic shutter with variable speeds from 1/60 - 1/2000 of a second.
- Rugged aluminum die-cast body is resistant to shock and vibrations, makes it ideal for outdoors, including ENG/EFP.
- High resolution 1.5" viewfinder with character display and zebra level plus a host of other information.
- Built-in SMPTE color bar generator for accurate colors of your monitor. Date and time are also recorded on the color bars.
- Docks to S-VHS, MII, and Betacam, can also be connected to VHS, Beta and 3/4" models.

Panasonic
Broadcast & Television Systems

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

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

Features:

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

AG-1970
S-VHS Hi-Fi Editing VCR

- Playback and record in S-VHS, which delivers 400 lines of horizontal resolution and exceptionally detailed images.
- Uses Amorphous video heads which are clearly superior to that of conventional ferrite heads because the magnetizing strength of the amorphous head is much greater. The Amorphous video heads 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.
- Built-into the circuitry is a digital filter which helps the AG-1970 achieve even more accurate Y/C separation. Also a noise filter is included in the circuitry.
- Features Hi-Fi stereo sound with a frequency response from 20Hz to 20,000 Hz and a 90 dB dynamic range. Besides nearing CD quality audio the AG-1970 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).
- Unlike the AG-1960 the AG-1970 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.

7000 SERIES EDIT SYSTEM
An S-VHS Editing System Truly Designed To Meet The Needs Of Professionals

AG-7650
S-VHS SOURCE PLAYER

AG-A770
MULTI-EVENT EDIT CONTROLLER

AG-7750
S-VHS EDITING VCR

The Panasonic AG-7650 S-VHS source player and AG-7750 Editing VCR share many professional features to deliver outstandin S-VHS picture quality, editing accuracy, versatility and reliability.

AG-7650 & 7750 Features:

- Built-in Digital TBC/DNR (Time Base Corrector/Digital Noise Reduction) eliminates even small amounts of jitter, skew and color blurring. The precise time base correction is invaluable for A/B roll editing and helps maintain high picture quality through multiple tape generations.
- High-precision aluminum die-cast chassis and extra large impedance roller is used to assure exceptionally stable transport with very low jitter.
- Advanced AI capstan servo control featuring a capstan spindle three times larger than conventional. This provides for high speed search at 32x normal speed.
- Both have RS-422A 9-pin serial interface - the standard control protocol for professional broadcast components. This allows compatibility between other serial control systems. They also have 34-pin parallel connectors to maintain compatibility with older Panasonic components.
- Equipped with two Hi-Fi stereo audio channels plus two linear audio channels with Dolby NR.
- Both use 3-pin XLR audio jacks for increased reliability. The AG-7750 features a 3-position input level selector to assure high-quality sound during recording.
- Professional 7-pin dub input and outputs keep the quality of your video during editing and through multiple generations.
- Optional AG-F700 SMPTE time code reader/generator card lets you perform LTC/VITC (Longitudinal/Vertical Interval) recording and playback for highest precision editing.

AG-A770 Features:

- Advanced design for easy control and smooth editing results, separate jog/shuttle dials and easy to read adjustable display.
- Multi-event editing - stores up to 128 single-cut events in memory for automatic editing.
- Built-in RS-422A 9-pin serial interface board lets it control almost any professional edit system.
- Split audio editing capability. Lets you enter audio and video edit points separately.
- Built-in GPI trigger allows centralized control of total-system operation.

NRG
LIGHT AND POWER SOLUTIONS FOR THE SERIOUS VIDEOGRAPHER

CAMPAK

NRG's powerful solution to short camcorder run times: 3-5 hours of camcorder power in a palm-sized pack

- 12 Volt DC output jack
- Ultra-light weight (38 oz.) and compact palm size
- Spring steel clip securely fastens Campak on waistband, pocket, belt or optional Campak belt
- Cigarette lighter style output adapts to any camcorder
- Highest-density Nicad cells provide 4 amps of power
- 2500 charge/discharge cycles for years of reliable service
- Includes overnight charger and soft case

CAMPAK PROFESSIONAL

Same features as CAMPAK Plus:

- 13.2V
- 4-Pin XLR output connector
- Available in 12V or 13.2V version offers 20% longer runtimes when used with industrial equipment that shuts off at a higher voltage level, by allowing the pack to fully discharge.

PERPETUAL POWER BELT SERIES

NRG power belts are the ultimate power solution. Made in the U.S.A. they provide the power to run lights, camcorders and decks free from the fear of shutdown. Advanced ultra-high density Nicad power cells provide the lightest weight and longest service life of any power products made. Advanced features such as dual power outputs, power indicator high-speed charger, solar panels and high-current cables combine to form the world's most advanced power system.

880 Power-Pro +

- High capacity 10-AMP removable Nicad power pack (Also capable of fast charge)
- 2500-cycle cell life provides low cost per cycle
- 5-step multi-color power indicator display and electronic circuit protection for connected equipment.
- Dual input system allows pack interchange without shutdown
- Weighs just 4.9 lbs. for all-day comfort
- Charge in under 2 hours with the optional 650 charger
- Available dual output configurations include cigarette lighter, 4-pin XLR in any configuration
- Includes belt base, 10-amp Power Pack & 600 series charger

970 POWER MAX

Same features as Power-Pro + Plus:

- Designed for high-current applications requiring long run times
- Highest capacity 14-AMP 12 Volt or 13.2 Volt power packs. 13.2 Volt offers 20% longer runtimes when used with equipment that shuts off at a higher voltage level/eg. industrial decks and dockable units).
- Rugged high-grade, heavy duty black leather belt base
- Power-Max weighs a comfortable 7.5 lbs.
- Multi-color 5-step power indicator display
- Dual inputs for pack changes without equipment shutdown
- Dual outputs include cigarette lighter and 4-pin XLR in any combination.

NRG ON-CAMERA LIGHTING

Mite Lite

- Pocket-sized lighting wonder. 35 watt light designed to achieve maximum light coverage in an ultra-compact package.
- 35-watt quartz -halogen bulb with dichroic light multiplier reflector (Also optional 20 & 30 watt bulbs available)
- Dispersion grid for broad light coverage
- Ultra compact lighthead
- Virtually indestructible, light weight milled aluminum construction
- Provides light coverage comparable to much higher wattage bulbs

505 Versalite Pro

- Front housing snaps open for instant bulb exchange
- All-metal construction for years of use and abuse
- Dichroic-coated bulbs assure accurate color
- Unique dispersion grid eliminates hot spots and reduces subject complaints.
- AC/DC capability in unmatched bulb wattage ranges, 20-200 watt DC and 150-300 AC, and patterns (flood, med. flood, spot).

NEW! Lite-Rite

- Lets you instantly adjust the light intensity to any one of 80 levels from 100 watts down, providing instantly the right light requirements for any shooting situation
- Can also raise power level to give subjects a chance to accustom themselves to the increased light
- Colored graphic display indicates remaining light run time
- Eliminates changing hot bulbs in the middle of an event
- Dramatically extends run-time, using right amount of battery power

Power Station Series

Designed to replace expensive original-manufacture AC power supplies, the affordable new NRG Power Stations deliver precisely-regulated 12-volt DC power from AC sources worldwide. High-current capability allows for powering not only large camcorders, dockables, decks, and cameras, but lights, monitors, and other high draw 12-volt equipment as well.

- Worldwide voltage selection
- Detachable worldwide cordset
- 4-pin or cigarette lighter outputs
- High current output
- Rugged steel case
- Convenient carrying handle

12560-1 Single output, cigarette lighter	CALL
12560-4 Single output, 4-pin XLR	CALL
129100-11 Dual cigarette lighter outputs	CALL
129100-14 Dual outputs, 1 cigarette lighter, one 4-pin XLR	CALL
129100-44 Dual 4-Pin XLR Outputs	CALL

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JVC

GY-X2

3-CCD S-VHS CAMCORDER

- Three 1/2" CCD image sensor delivers 650 lines of horizontal resolution
- New micro-lens technology provides exceptional sensitivity of F7.0 at 2000 lux and new LOLUX mode lets you shoot with almost no light! Now you can shoot superb footage with excellent color balanced at a mere 3 lux illumination
- Variable Scan View allows flicker-free shooting of a computer monitor.
- Quick Record Mode - when turned on the camera is set to the auto iris even if lens is set at manual. Also activated is (ALC) Automatic Level Control and EEI Extended Electronic Iris which provides both variable gain and variable shutter. Now you can shoot continuously from dark room to bright outdoors without having to adjust gain, iris or ND filter.
- Full Time Auto White circuit lets you move from incandescent to fluorescent to outdoor lighting without changing white balance or the filter wheel.
- Genlock input allow synchronization with other cameras.
- Dual output system allows camera output to be connected directly to an external recorder

PROFESSIONAL SONY S-VHS SYSTEM

SVP-9000
S-VHS Hi-Fi Player

and

SVO-9600
S-VHS Hi-Fi Player/Recorder

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

They both feature:

- Using the S-VHS format, they deliver superb picture playback and recording. With newly developed Digital Y/C separator maintained picture quality even in composite.
- Newly developed video cross talk canceller eliminates color blur providing more accurate color and sharper images.
- Four channel audio system – Two Hi-fi channels with a dynamic range of 90dB & two linear channels with Dolby Noise Reduction
- Two direct-drive reel motors provide rapid response and smooth operations. Mode transitions such as STOP to REC, FAST FWD to PLAY, STOP to REWIND are virtually instantaneous.
- Search dial allows picture search from -10 to +10 times normal speed.
- Automatic repeat an automatic rewind can be accomplished with Programmed operation.
- Soft pause for gentle tape operation.
- There is a TIMER switch for either REC or PLAY (SVBP-9000 PLAY only) when selected automatically executes the selected mode when the power is turned on. This function is very useful for unattended operation such as satellite recording.
- Auto head cleaner – each time a cassette is loaded or ejected, a cleaning roller automatically passes over the video/FM audio heads removing tape residue and providing preventive care of the tape heads.
- For secure connections, they employ a locking connector for S-Video input and output terminals.
- Both feature SYNC IN for synchronizing with other video sources
- The SVO-9600 features sensor recording. When video signals are input to the SVP-9600, it automatically starts recording.
- Both are 19" EIA rack mountable plus both have adjustable front controls.

Optional Interfaces:

- **SVBK-140** 33-pin interface board allows remote control of basic VTR functions.
- **SVBK-120** RS-232 interface board allows for machine control from a computer.
- **SVBK-140** RS-422 interface board allows either machine to be configured into any professional system.
- **SVBK-150** Digital Noise Reducer board reduces jitter, noise and Y/C delay and provides clear, crisp still frames.
- **SVBK-160** SMPTE Time Code interface board (can only be used with SVBK-140 board).

CALL FOR PRICES

SONY

BUSINESS AND PROFESSIONAL GROUP

EVW-300
3-CCD Hi-8 PROFESSIONAL CAMCORDER

Sony's video Hi-8 camcorders have been well acclaimed for their ability to capture high quality images in field applications. Their compactness, lightweight, high mobility and long recording time are definite advantages of shooting in the video Hi-8 format. Now Sony introduces the latest addition to its Hi-8 camcorder series the EVW-300. The EVW-300 is a complete one piece camcorder which includes a variety of innovative and advanced operational features. So, whether your shoots require basic recording capabilities or premier performance, the EVW-300 offers a wide range of features and remarkable recording quality to best suit your needs.

Features:

- Equipped with three high density 1/2" IT Hyper HAD image sensors. Combining this advanced CCD technology with advanced optical technology an excellent sensitivity of F8.0 at 2,000 lux, high S/N of 60 dB, and over 700 lines of horizontal resolution is achieved.
- Provides high quality PCM digital stereo and single channel AFM Hi-Fi recording. Has XLR balanced audio connectors with LINE/MIC switching
- Quick start 1.5" viewfinder with 650 lines of resolution plus Zebra pattern video level indicator and color bar generator
- 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) – with conventional professional video cameras white balance has to be adjusted before shooting every time the light source is changed. With ATW, white balance is automatically corrected by control of the microprocessor in real time when ATW is turned on so 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 Function.
  AGC (Automatic (Gain Control) – in addition to manual Gain up the EVW-300 has AGC which 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.
- In addition to the automatic adjustments the EVW-300 features auto white balance, auto black balance and black set-up level. With this and three-position color temp conversion filters you can shoot in almost any lighting conditions.
- Selectable Gain-up from 1 dB to 18 dB in 1 dB steps for Mid & 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 battery) ergonomic design provides well balanced and extremely comfortable operation.

EVO-9700
DESK-TOP EDITING MACHINE

Editing recorded video segments together into a well-produced professional program has long been considered a creative option only for those with large budgets and extensive technical expertise. Now Sony breaks with this misconception by introducing a revolutionary editing machine, the EVO-9700. This innovative machine is designed to be simple to use. And it is packed with sophisticated capabilities to bring the creativity of the professional editing suite right to your office desk. The EVO-9700 is comprised of both a video Hi8 player and a recorder housed together in a one-piece compact body. Its desk-top design and ergonomic configuration offer advantage in space and operation.

Although very easy to operate, a range of versatile editing features such as video/PCM audio insertion, program edit, preview, review, slow motion/freeze edit, and title recording capabilities are integrated into the EVO-9700.

Features:

- Compact dual deck design – total weight 26 lbs.
- Built-in 8mm Time Code Reader/Generator for absolute frame accuracy
- Two PCM + monaural AFM audio tracks
- Does all edit modes – Assemble, Video Insert, and Audio Dub all automatically.
- Up to 99 scenes can be stored in memory including 25 pages of title information
- Preview/Review Function – confirm the appearance of a program before and after an edit. You can monitor the results of a simulated or actual edit
- Built-in Digital Chrominance Noise Reducer – improves chrominance S/N ratio for superior dubbing quality
- Tape Jitter/Skew Corrector – field memory used in the noise reducing process also at same time eliminates jitter to give clear, stable pictures (Using EVO-9700 with Video Toaster requires no TBC.)
- Slow Motion/Freeze Edit – noiseless, 1/5 times normal speed slow motion pictures and a clear freeze frame can be played back during editing
- JOG/SHUTTLE Dial – frame accurate picture search from -17 to +19 times normal speed
- One monitor editing capability – press the P in P button and pictures from both the player & recorder can be viewed simultaneously on a single monitor – no need to use two monitors
- Separate PCM and AFM audio level volume controls
- S-video in/out connectors
- Supplied Title Keyboard – titles, captions and any other info can be created and recorded onto moving pictures, freeze picture or background color (7 different colors, four character sizes are available)
- Includes RM-E9700 Edit Controller – Quick Edit, Program Edit, Video & Audio insert are controlled from the supplied RM-E9700 controller.

Canon

L1 Hi8

VL Mount System

The Right Lens for Every Scene

Now you can have the kind of creative versatility previously only enjoyed by the professional filmmaker. Interchangeable lenses let you pick the perfect lens for any situation – from wide angle to telephoto. With optional EOS adapter VL use Canon EF 35mm lenses (over 30 different lenses available) on the L1 while retaining autofocus and autoexposure Plus when used with the L1 the local length of EF lenses is multiplied by 5.4 times, so when a 300mm telephoto lens is used, it becomes on the L1 an incredible 1600mm super telephoto. A further advantage is that only the optically perfect central portion of the lens is used for absolutely stunning image quality.

Features:

- Hi-8 Hi-fi stereo, Piezo Auto Focus, Digital effects, audio/video fade in/fade out, hi-speed shutter self-timer, interval timer, titling and date functions.
- Includes 8-120mm (15-1) zoom lens with 8-blade iris for unprecedented 1-stop control. (Delivers beautiful soft focus effects when desired.)
- Optional 2x converter retains optimum image quality while conventional teleconverters cause optical glitches at certain points in the zoom range.

YOUR SOURCE FOR BETACAM

•Dockable Recorders •Editing Players
• Dynamic Tracking Players
• Editing Players/Recorders

TSC-200
3-CCD Hi-8 Camcorder

- Three 1/2" CCD chips mounted with spatial offset technology delivers superb resolution of 700 horizontal lines
- Low noise design provides extreme sensitivity of F8.0 at 2000 lux. Minimum illumination is 7.5 lux with excellent color reproduction
- New LNA (low noise amplifier) delivers a S/N (signal-to-noise) ratio of 62dB – the highest achieved for this type of camera
- 26-pin connector outputs Y/C or component video signal allowing hook up to a portable S-VHS, MII or Betacam recorder and simultaneously record with Hi-8.
- Quick-start 1.5" viewfinder needs no warm up time so you never miss a shot. Zebra pattern in the viewfinder alerts operator to excessive video levels.
- Genlock capability allows synchronization with other cameras. Also full calibration functions are built-in as well as color bar generator.
- Built-in 8mm time code generator records an absolute address to every frame. Provides precision editing of 0frame accuracy
- Has AFM audio channel separation characteristics for professional quality post-production.
- High-performance back electret condenser mic records to all three audio tracks. Also has low cut filter that eliminates wind noise.
- Sports very low power consumption. The TSC-200 draws only 16 watts per hour allowing 100 minutes of recording time with a single NP-1B battery.

TSC-200P Package includes:
TSC-200, Canon 13:1, servo zoom lens, tripod adaptor and custom carrying case ..... CALL

TSC-200/PC17 Package includes:
TSC-200, Canon 17:1 servo zoom lens, tripod adaptor and custom carrying case ..... CALL

COLOR PRESENTATION MONITOR

SONY

PVM-1340 (13")

- Dynamic Picture circuitry adjusts gain to achieve better contrast in bright highlights and dark shadows.
- Auto white balance uses beam feedback circuit to maintain stable and accurate white balance.
- Line A or B, VTR (8-pin) analog RGB and Y/C (S-Video) inputs.
- Better than 450 lines horizontal resolution
- Switchable color temperature - 9500°K for broadcast standard, 9300°K for the most pleasing picture
- Blue only mode switch for ultra-precise color and hue adjustment
- Built-in speaker for audio monitoring (4 audio inputs)
- Standard EIA 19" rack mount capability.

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B&H PHOTO-VIDEO

TOASTER PERIPHERALS

NEW! I.DEN **TBCard II**

- Broadcast quality infinite window time base correction and synchronization from any video source
- TBCard plugs directly into Amiga (perfect for the Toaster) or IBM-PC
- Offers full 5.5 MHz bandwidth (440 lines of resolution) to ensure highest quality professional results
- Includes TR-7 remote control unit for full Proc Amp control, field or frame freeze, timing adjustments
- Now features S-video in and out **649.00**

I.DEN **IVT-7**

DIGITAL TIME BASE CORRECTOR/ FRAME SYNCHRONIZER

- Will time base correct & transcode inputs from Hi-8, S-VHS, VHS-DUB, 3/4", 3/4" VCR-DUB and composite video
- Ideal for use as a frame synchronizer, synchronizing outside satellite, microwave & camera feeds with studio signals
- 3-5 dB chrominance & luminance noise reduction
- Full Proc AMP controls, drop out compensator
- Built-in RS-170 sync generator with genlock input and black burst output
- Y/C delay adjustments, field and frame freeze
- Wide 5.5 MHz frequency response offers 450 lines of resolution. Full 8-bit professing and a 58 dB S/N ratio **1699.00**

The KitchenSync

Dual Channel TBC

- Two complete infinite window time base correctors on one IBM AT/Amiga compatible card
- Plugs into any IBM AT or any Amiga 2000 or 3000 PC slot
- Works with any video sources including consumer VCR's and camcorders
- 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
- Advanced sync output – useful with any VCR capable of taking an Advanced Sync in.
- Completely digital design – no Pot adjustments necessary. The Kitchen Sync is completely microprocessor controlled and easy to adjust **1299.00**

DIGITAL

PROCESSING SYSTEMS INC.

DPS VT-2500 Personal TBC III

The VT-2500 Personal TBC III is a third generation TBC card from DPS - the market leader in broadcast quality time base correction.

Features:

- Composite and S-video inputs. Interfaces virtually any VCR, laser disc or camcorder to production switchers and computer video systems like the video Toaster.
- Special effects including Rock Solid Freeze (field and frame mode), Variable Strobe, Forced Monochrome are standard.
- Can be installed in any Amiga 2000/3000/4000 series or in any IBM PC compatible. Also includes DPS Personal Series software. Includes Amiga and Windows versions.
- The TBC III is also compatible with the RC-2000 remote control. The RC-2000 allows you to mix and match TBC II, III cards, DPS-230 rack mount TBC, and the Personal V-SCOPE.
- Backed by two year warranty. **729.00**

DPS VM-2000

Personal V-Scope

The DPS Personal V-Scope is the world's first Waveform Monitor and VectorScope for desktop video. It is designed to give your system the power, look and flexibility of broadcast quality hardware, but at a software price.

Features:

The Personal V-Scope produces a digitally synthesized Waveform Monitor and VectorScope display which can be superimposed onto any video signal.

- A Plug-in card with control software it works in both Amiga and IBM PC compatibles.
- Any NTSC video signal can be input into the V-Scope which provides a buffered video output, a superimpose (software controlled) video output, and a full-time Waveform/Vector Video output.
- Backed by two year warranty. **749.00**

NEWTEK

VIDEO TOASTER SYSTEM 2.0

Production Switcher

The Video Toaster Switcher is a broadcast quality production switcher which lets you perform cuts, fades, dissolves, key and color effects between any of 7 sources including 4 video inputs, two true-color high resolution frame buffers and a background matte generator. A separate overlay channel gives you the ability to key images or live video over the switcher during transitions. The switcher's graphic design makes it simple to learn and use while providing access to all the Toaster's breakthrough capabilities.

Additional Features:

- 2 video outputs (Program and Preview)
- Preview output lets you compose the next camera shot or frame buffer prior to performing the transition
- Linear keyer
- External GPI trigger
- 256 level adjustable luminance key
- Automatic or manual (T-bar) control of transitions
- Soft edge wipes
- Animated wipe patterns such as page tearing, spray paint, windshield wiper, heart, clock, iris, spiral and many more
- Organic transitions such as clouds, spilling paint, pouring water, smoke, fire, shattering glass.

Luminance Keyer

The Video Toaster's integrated luminance key technology gives you the ability to superimpose a weatherman over a map, live video or still graphics. Luminance keying also works in conjunction with many Toaster Digital Effects to make text or logos fly in over another video source. Text created in ToasterCG uses built-in automatic keying to deliver titles crisply rendered over any video source, even with transparent drop shadows. Toaster Luminance Key does all this and more.

Frame Grabber/Frame Store

The Toaster can grab and save a full frame (in 16.8 million colors) and has sophisticated motion removal algorithms to provide a rock-solid freeze frame. These frames may then be loaded into "ToasterPaint" or "LightWave 3D" for further manipulation. Up to 1000 frames may be saved on each frame store device (depending on available storage space). Stored frames can be loaded and displayed in the frame buffers in as short as 1/5 of a second from RAM or 3 seconds from hard drive. These frames can also be used as inputs to the switcher for transitions and digital effects.

ChromaFX Color Processor

ChromaFX is a sophisticated real-time color processor that gives you complete control of all aspects of the brightness, contrast and color of your video. It can alter video with color negatives, day for night, sepia tone, monochrome, solarization, posterization, color vignettes, and other totally unique effects such as Nuke, Chrome, Gold, Zebra, and more. ChromaFX also gives you the power to create your own custom color effects from subtle lighting changes or tints to blazing psychedelic effects that will wake up your audience.

Digital Video Effects

The Toaster has the processing power to manipulate live broadcast video in real time, and perform hundreds of network-quality digital video effects as easily as clicking the mouse and sliding the T-Bar. Many Toaster Digital Effects are not possible on any other device including whips, zoom trails, and the "Transporter". Among the effects which are included with the Video Toaster are:

Page Peel	Tumble	Zoom	Cube Mapping
Fire	Smoke	Pour	Sphere Mapping
Push Off	Push On	Slats	Trajectories
Slide	Shatter	Puzzle	Analog Trails
Dissolve	Mirrors	Mosaic Tiles	Digital Trails

Character Generator

ToasterCG is the only desktop video system in the world that can create YIQ-encoded, 35ns (nanoseconds) high-resolution titles. ToasterCG makes adding text to your presentations simple. Among the many powerful tools included are:

- Over 40 standard anti-aliased fonts
- 16 million-color fonts including brass, chrome, and rainbow to create dazzling graphic displays.
- 24-bit smooth color gradations
- Variable outline & shadows
- Choice of drop or cast shadows
- Variable-speed crawling and scrolling of text

ToasterPaint

Everything you need to create or alter true-color images tailor-made for your presentations is included in an uncluttered friendly interface. ToasterPaint makes importing and modifying files from the CG and frame grabber easy. It also gives you the capability to merge images captured in the Toaster's high quality digital still store or retouch those images with incredible realism.

Dual Frame Buffers/Genlock

These are 24 bit (16.8 million colors) frame buffers with composite output that meets the most stringent requirements for broadcast video. Because there are two frame buffers, one can be loading while the other is shown on screen for seamless live presentations. Toaster effects can be done between live video and either buffer, as well as between the buffers themselves. You can also overlay graphics on incoming video or over either frame buffer.

Lightwave 3D

The Ultimate 3D Rendering and Animation System for Broadcast Graphics

LightWave 3D offers all the high-end features you need to produce true network-quality graphics. Model, render, and animate videos in full broadcast resolution and 16.8 million colors. Everything from flying logos, scientific visualization and the most sophisticated effects seen on broadcast television are now on your desktop.

NewTek Video Toaster Board only with 2.0 software ..... **CALL**

VIDEO TOASTER SYSTEM includes: Amiga 2000 computer with Workbench 2.0, 2-button mouse and 94 key keyboard. 7MB of RAM, 120 MB hard drive. Toaster Board and Toaster 2.0 software (all installed) ..... **CALL**

ACCELERATED VIDEO TOASTER SYSTEM includes: Amiga 2000 computer with Workbench 2.0, 2-button mouse and 94 key keyboard. GVP 68030 40 MHz accelerator board, 9 MB (32-bit wide) RAM, 120 MB hard drive. Toaster Board and Toaster 2.0 software (all installed) ..... **CALL**

ANIMATION DREAM PACKAGE includes: Amiga 2000 computer with Workbench 2.0, 2-button mouse and 94-key keyboard. GVP 68040 33MHz accelerator board, 13 Mb (32-bit RAM), 240 MB hard drive. Toaster board and Toaster 2.0 software (all installed) ..... **CALL**

Amiga 1084S RGB Monitor ..... **279.95** **TBC III** **729.00**

We can also custom configure your Toaster System anyway you want – no installation charges.

PROFESSIONAL VIDEO TAPE

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189 VHS Broadcast Video

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T30B	1.99	T30C	2.19	T30A	2.69
T60B	2.19	T60C	2.49	T60A	2.99
T120B	2.69	T120C	3.19	T120A	3.59

289 S-VHS Master Broadcast

ST-30A (In Box)	7.49	ST-60A (In Box)	7.99
SPECIAL! ST-120A (In Box)			7.69

187 KCA 3/4" U-matic Broadcast (In Box)

KCA05	6.49	KCA10	6.89	KCA15	7.29
KCA20	7.69	KCA30	8.49	KCA60	11.79

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

BSC10 (mini)	8.49	BCA10	8.54	BCA20	9.59
BCS20 (mini)	9.59	BCA30	10.20	BCA60	14.39

297 SPA 3/4" U-matic SP Master Broadcast (In Box)

SPS10 (mini)	10.21	SPA10	10.20
SPA20	10.85	SPS20 (mini)	10.85
SPA30	12.40	SPA60	16.20

208 Betacam Master Broadcast (In Box)

BC-5A (small)	4.89	BC-10A (small)	5.89		
BC-20A (small)	7.59	BC-30A (small)	9.69		
BC-30LA	12.69	BC-60LA	23.49	BC-90LA	30.99

398 Betacam SP Master Broadcast (In Box)

BC-5A (small)	15.99	BC-10A (small)	18.49
BC-20A (small)	20.49	BC-30A (small)	22.39
BC-5LA	15.99	BC-10LA	18.49
BC-20LA	20.49	BC-30LA	22.39
BC-60LA	29.95	BC-90LA	46.95

SONY

Hi-8 Professional Metal Video Cassettes

P6-30 HMPX	5.99	P6-30 HMEX	8.49
P6-60 HMPX	8.59	P6-60 HMEX	11.99
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PR Series Professional Grade VHS

T-30PR	2.49	T-60PR	2.79	T-120PR	3.29

PM Series Premier Grade Professional VHS

T-30PM	3.49	T-60PM	4.09	T-120PM	4.99

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

T-30BA	3.79	T-60BA	4.29	T-120BA	5.29

MQ Master Quality S-VHS (In Box)

MQST-60	8.19	MQST-120	8.59

BRS 3/4" U-matic Broadcast Standard (In Box)

KCS-10 BRS (mini)	7.99	KCS-20 BRS (mini)	8.69		
KCA-10 BRS	7.89	KCA-20 BRS	8.39		
KCA-30 BRS	9.29	KCA-60 BRS	12.99		

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

KCS-10 XBR (mini)	8.49	KCS-20 XBR (mini)	9.79		
KCA-10 XBR	8.99	KCA-20 XBR	10.29		
KCA-30 XBR	11.49	KCA-60 XBR	14.99		

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

KSP-S10 (mini)	9.19	KSP-S20 (mini)	10.69		
KSP-10	9.69	KSP-20	10.99		
KSP-30	12.49	KSP-60	16.39		

BCT G Betacam Broadcast Standard (In Box)

BCT-5G (small)	4.99	BCT-10G (small)	5.89		
BCT-20G (small)	7.39	BCT-30G (small)	9.39		
BCT-5GL	9.29	BCT-10GL	10.39		
BCT-20GL	11.59	BCT-30GL	12.89		
BCT-60GL	23.99	BCT-90GL	30.90		

BCT Metal Betacam SP Broadcast Master (Box)

BCT-5M (small)	16.99	BCT-10M (small)	19.29		
BCT-20M (small)	21.29	BCT-30M (small)	23.29		
BCT-5ML	16.99	BCT-10ML	19.29		
BCT-20ML	21.39	BCT-30ML	23.49		
BCT-60ML	31.99	BCT-90ML	49.95		

maxell

BQ Certified 8mm High-Grade

P6-60 HG BQ	4.99	P6-120 HG BQ	6.49

BQ Certified Hi-8 Metal Cassettes

P6-60 HM BQ	6.49	P6-120 HM BQ	8.49

P/I PLUS Expitaxial VHS

T-30 Plus	2.29	T-60 Plus	2.59
T-90 Plus	2.69	T-120 Plus	2.79

HGX-PLUS Expitaxial VHS (Box)

HGXT-60 Plus	3.49	HGXT-120 Plus	3.79

BQ Broadcast Quality Expitaxial VHS (Box)

T-30 BQ	5.49	T-60 BQ	5.99
T-120 BQ			6.39

BQ Certified Professional S-VHS (In Box)

ST-31 BQ	6.49	ST-62 BQ	6.99
ST-126 BQ	7.69	ST-182 BQ	14.99

KCA 3/4" High Grade w/Album & Sleeve

KCS-10 HG (mini)	6.99	KCS-20 HG (mini)	7.69
KCA-5 HG	7.29	KCA-10 HG	8.29
KCA-20 HG	8.99	KCA-30 HG	9.49

KCA 3/4" Broadcast w/Album & Sleeve

KCS-10 BQ (mini)	7.49	KCS-20 BQ (mini)	8.49
KCA-5 BQ	7.69	KCA-10 BQ	8.29
KCA-20 BQ	8.99	KCA-30 BQ	9.99

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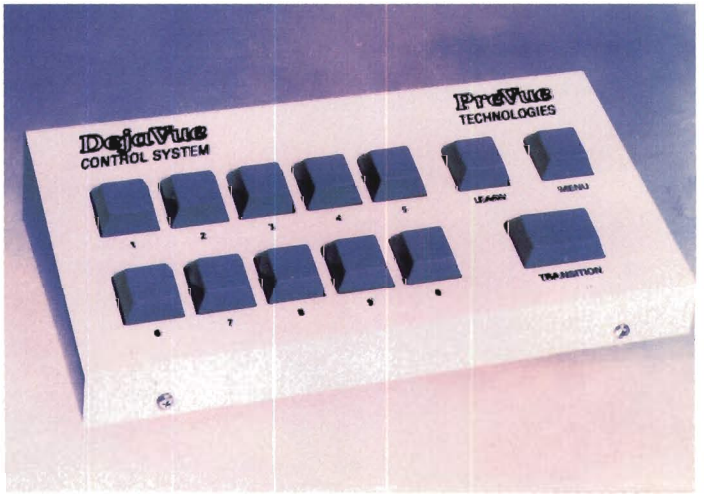
Deja Vue

The Video Toaster Memory Control System

By Tony Gomez

Has this situation ever happened to you while working with the Video Toaster Switcher? You're under a heavy deadline to produce a series of effects with transitions, framestores and keyed graphics. Time only allows you a few seconds to set up the Switcher interface before each edit or live switch. The complexity of your transition effects or the tension in your post-production environment makes it difficult for you to have each new Switcher interface configuration set up and ready to use in an accurate and timely manner. Each new edit requires a different combination of the Program, Preview, Overlay buss, Framestore, Key level, and Character Generator page settings. Wouldn't it be nice to have a memory device that remembers the state of the Video Toaster's Switcher interface with just the press of a button? Or how about memorizing a sequence of Switcher interface conditions? DejaVue, the Video Toaster memory control system, may be just what you're looking for.



DejaVue is produced by PreVue Technologies (formerly Cardinal Video Products), makers of the Bread Board Video Toaster timing interface. DejaVue is designed to eliminate the time-consuming Toaster keyboard/mouse command requirements associated with recreating a previously-used effect.

After a Toaster effect has been produced, DejaVue captures the relevant Toaster control data through the Amiga hard drive. DejaVue's software tells the Toaster to adjust all settings, selections, and values of the stored data, making effect playback quick and easy.

"Using DejaVue in online situations...can be a real lifesaver."

The DejaVue system consists of a small control panel and software. The durable metal control panel (8"x 4"x 1.5") connects to your Amiga's second mouse port with an attached nine-pin cable. While the Toaster can use this port for GPI input and output, any cables can be connected to the DejaVue control panel's mouse port "loop through" connector and all signals to and from the Toaster are replicated.

The DejaVue control panel also contains 13 pushbuttons. The 10-button memory registers are labeled 0 through 9. The Learn, Menu, and Transition function pushbuttons are mode control buttons.

Pressing the Menu button brings up a preferences selection panel for memory options. The Learn button stores an operation into one of DejaVue's registers, while the Transition button triggers an automatic transition (like a GPI trigger or space bar command) even if the previous recall left the T-Bar in mid-position.

Installation

The DejaVue control software must be transferred to the same directory that contains your Video Toaster program. Simply click and drag over the DejaVue panel icon and the DV drawer into your Video Toaster's parent directory. DejaVue requires the use of AmigaDOS 2.0 or later, as well as Video Toaster 2.0 (DejaVue does not work with earlier versions of either product). It also requires the ARexx message handler RexxMast, which is usually loaded automatically by the AmigaDOS 2.x system upon startup. If you are using AmigaDOS 2.0 or higher, and you still don't see any ARexx messages upon startup, transfer the RexxMast icon from your 2.x system installation disks into the Workbench Startup drawer. DejaVue also uses the program RX which should be located in the REXXC subdirectory. If DejaVue cannot find RX, an error message appears.

Starting DejaVue

To use DejaVue, you must be in Workbench. If you're running the Toaster, go back to Workbench and launch the program. From the Workbench screen, select the DejaVue icon, push the Menu button and you should see the preferences selection panel. Three memory options are available: Program and Preview bus Recall, Framestore Recall, and Character Generator Recall.

DejaVue assumes that memory control of Program and Preview bus selections is desired, so this option is preset. It may be de-selected however, allowing the option to manually control Program/Preview with the Toaster Switcher interface. The Framestore Recall menu option enables loading specific Framestores into their required digital video buffers, DV1 or DV2. Unfortunately, loading Framestores does take several seconds to execute. Similarly, the Character Generator (CG) Recall option provides the ability to load specific CG pages. Note however, if CG pages aren't buffered, each must be rendered before the Toaster and DejaVue can use them—which costs time. However CG pages can be pre-rendered for faster access time—about the same amount of time as Framestore pages. Once you are

satisfied with your DejaVue preferences selections, select Go To Switcher (upper right button on the DejaVue interface screen) to return to the Toaster's Switcher interface.

Using DejaVue

The memory storage process is simple when DejaVue is properly connected to the second mouse port and its control software is operating. First, set up the Toaster's Switcher interface for each new transition or effect. Then press Learn on DejaVue's control panel while pressing one of the 10 memory register buttons. This process stores the following information into the register: Program bus input, Preview bus input, Overlay bus input, T-Bar position, Key mode (white/black/off), Key clip level, Wipe Transition number, Framestore number, CG page number, and Transition speed.

Unfortunately, Background, Border Color, or any positionable wipes' X-Y position information are not supported by DejaVue (a limitation of the ARexx port). So for these positionable wipes, the size is recalled, but not the position.

DejaVue stores 10 Switcher memory settings or registers per page. To save each page, press the Menu button from the control panel. This brings up the interface screen. From the bottom of the interface screen, select Save Or Load DejaVue Page. This action brings up a sub-menu with a Page requester, and Load, Save, Delete, Log, and Cancel options. Enter and save the name of the page in the Page requester. You may also enter an optional log of your own descriptive text for the page. Similarly, to load a previously-saved DejaVue page, select Load where you select your desired page from the register directory.

Using Prestored CG Pages

One of the most effective DejaVue applications is the storage and use of CG pages for programs that require rapidly changing text information. If you study television news shows, you may note how quickly character-generated text is keyed over and changed on-screen. This is generally done with professional broadcast CGs (with large memory storage features and equally large prices). Fortunately, with DejaVue you can achieve a similar degree of convenience, with almost the same speed as the professional broadcast systems and significantly less expense.

To create a rapid series of keyed DejaVue CG pages, you must first build a ToasterCG page sequence. As each keyed CG page is created and verified for correct keying over the proper video background, it is stored into DejaVue's memory control system.

Let's say you have a sequence of three keyed pages available in a CG book. Set up the Switcher for the proper Program and Preview bus conditions, then call up the first CG page on the Switcher interface. Render the page. Return to the Switcher interface where you should see the CG slice button active with the name of your selected CG page in the CG requester. On DejaVue's control panel, simultaneously select the Learn and 1 buttons to store the current state of the Switcher interface into memory register 1. You will see some activity on-screen as the ARexx scripts are written to the hard drive. Now select your next Switcher condition, along with your next keyed CG page. Render the CG page to verify its location, return to the Switcher interface, and select Learn and the 2 button to store the next sequential state of the Switcher into DejaVue's memory. Repeat this scenario for the next Switcher condition and third CG page to be keyed.

Now that we have three sequential Switcher conditions programmed into DejaVue's memory, it's a good idea to save them as a DejaVue "page." Go to DejaVue's control panel, select Menu, which brings up the preferences control screen. Verify that the Character Generator Page Recall option is active. (The two other options may be active as well). Select the Save Or Load DejaVue Page with the mouse, which brings up a sub-menu of previously-saved pages. Give your new page a name like *DVPage 1* in the page requester, and select the Save button. This page information is written to the hard disk for safekeeping. Select the Load button, and choose *DVPage 1*, which recalls your previously-saved information. Now select Go To Switcher to return to the Switcher in preparation to use the information stored in DejaVue.

Prepare the required video sources for your edit session. From the DejaVue control panel, select the 1 button for the first memory condition. The hard drive loads the ARexx scripts to change the status of the Switcher in preparation for your use. During this time, any CG pages or Framestores required for the first transition are loaded and rendered—a process which may take several seconds. When all loading activity stops, the Switcher interface screen stabilizes. Now select Transition on the DejaVue control panel. Your first programmed transition occurs. Each additional transition is set up in the same way.

Recommendations

The Operator's Manual provided with the evaluation unit was rather skimpy. Hopefully, PreVue Technologies will expand on their manual and give several examples and tutorials to explain the use of the memory control system more fully.

Using DejaVue in online situations (when time is scarce) to pre-select complex Switcher conditions can be a real lifesaver. For graphic artists, precisely-positioned CG key pages or rendered Framestores can be prestored for your online session.

If you need more than 10 prestored conditions, use different pages. Each page can store 10 memory conditions—you can have an infinite number of conditions because you're only limited by hard disk storage capacity, as each DejaVue page only takes up about 2K of disk space.

At press time, DejaVue Version 2 should be available. List price for both versions has been lowered to $398, with upgrades prices planned for a minimal $10 to $20.

Derived from the word "deja vu", which means to have experienced something before, DejaVue can truly remember Video Toaster Switcher situations to help you perform a series of complex transitions with relative ease. It deserves your serious consideration.

VTU

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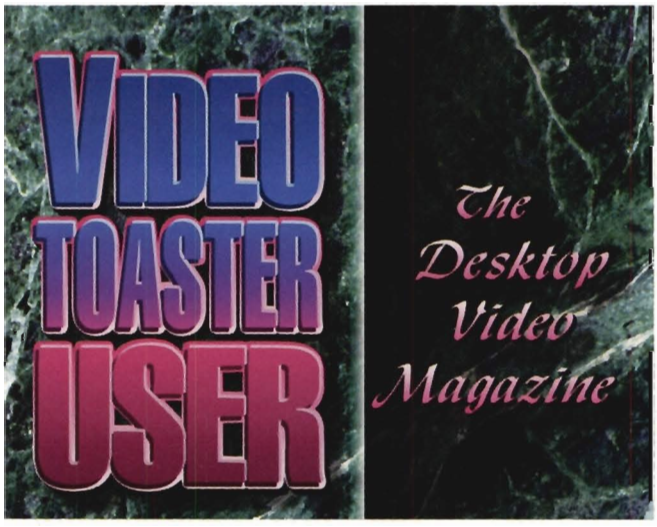
Montage

Video Titling and Effects Software

By Frank Kelly



For those of us who use the Toaster for title graphics, Innovision Technology's Montage is creating quite a stir. It's the first third-party product to effectively upgrade some of Toaster 2.0's graphic features.

[Editor's note: Innovision Technology's trademarked spelling is MONTAGE.*]*

Montage is what I would call a hybrid of a character generator and a graphics/composition package. One of the most notable features is its proprietary scalable font technology, which breaks the 80 scanline font-size barrier of Toaster 2.0's image compositing. Montage is enhanced by variable digital translucency, which is especially useful for elements that are to be keyed over another picture or incoming video signal. Montage also claims it's proprietary D-2 Toaster drivers can create an effective one nanosecond resolution of any graphic image created within its software. The latest release of the Toaster's 3.0/4000 software also utilizes font scaling and shares some of the text-style attributes offered by Montage. (Unfortunately, because publication deadlines preceded the arrival of my Toaster 4000, I cannot give a direct comparison of Montage versus the latest Toaster CG software; however, I can give you my first impressions and describe its features.)

How Montage Integrates With The Toaster

Montage requires Toaster 2.0 with one RGB and two composite monitors, at least 9 MB of total system memory, and 6 MB of available hard disk space. A three-monitor setup is needed to accommodate Montage's 12-bit RGB preview display of 24-bit color selections for text and background colors. Those operating under Workbench 1.3 can use Montage, but version 2.0 or higher is strongly recommended. An accelerator board or 030-based platform is also advised. The system I used for this review has Workbench 1.3 and 8 MB of 32-bit nibble memory installed on a GVP 030. Although I experienced no problems directly attributable to the Workbench 1.3 environment, I could easily see why attempting to use this package without an accelerator would be frustrating, as it draws heavily on processor power.

The installation program allows you to choose whether or not you wish Montage to launch automatically with the Switcher at startup, or from a Workbench icon. Once installed and the Switcher is launched, a small crouton appears beside the T-Bar gadget on the Switcher screen. Clicking the crouton loads the opening Montage menu, which allows access to the Font, Edit, Layout, Background, Transition, and File menus. In many respects, Montage behaves just as if it were another slice in the Toaster's arsenal. Once activated, you may re-enter the Switcher environment by pressing the escape key. During your Switcher visit, Montage essentially goes to sleep, emptying itself from the available memory, but retaining all settings for selected fonts, backgrounds, and sequences in a file which is referenced and reloaded when you return to the Montage environment.

Let's Talk Fonts

Montage can use your existing ToasterFonts, KaraFonts, ChromaFonts and standard Amiga fonts; however, font scaling is only supported using Innovision's proprietary fonts, eight of which are supplied, with 10 additional fonts offered in an optional font package. Those familiar with Broadcast Titler II, Innovision's other popular title package, will recognize Montage's proprietary font styles, which are both attractive and useful.

Two special features of the Montage fonts are Smallcaps and Smartquotes. Smallcaps allows the use of all capital letters with two available sizes per font. Smartquotes provides accent and quotation marks which have opposing orientation, so sentence quotations, measurements and contractions have a more natural appearance. Innovision also has an optional PostScript font-conversion module that imports PostScript type 1 and 3 fonts, as well as all Compugraphic fonts into the Montage scalable format.

Font attributes such as face color, outline size and color, and the size and type of drop shadow are easily changed and modified. Variable transparency is selected by setting a visibility value from 0 to 100%. Drop shadows for key pages have an additional option for variable translucency.

To create gradient fills for face color and font outlines, select two colors from the font palette menu. Choices of gradient styles are selected from symbol icons which approximate the finished appearance of the gradient spread. To resize Montage fonts, select the text with a bounding box, then click-and-drag from a gadget which appears on its outline. Proportional as well as separate vertical and horizontal sizes can be changed by pulling the appropriate gadget until the desired size is displayed by the bounding box. Montage then computes the changes and displays the output on-screen. Multiple fonts and sizes can be used on each line. Font attributes can be cut and pasted between text blocks and stored with function keys for future use and as defaults.

Layout Functions

Text entry is made within a defined safe title area where a border is displayed to act as a guideline to prevent creating titles in areas outside the video overscan of

most television screens. Viewing the 12-bit RGB display allows accurate color selection and correct placement of graphics and text elements on a full-sized screen representation. Left, right, and center justification, as well as letter and line spacing can be preset, or applied after the fact. Keyboard shortcuts for line justification, cursor positioning, and text deletion are intuitive and easy to use. Font kerning is automatic with Montage fonts, or can be manually adjusted. Text position can be easily changed by using the bounding box method to select the text, and using the bottom line gadget to move the bounding box to a new position. Text lines can be aligned automatically and proportionally spaced with vertical page alignment.

All layout settings can be saved as a default by using a snapshot function from the file menu. Maneuvering between pages can be done with the page up/page down keys or via direct page number access with the Go-To function. Another quite useful feature is the Thumbnail display page, where you can view a miniature representation of sequential pages arranged in storyboard format. Clicking on any page with the mouse pointer brings the page into full view.

Backgrounds and Pictures

Montage provides the capability to generate its own graphic elements for backgrounds or to frame text and imported graphics. Beveled boxes and gradient ramps can be created in a snap. Although an experienced ToasterPaint user might be able to create nearly identical effects, Montage eliminates several steps in the process.

Graphic elements such as lit beveled frames can be resized and placed on the page with bounding boxes, and can be easily applied to imported 24-bit IFF brushes. Add a beveled lit frame along with a shadow attribute to your imported brush, and you have a network quality over-the-shoulder graphic. It's possible to create a gradient rectangle with variable horizontal translucency as a background for a title graphic on a digital key page ala *Entertainment Tonight*.

The ability to import and manipulate IFF brushes within a title package with this much power gives Toaster owners access to a whole new level of creativity. The manipulation of IFF brushes is limited to click and drag placement, rotation, and shadow attributes. You can Rotate brushes 90, 180, and 270 degrees. Another rotation function which creates a slanted mirror image is also very good at creating a reflected text style. Resizing IFF brushes is not supported, but full anti-aliasing is applied which can greatly enhance the appearance of a brush with jagged edges. Wallpaper and tile backgrounds are generated from your IFF brush, with vertical and horizontal spacing adjustable via menu selections. Both framestores and IFF24 graphics are supported for import as background graphics and can be composited with variable transparency. Although you may reposition a graphic while composing your background, once it is placed and you move on to add another graphic, the original image can no longer be repositioned. Any page created can be saved with or without rendered text as a framestore or IFF24 image file.

Montage Sequences

Montage gives you full access to any of the Switcher's DVE effects or wipes for creating sequenced pages. Applications such as cablecast information channels or multimedia presentations are easily accomplished by setting page types, switcher positions, effects, transition speeds, and hold times for each event. Looped sequences can be created, and can be played back in segments or in their entirety via keyboard input or GPI signals. Up to 999 events can be stored as a sequence file.

Montage's credit roll offers some unique features such as interactive, on-the-fly control of roll speed, nine default speed settings, and multiple colors available for use on text and graphic separators. ASCII text import and export is supported for credit rolls as well as other page styles, but the import function is of primary use to those working with credit rolls. ASCII export could be useful for pre-production and online live switching circumstances such as sporting events.

The Bottom Line

For those Toaster users who have the system horsepower and are not immediately planning to upgrade to Toaster 3.0/4000, Montage offers a tremendous value. If you plan to upgrade, Montage is completely compatible with Toaster 3.0 and 4000, and even though it shares some of the new CG capabilities, there are enough additional features to warrant a strong look. The variable alpha channel transparency alone could make it worth its purchase for certain broadcast applications. Montage delivers on its promise of providing an effective one nanosecond resolution by use of its proprietary alpha channel anti-aliasing, and reduces dot crawl and ringing with its selectable NTSC filter.

On the whole, there are obviously a lot of good things to say about what Montage can do, and only a few minor improvements I would suggest.

Free rotation and scaling of imported brushes, along with the ability to generate italic versions of those beautiful Montage fonts would be at the top of my list of desired features. Considering Innovision Technology's past track record for upgrading their title packages, there are sure to be more enhancements down the road in a future release.

Hands-On Experience

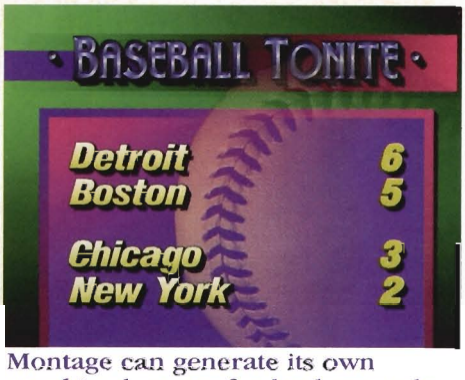
In my production facility, where we specialize in broadcast clients, the need to create large fonts and state-of-the-art variable transparency key graphics is tremendous. In the past, when I needed to create a font size larger than the Toaster could give me, I had to generate them on a laser printer, grab them into the Toaster with a camera, spend a lot of time in ToasterPaint, and then lose a lot of detail by the time they were supered with the luminance keyer. A client paying hourly fees for such service can get a bit upset when they see this low-tech method—what with current technology should be a just a point and click away.

After using Montage for a short time, it has become an invaluable production tool. I have tested it for review purposes and have previewed it for clients. Of the clients that have seen examples of Montage screens, each one wants the same type of graphics in their production.

The highest compliment that can be paid to someone in my profession is repeat business. With Montage, not only have my clients been happy with the work I have given them, but they are coming back for more.

VTU

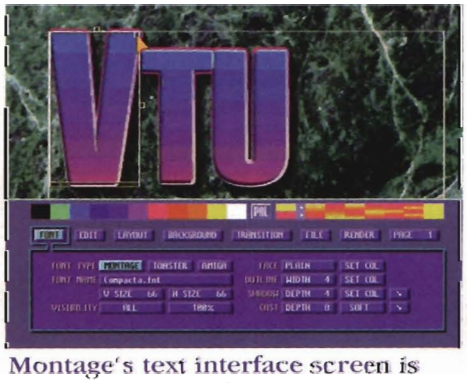
Frank Kelly owns and operates Spot Productions in San Jose CA.



Montage can generate its own graphic elements for backgrounds or to frame text and imported graphics.

Font attributes such as face color, outline size and color, and the size and type of drop shadow are easily changed and modified.

Montage's visual output quality has Toaster users and video professionals alike singing its praises.



Montage's text interface screen is well-designed and easy to use.

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COURSE DESCRIPTIONS

DAY 1 TOASTER ESSENTIALS:

Our Toaster Essentials seminar will teach you how to use your Toaster to supercharge your video productions. This is a brand-new version of the class that has wowed thousands of Toaster users. In Toaster Essentials, you'll learn timesaving tips and mind-blowing techniques for the Switcher, CG, ToasterPaint and ChromaFX. This course does not assume that you own a lot of expensive video gear, nor does it assume that you are a computer wizard. You'll be truly amazed at just how much can be squeezed out of a basic Toaster setup, and how quickly you can become a Toaster expert. This class also features an extensive Q&A session with the "World's Smartest Toaster Guy."

DAY 2 LIGHTWAVE & MODELER ESSENTIALS:

Whether you are a beginner who's been intimidated by LightWave, or a user who's just having trouble getting that broadcast look, this is the class for you. More than just fancy techniques, this class also shows you the right method for creating 3D graphics quickly and easily. You'll learn the right way to set up scenes, tricks for cutting rendering times, and insights on sometimes confusing topics like modeling, lighting, morphing and motion paths. LightWave & Modeler Essentials cuts through the noise of confusing terminology and focuses on what you need to know to effectively use 3D in real-world video productions.

Lee Stranahan could easily be called the "World's Smartest Toaster Guy." Shortly after purchasing one of the first Video Toasters, Lee quit his day job and, with his wife's endorsement, took on the task of learning the Toaster inside and out. Along the way he started the first Toaster User Group and, Bread Box, the first Toaster newsletter (Bread Box became Video Toaster User.) His knowledge of the Toaster became so extensive that NewTek asked him to write the tutorials for the Toaster 2.0 manual. He is the author of "101 Toaster Tricks" and the host of the successful *Desktop Images* series of Toaster training videotapes. Lee could also be called the "Most Traveled Toaster Guy" as he has criss-crossed the country to present his Toaster workshops to over 1,000 satisfied Toaster users.

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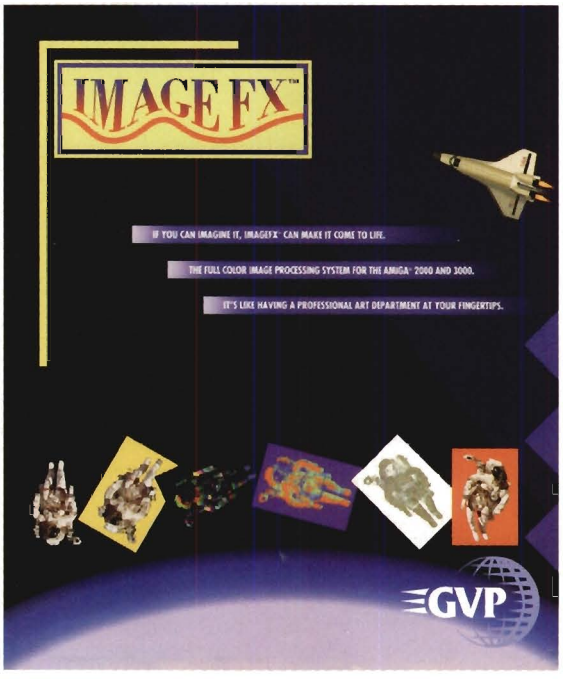
Image F/X
Version 1.03

By Michael Vunck

Long known for an abundance of leading-edge graphic arts software, the Amiga market has been dragging its feet—and some observers would go as far to say that developers had fallen behind the times. Nowhere was this more apparent than in the lack of a professional integrated 24-bit paint and image processing package. Programs such as Photoshop for Macintosh and Windows 3.1 has long been the envy of many Amiga enthusiasts.

Envy no more. Amiga image processing software has come a long way in the past two years. ASDG's Art Department Professional and Black Belt System's ImageMaster are two programs leading the Amiga image-processing path. *[Editor's note: ADPro and ImageMaster were reviewed in David Duberman's "Synergistic Salsa," in the October/November 1992 issue of* Video Toaster User.*]* Now, ImageFX from Great Valley Products joins its Amiga counterparts as a graphics processing workhorse for the Amiga that is equal to its Mac and PC brethren.



Interface

To begin with, I can't say enough about how easy ImageFX is to use. A typical user can literally be up and running within minutes. The interface has an elegant, functional layout. It follows the general style of AmigaDOS 2.0's interface—even when working under AmigaDOS 1.3. (Yes, there are programmers still integrating backwards compatibility to the old AmigaDOS, including ImageFX and its companion program, CineMorph). Both are completely operational under AmigaDOS 1.3, without any loss of features or functionality.

I suspect this backwards compatibility really shows its value to Toaster owners—as most early Toaster workstations came with AmigaDOS 1.3. It's a relief to not have to worry about recommending software that later might require an operating system upgrade.

ImageFX and CineMorph support online help (via Commodore's AmigaGuide system), making it even easier to get started. Whenever I encounter a program area I'm not familiar with, I simply use the Help key to bring up a comprehensive help system that guides me through the operations I'm using. This is particularly valuable when using a new area for a job, or a program area that is used only on rare occasions.

Modularity

ImageFX was wisely designed as a modular system, meaning that it may be upgraded to support new file formats, display devices, and/or scanners at any time. Upgrading simply requires adding a module to the system; of course, ImageFX supplies dozens of modules.

Preview

ImageFX shows you a preview of the image you are working on at all times. The preview is usually a reduced-color version, in anything from grayscale to an AGA HAM8 mode of the internal 24-bit image, scaled to fit on the display. There are full-color, 24-bit previews that may be used if you have a GVP IV24, or Opalvision, DCTV, FireCracker 24 and others. You can immediately see the results of everything you do, without having to request a display. It's fully interactive.

ImageFX's modular preview is a unique and valuable feature. This means that new displays can be supported as soon as the display hardware is available. Other packages, at best, may force you to display and redisplay the image manually.

Rendering

Not only is ImageFX's rendering quality excellent, perhaps it is the best I've ever seen on the Amiga. You can render to any Amiga display format you wish, including all EGS and AGA modes, in anything from two to 256 colors as well as HAM and AGA HAM8 modes. There are also a number of dithering options for getting the best possible rendering. You can select from styles such as Ordered or Floyd, specify the direction of the dither, and you can even specify a threshold level for suppressing dithering strength, if desired.

ImageFX also includes a foreign render module for rendering images you cannot view on your Amiga. In this module, I could render AGA mode images on my Amiga 3000. This render module can also be used to render CompuServe GIF format images, or frames for Flick (.FLI/.FLC) animations. A variety of display devices are also supported for rendering, including OpalVision, DMI Resolver, Firecracker, IV24, DCTV, HAM-E and others. Since this area is also modular, and documented so any third-party developer can write their own modules, I've seen not only GVP releasing new render modules, but modules coming from other vendors as well.

File Formats

ImageFX supports well over two dozen image file formats, including all the popular formats such as GIF, PCX, JPEG, TIFF, and Targa, as well as some fairly esoteric formats like PBM and Alias. It also provides direct support for loading ANIM file frames, where they can be modified and saved back onto an ANIM file (a frame at a time), and also PC animation formats .FLI/.FLC files. The support is complete and thorough, and what's most impressive is that you don't have to buy additional packages to get all of these formats—they're included! This is of great practical use because I have a CD-ROM attached to a workstation, and I can use CD-ROMs full of texture maps available from different third-party sources. Most of these disks are generated for the PC or MAC crowd, but ImageFX has loaded all the images I've

found with no problems. To use the images in LightWave, I just resave them as IFF24.

Scanning

ImageFX currently ships with modules for controlling the Sharp JX100, Epson es300c, 600c and 800c scanners, as well as PP&S' FrameGrabber, GVP's own IV24 framegrabber and the VLAB framegrabber.

The scanning interfaces are easy to use, as well as thorough and effective. All aspects of controlling your scanner are covered, and several very nice features are available in ImageFX that are available no where else.

For instance, the JX100 can be configured to use any third-party serial board. This finally frees up my Amiga's serial port for telecommunications and allows me to keep the JX100 connected at all times, so it's available when I need it. The Epson scanner interface has all the usual controls, but it actually displays a color preview so I can achieve much more accurate selections of areas I wish to scan.

I've been able to use ImageFX's scanning modules to capture client's artwork using an Epson 600c, with the GVP-style cable I ordered from Redmond Cable. Then I import the artwork into Pixel 3D Professional, and extrude it to make the easiest logos I've ever created.

Effects

The amount of image manipulation features in ImageFX is truly staggering. They range from simple brightness, contrast, and gamma correction tools all the way up to wave distortions and oil painting effects. See the accompanying sample images showing just a few of the possible effects.

All effects may be performed on the entire image; but more importantly, they can be limited to regions of the image without affecting the remaining parts. ImageFX's selections include: Box, Polygon, Freehand, or Flood (a.k.a. Magic Wand) regions. The effects can also be performed on brushes.

If you want to process effects across a series or batch of images, ImageFX has the precise tool: IMP. This ImageFX Multi-Processor allows you to batch-convert image sequences from one format to another, or process effects on an image sequence as well. Amazingly, IMP does this without requiring ARexx! While the Amiga has a selection of utilities for other image processing software that can do the same things IMP does, all other software (like FRED from ASDG) requires ARexx. Since I am not a programmer, I have had little interest and little success in using other packages. IMP now does all my effects sequencing without requiring me to become a programmer. I don't want to give the impression that IMP doesn't do ARexx; on the contrary, IMP can access ARexx scripts as well.

Painting

As if there wasn't enough in ImageFX already, GVP has also included a full-featured paint system. All the standard drawing tools are present, with a plethora of drawing modes, including Darken, Lighten, Colorize, Rub-through, and HSV (Hue, Saturation, Value) painting, to name a few. The tools interface is exactly like the toolbar you see in nearly all Amiga paint programs. If you use DigiPaint/ToasterPaint, you'll probably enjoy using ImageFX's painting tools.

While ImageFX's painting isn't quite as real-time as DeluxePaint, it is fast enough that I didn't encounter any problems. While painting is immediately echoed back to you, some effects like Darken and Blur are redrawn afterwards with the proper effect.

The software supports standard Amiga brushes, and unlike some 24-bit image processing paint packages, or some paint packages I've seen that come with 24-bit display boards, you can actually see the brush as you move it—it's not the simple outline that other software is limited to. ImageFX's painting tools also include full Undo/Redo support and the keyboard commands are nearly identical to popular paint packages like DeluxePaint.

One tool in particular that I found invaluable is the airbrush. This tool works and feels much like a real airbrush, giving you smoothly-blended edges and full control over the radius of the brush and the paint flow. You can use it with any of the drawing modes, and its controls can be combined with the alpha channel modes to create real-world painting effects with ease.

When using the painting tools on a display card, such as the Firecracker 24 I was using in my tests, you sacrifice some quality in feedback as the colors of the real-time painting have to be echoed back before you can see them properly. Due to the way the modular previews are implemented on these boards, your images are in a single color, but that's a minor sacrifice at most.

Printing

ImageFX supports printing to preferences printer drivers and PostScript through a selection on the main interface menu. Once you've selected the print menu, you can output to one of the two modules.

The first module listed is the PostScript module. It does an excellent job of handling PostScript output, with the usual complement of controls for this task. You can also direct your output to a file instead of to the printer.

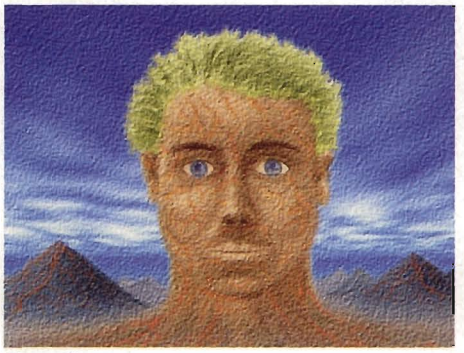
The other module is the PREFS module (in the latest ImageFX release, this has been upgraded to PREFS2). PREFS2 is a much-enhanced version of the earlier module, both of which control image output to any preferences printer. The current module has possibly the best printout quality I've ever seen from any Amiga software, and it's far easier to use. Most options are preset in this module leaving only a simple adjustment to your printer's color correction controls. These controls are familiar and easy to use. The only difficulty I ran into here was getting color output on a Hewlett Packard Deskjet 500c; however, the problem lay in my printer driver, and switching to a different driver fixed that up.

ARexx

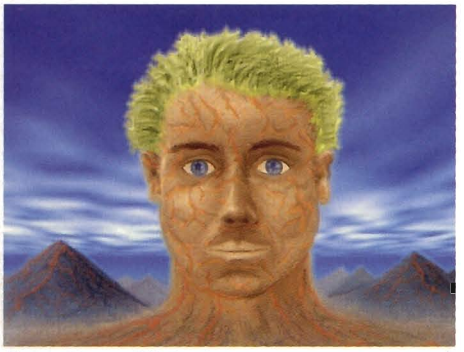
ImageFX's ARexx implementation is extensive. There are literally hundreds of commands for controlling every aspect of the software. There are even commands for building custom requesters. As I mentioned earlier, I'm not very strong in programming skills, but I was able to create small ARexx scripts specifically for macro keys with no problems—the language uses sensible names for all commands. The real benefit is that all of the ARexx commands are available as a script language for redefining the keyboard commands, without requiring ARexx.

Those wishing to use ARexx won't be disappointed because dozens of ARexx scripts are included with ImageFX and thoroughly demonstrate its use. I've already seen scripts from ImageFX users showing up on the commercial networks that handle things from CMYK color input to the creation of proofsheets of multiple images. One of my personal favorites is a set of user-written ARexx scripts that allow me to process and edit frame sequences much like one edits animations in DeluxePaint—using almost exactly the same key commands! It is a truly wonderful concept that's saved me loads of time.

FaceCurtain:
This image was created by compositing a hand drawn curtain through the alpha channel. To create the appearance of an image painted on fabric.



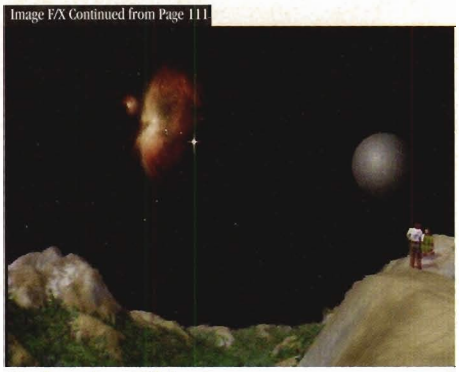
FacePaper:
This image was created by using an alpha channel with a paper-like texture. This simulates an image drawn on coarse paper.



FaceSun: This image was created with extensive use of the Airbrush and Smear modes. It was possible to create an image that resembles oil painting. I composited some fractal clouds above the background imagery.

Continued on Page 112

Image F/X Continued from Page 111



Galactic: This image was created using composites of VistaPro landscapes and NASA stellar images, radial filled circle, other drawing tools, and Rubthru drawing modes.

Neander Skull Emboss: A skull image was blended into an edge-detected line art version, which was then blended into a motion-blurred version of the line art.

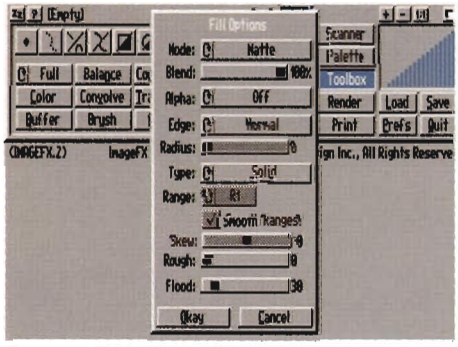


Image FX's interface is easy to use. A user can literally be up and running within minutes.

Morphing

ImageFX also includes CineMorph, GVP's morphing software, at no extra cost. Special features were added to this version of CineMorph so it can take advantage of ImageFX's loading, saving, and rendering features (you can load or save images in any of the many formats supported by ImageFX, or render to any of the display devices supported).

I've previously reviewed CineMorph in another publication and it continues to be one of my favorites. Despite claims from other morphing software publishers, CineMorph has still proven itself in my tests to be the easiest and fastest-to-use morphing program for the Amiga.

CineMorph's dual window interface is the most-advanced and easy-to-use method of setting up a morph. Of the jobs I have produced using this software, I've found it easy to adapt existing points to morph one object into another. When morphing moving objects, the unique controls for handling frame sequences are much easier to use, as they are built into the same interface as the rest of the morphing controls.

Virtual Memory

Another outstanding features of ImageFX is its integrated use of virtual memory (while there are virtual memory products available from third-party vendors, virtual memory is included in ImageFX).

ImageFX's VMEM, designed solely for use with images, is astonishingly fast when processing images too large to fit in my Amiga 3000's RAM memory. I have worked on images as large as 2,550 by 3,300 pixels on a 300dpi 8.5"x11" page with very acceptable speed. In fact, I have compared ImageFX's VMEM operating speed against the PC and Mac programs, and ImageFX was far and away faster in nearly every similar operation that used virtual memory. Score another advantage for the Amiga.

Even more astounding is that ImageFX's VMEM works on any Amiga, from the lowly 500 to the new 4000, as it is not based on the MMU (Memory Management Unit) chip found on 68030 and 68040 cards. Innovatronics' GigaMem and the shareware HDmem, the only other virtual memory systems available, do require an MMU.

Speed

ImageFX gains speed with each upgrade. The current ImageFX is faster in nearly every operation in comparison to competing packages. As I mentioned before, CineMorph is also much faster than any other morphing software currently available.

Configurability

ImageFX has a high degree of configurability. To start with, you have ability to reprogram any key to execute any series of effects or operations. As I mentioned in the ARexx section, I used many of the ARexx commands just as a script language to tie often-used effects and operations to keys.

You can also edit a text file to remove or add other options to the Toolkit screen's menus. I didn't get to use this much, but I did add an option to my Size menu, which I called Halve, to automatically call the built-in routine to scale by half at high speed.

ImageFX's preferences menu makes it easy to completely preset the system for whatever combination of scanner, preview, render, and printer you desire. You can even load and save multiple preferences for different work environments.

The Manual

ImageFX's manual is a well-indexed and easily-referenced work. The tutorials give you a quick, if not thorough, feel for the software. The manual works quite well as a reference to ImageFX, but could benefit from more in-depth tutorials as well as illustrations. In particular, I would like to see some before-and-after examples of the effects.

Upgrades

At publication deadline, GVP has shipped two free ImageFX upgrades. The first upgrade was shipped free to any registered user who called in to request it, and the second upgrade was made publicly available on all commercial networks and on many bulletin board systems. Both upgrades added many dozens of new modules and features to the basic package. By the time you read this review, a new upgrade, with major feature enhancements and even more modules, should be due. The continued development on ImageFX appears to be aggressive and exciting!

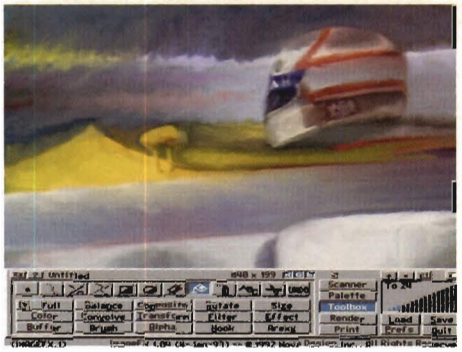
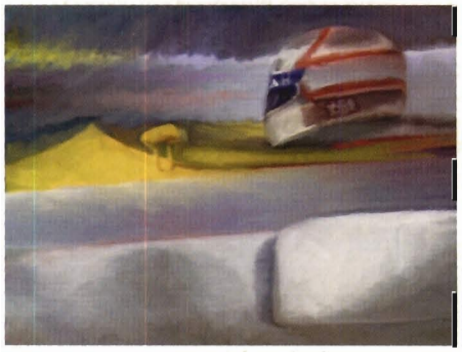


Image F/X allows users to load a variety of different formats: GIF, PCX, JPEG, TIFF, Targa, PBM and Alias; as well as PC animation formats FLI and FLC.



Once images are loaded in Image F/X, they can be saved as IFF 24 and brought into LightWave for Toaster use.

Toaster Support

Byrd's Eye Software, makers of ToasterVision, announced at the April '93 National Association of Broadcaster's show the release of ToasterFX—a package of modules for ImageFX that completely integrates ImageFX into the Toaster package. ToasterFX allows image rendering directly from ImageFX to the Toaster's DV1 or DV2 buffers; loads framestores into ImageFX for painting, retouching or effects work; places effects croutons on the Switcher screen to apply ImageFX's special effects to on-screen images; and allows ImageFX to preview, paint and image process directly on the Toaster's composite screens.

Conclusion

At a list price of $369 (with street prices often under $200), ImageFX is one of the best bargains in the Amiga market. While ASDG's ADPro is a worthy competitor, for my money ImageFX has more power and features.

If you already own other image processing software, strongly consider adding ImageFX. If you're purchasing an image processing package for the first time, I recommend ImageFX—nothing else quite compares.

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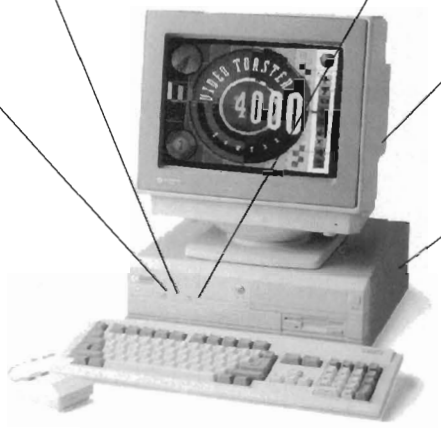

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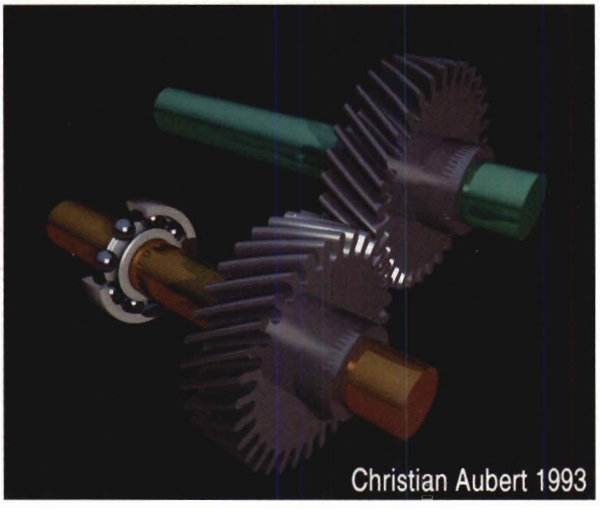
Building Gears in LightWave

By Christian Aubert

I often read other Amiga-related publications for information and inspirational ideas. A few months ago, I came across a gorgeous "Gears" picture by Bradley N. Litwin. Knowing it was created with Caligari, I decided to try and remake it using LightWave. The modeling took me about 90 minutes, and since you can avoid most of the trouble I went through, building your own gears should be a snap.



This tutorial is very simple, provided you are willing to pay close attention to detail. I recommend that you read it once before trying it out—it gives you a better understanding of the modeling processes involved.

All the numeric data is given in millimeters, (mm), unless otherwise noted. I use keyboard shortcuts or numeric equivalents as much as possible. Remember to save your work often, especially if you're going to model as you read. There is only a minimal amount of handholding to speed up the building process.

The Gear Itself

The gear is made up of 32 teeth, each one outlined with 16 vertices. Pick a free layer and add a disc as in Figure 1. Delete one of the two polygons and make sure the other one is pointing towards the Z axis. Delete all the vertices, except the two lying on the X axis, and eight vertices both above and below the X axis on the left side of the disc, as in Figure 2. This thin slice is about to become a tooth in our gear.

Go into Point Mode, pick the rightmost vertex, and move it -145 mm, to the center of the axis system. This will be useful when we clone the polygons to build a complete gear. Now let's concentrate on the leftmost vertices. The top and bottom vertices define the lowest part of the tooth. The middle vertex defines the highest part; move it -40 mm. Select the fifth vertices from the top and bottom, and size them by a factor of 1.14, as in Figure 3. This makes for a good starting point to mold the rest of our tooth. Pick the remaining vertices by corresponding pairs and Stretch them in position, as shown in Figure 4. Notice that not placing the cursor on the X axis before performing a Stretch, or using Move, causes the vertices to move asymmetrically, which is not what we want.

Dividing a 360-degree disc by 32 gives us a rotation of 11.25 degrees per clone. Now clone the tooth polygon as shown in Figure 5. Select all polygons and use the merge points operator (63 points should be removed). We are now faced with the 250 points per polygon limitation of LightWave 2.0 (which should be lifted in the upgraded versions). Select eight neighboring polygons, taking care to select them in a clockwise order and merge their polygons. You should be left with a polygon still pointing towards the Z axis. Repeat the procedure three times, making sure you get something like Figure 6.

Just for the sake of simplicity, rotate the polygons so that their inner edges are parallel to the axis lines. In this case, a rotation of 5.625 degrees (11.25 degrees divided by two) does the trick. Adding extra slices to the object doesn't affect the rendering quality, but does affect rendering speed and memory usage, so just extrude the polygons with one segment, as in Figure 7. Finally,

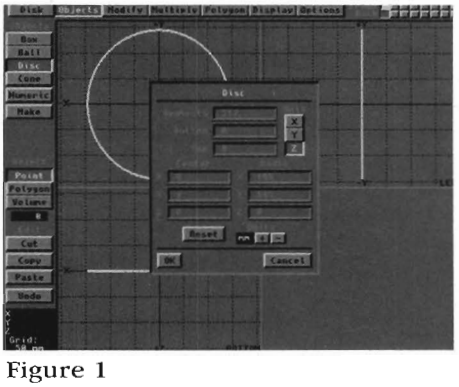
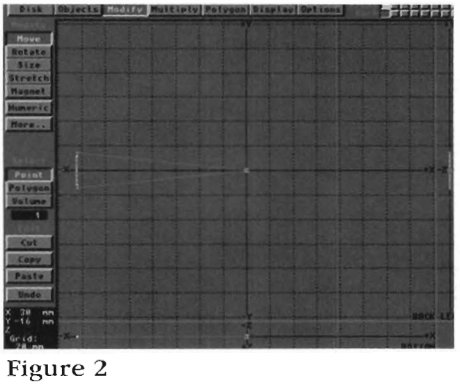


Figure 1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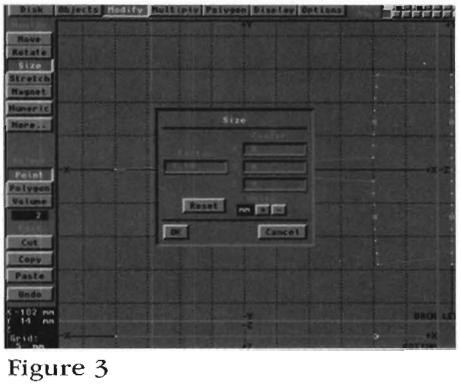


Figure 3

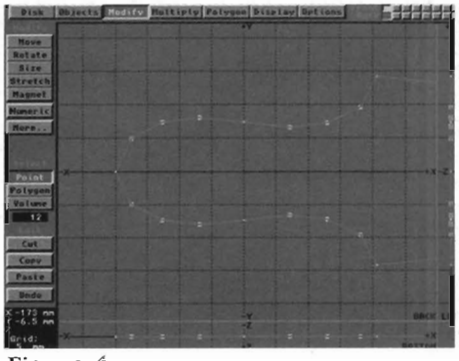


Figure 4

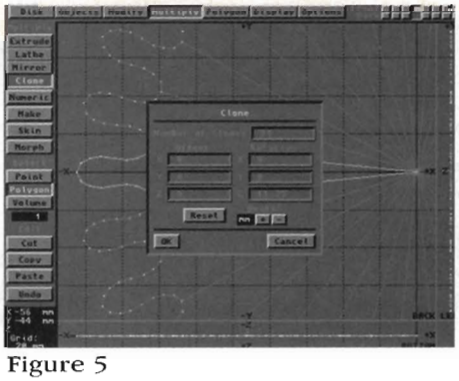


Figure 5

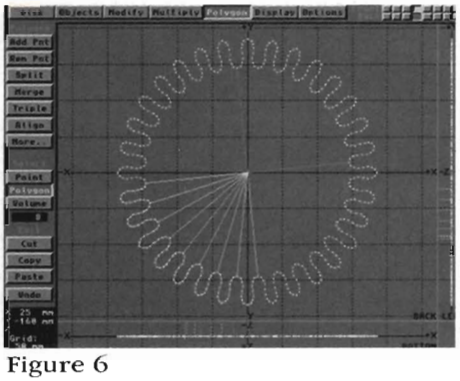


Figure 6

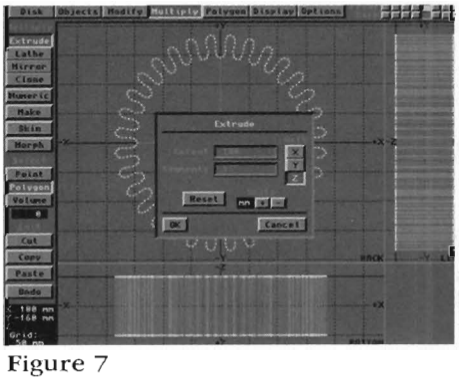


Figure 7

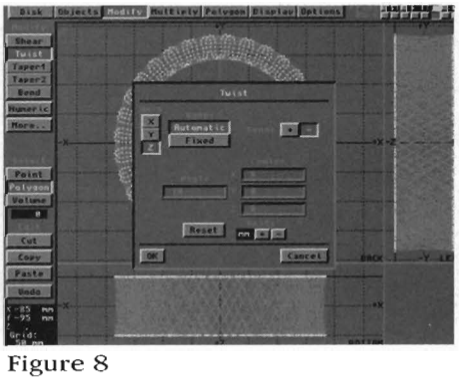


Figure 8

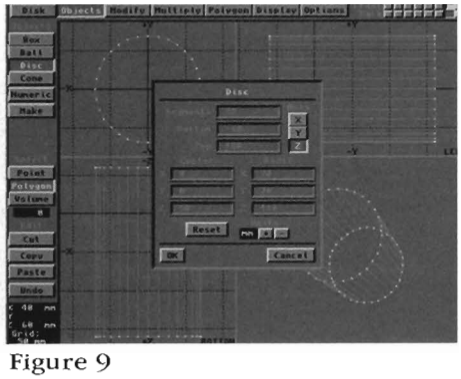


Figure 9

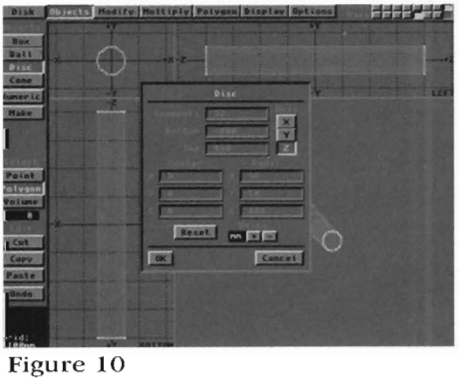


Figure 10

twist them, as shown in Figure 8. This results in polygons that are not perfectly flat, but from my experiments they render correctly, even though they are "illegal." You now have a fully functional gear! Well, almost.

You need to remove the inside polygons created by extruding the gear. Select the inside polygons by clicking on the center vertex (16 polygons should be selected). Cut these polygons and paste them in an empty layer. Select the eight polygons that have more than four vertices (by pressing *w*), cut them, and paste them in the layer where the gear is. This insures that the sides will not be smoothed in with the teeth when they are rendered.

The Shafts

Both shafts are fairly easy to build. Just follow the indications in Figures 9 and 10. Don't forget to assign them different surface names, as one will have the same texture as the gear, and the other a kind of brassy orange texture. All that's left to do is assemble all these pieces together in a somewhat similar fashion to that shown in Figure 11.

Adding Surfaces

This picture makes extensive use of environment reflection to determine the objects' colors, so you should leave the backdrop colors untouched. Obviously, all the objects used for this picture have Smoothing turned on, and you should do the same for all the objects you have built for this project. Whenever a surface attribute is not mentioned, you should leave it to its default setting. The gear and silver shaft Diffuse levels should be set to 20, Specular to 100 and Reflection to 20. The orange shaft has its Color set to 240, 130, 40, Diffuse to 20 and Reflection to 50 with Color Highlights.

If you want to replicate the picture more closely and add the gear with the green shaft, load another copy and set its color to 40, 180, 130. Save it and bring it back into Modeler. This gear has to have its teeth in the opposite direction, and you could just rebuild it, but there is a much quicker way to get the result we're after.

Stretch the object by -1 on the X axis. This inverts all polygons, as if you were looking at it in a mirror. Remember that doing this also inverts the polygons' surface normals, so you have to flip the polygons (by pressing *f*) back to their normal orientation. If you didn't do this, you would have to set the surfaces to Double Sided, unless you *wanted* to see the inside of your object (remember that trick, it may come in handy someday).

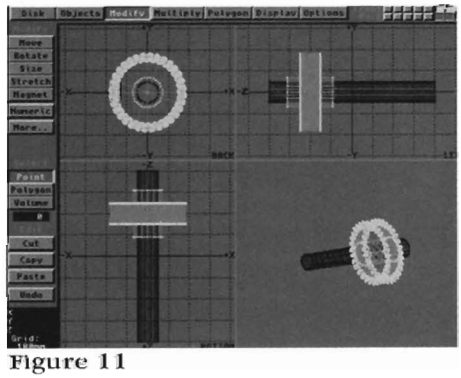


Figure 11

Rendering

The only rendering trick used in this picture is getting the black backdrop without setting the background colors to black. You simply place a black picture in the Background Image requester. You can easily create that picture with ASDG's Art Department Professional by loading a 188 x 120 all-black backdrop and saving it as a two-color picture. It uses a total of 3K in LightWave.

Since I've already taken up a lot of space, the ball bearings and their housing will have to wait until next time. Remember that the more you experiment, the better you'll get!

VTU

Christian Aubert is a freelance computer graphics artist. He has been focusing on 3D graphics for the past five years.

ToasterPaint Chronicles #2

By R. Shamms Mortier

In the previous installment of ToasterPaint Chronicles (*VTU*, April/May 1993), we showed you how to apply various textures to letters by using the RubThru feature. This time I will demonstrate another option, one that may appeal to those who own a large collection of textures. This method of applying textures to text is also very fast, though it does lack some of the interactive creative opportunities that the last article explained. It takes advantage of one of the most useful features in TPaint, the ReDo function. This same function can be used to create some very interesting and unique graphics outside of text, and we'll touch upon that too.

Your Favorite Textures

Texture mapping is often associated with wrapping various digitized and painted textures on 3D objects, like those found in LightWave's library of 3D forms. But texture mapping need not only address 3D graphics, since it can be used quite effectively when the target is a 2D form.

Before we start, collect the disks that represent your favorite texture maps, and stack them in front of you. If all of your textures are in a drawer on the hard disk, locate and select the ones you like most. Texture maps can come from commercial texture library collections, or your own creative efforts.

First, after locating the textures, boot up the Toaster and get into ToasterPaint. Most of the textures that I like are too big to use right from the file, so after importing each in turn into TPaint, I grab a rectangular section as a TPaint brush, call up the Save Brush requester, and save them in a special file (you can use your RAM disk for this tutorial). The textures that I have chosen for this tutorial are Boxwood, Lizard Skin, Plants, Bricks, Marble, Pumice, Gravel and Particle Board. With these we shall create some interesting text effects.

Experiment One

First, take the Marble texture and choose Brush/Swap/Copy This Brush from the Brush Menu. This places the texture in memory, and is usually the first step when using a TPaint texture. Then go to the font menu, load a large sized font. In this case, I'm using DECO 91 points (an Amiga-system font is much larger than the available Toaster fonts). In TPaint, enter the text string: Fontastic. For this first step, use Normal mode and the color black. The arrow key next to the text input window causes TPaint to create that text in the mode you're in, and the text is painted down on top of the Marble background. Switch into TxMap mode and hit the arrow again. Now the text is created with the marble texture. Place it a bit above and to the right of the black letters already painted down. Finally, go to the Mode requester and choose Lighten, and hit the ReDo button. Now the letters pop up from the background. Then in succession, I use Gravel, Boxwood, and Brick textures and paint the text down on other parts of the page. Can you discern the multitude of possible applications already? (By the way, the Blur operator was used over the bottom two text areas.)

Experiment Two

Now that you understand how we're working, it's time to complicate matters a bit. As you have seen from Experiment One, the ReDo operator allows you to choose any mode and as long as you haven't painted on a new area, it applies the new condition in exactly the same screen position as the last operation. Modes, however, (and especially texture maps) can be altered themselves in the way they paint to the screen. To understand this further, we need to look at the Transparency/Warping operators. They can be accessed by clicking on the bottom-left icon (the one that looks like a circle over a square). Do this now if you are reading this tutorial while working in ToasterPaint.

The intricate possibilities of this menu are numerous; however, for this tutorial it is essential that you achieve only a basic familiarity with what's involved. Our main concern is the Transparency tool, in the right menu area. Notice that it has two sliders on its sides, and a selection of four selectable areas on top (a rectangle, a circle, a vertical column and a horizontal column). This tool changes the way the selected mode is painted to the screen. The left slider decreases the painting done in the inner part of an object as it is moved down, resulting in no painting when it's down all of the way. The right slider operates on the outside edge of the mode application in the same manner. Of the top choices, they work as follows: The first rectangular selector treats the entire mode operator, causing a degree of transparency to be applied across the whole object equally. The next three choices allow you to treat the transparency ratio between the inside of a mode in a different fashion, then the outside is treated by moving the side sliders independently. All in all, this means that you can not only overlay an infinite amount of painting modes on top of each other, but you can also vary the transparency of each! Now let's apply this knowledge to our text brushes so you can understand what this means visually.

Experiment Three

Again, choose a large font so you can see the effects that are being applied. After having set the text in the string input box and chosen Normal mode, write the text to the screen (choose a dark color). Now, with the text brush still active and attached to the mouse, go to the transparency selector and choosing the circle at the top, move the right slider all the way down. Move the point in the center of the bottom circle to the middle. We have just told the next mode operator

to paint itself to the screen so that the outer colors from a point center become more and more transparent. Now go to the Mode selector and choose the Range mode, and hit ReDo. Your results should be comparable to the top figure in Experiment Two. Can you see how the ranged colors fade over the first color?

Now set Transparency back to Normal (both sliders to the top), choose another Normal text color, and paint it to the screen. Select another range of colors, and choose the vertical column on the Transparency selector. Move the right slider down about two-thirds, select the Range mode and ReDo. Figure 2 of Experiment Two shows the result. See how the ranged color is applied from the left? If you just use this ranged painting alone, the right side of the text begins to fade into the background as in our third example. Painting over this with another range targeted to the right side causes one range to melt into another. Using the horizontal cylinder and moving it to the middle, selecting a range of colors and fading out the center (moving the left slider all the way down) gives us the last example on the bottom of Experiment Two.

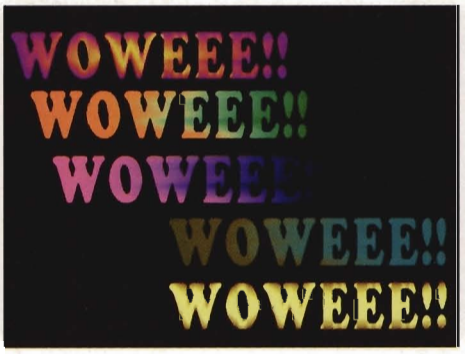
Putting It All Together

Now the visual fun begins. Let's combine what we learned in Experiments Two and Three and design some text strings that have both textures and ranged colorations. Obviously, what we learn can be just as easily applied to pictures as to text, so we're building a foundation of knowledge that serves us in all our TPaint activities. All of the examples in Experiment Three were accomplished by applying differing degrees of transparency to textures and ranged colorations. In some cases, the Brightness mode was used to pop the letters out further. Study these graphics carefully, and see if you can intuit how each was accomplished.

Mastery of TPaint or any other computer graphics software does not come by reading or listening as others explain their work habits. Like all learning, it comes by doing, and there is always a direct connection between the proportion of time you spend practicing and experimenting and the degree of your accumulated expertise. In my experience as a graphic designer and animator, I have noticed that my successful peers get a bit less sleep then other individuals who complain that the tools they are using aren't "professional" enough for them. TPaint is a magical and professional videographics tool—mastering its capabilities just takes practice. Until the next time, enjoy! See you in ROMulan space!

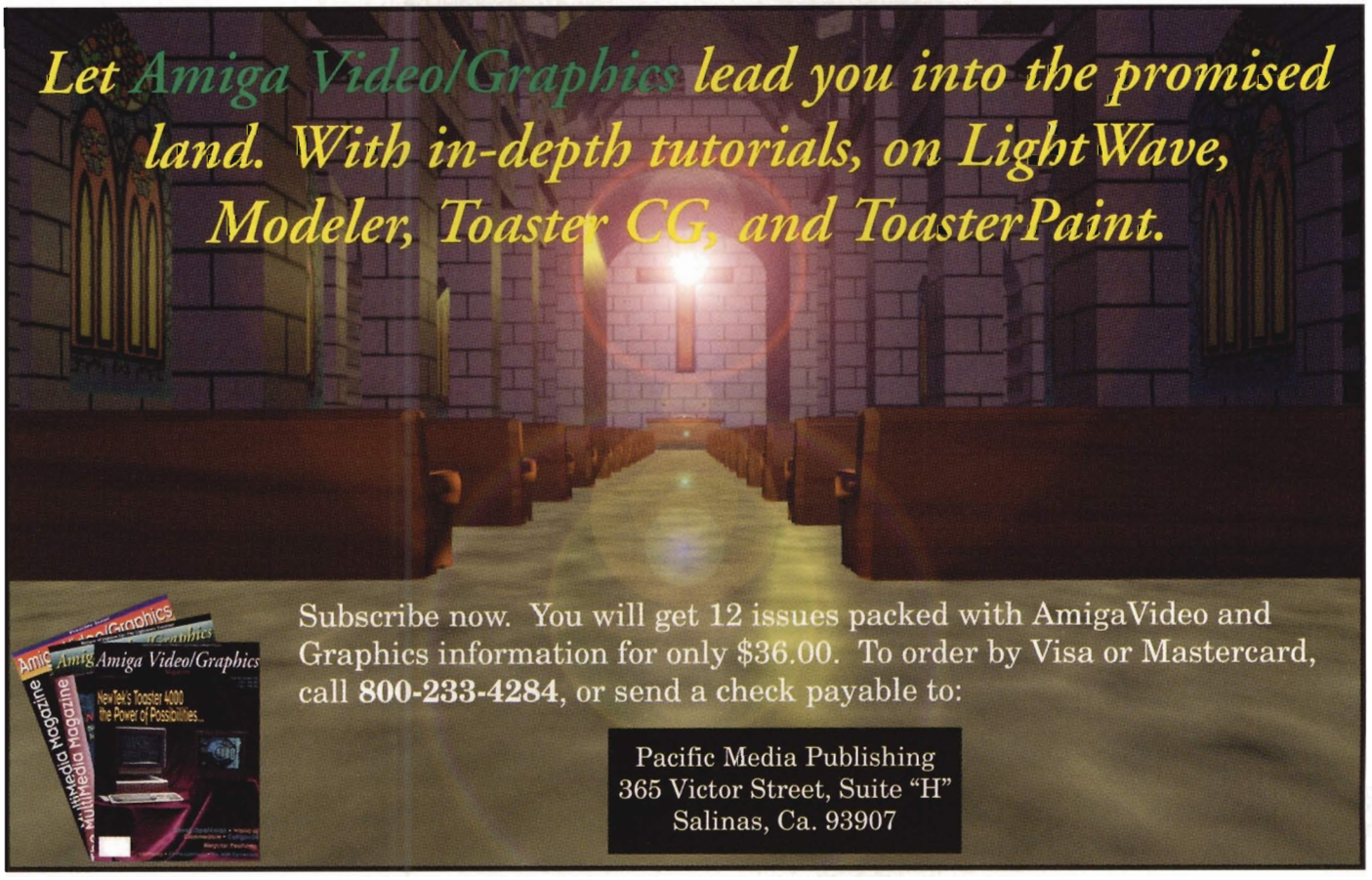
VTU

Experiment One



Experiment Two

Experiment Three



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TV Commercial Techniques

By Burt Wilson

Have you seen any TV commercials with a technique where the whole commercial looks like it's been letterboxed (there's a thick, black border at both the top and bottom of the screen and all the action goes on in between)? The Video Toaster lets you create this cool effect with ease.

There are two main advantages to letterboxing. First, it gives your commercial a wide-screen appearance. If you shoot with a wide-angle lens, you can include a lot of background in the scene while you're on a closeup of your talent. Second, if you have information you want to convey to the viewer without disturbing the picture by superimposing text, you can put the words in the black-border area. This works extremely well for phone numbers and product points.

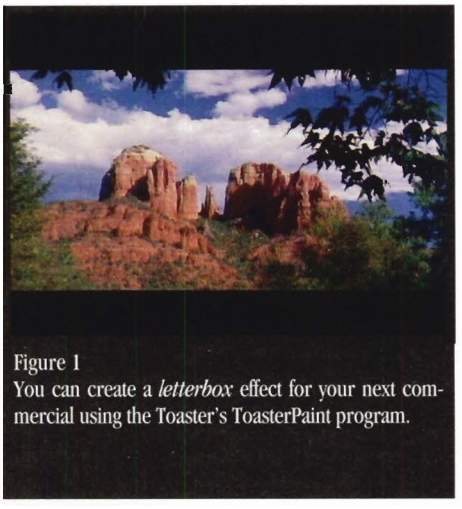


Figure 1
You can create a *letterbox* effect for your next commercial using the Toaster's ToasterPaint program.

The main advantage of letterboxing is that it helps focus the viewer's eyes to a more comfortable format, which allows the eye to take in more of the picture. To put this technique to work on your Toaster, go into ToasterPaint and clear the screen to a black pallette.

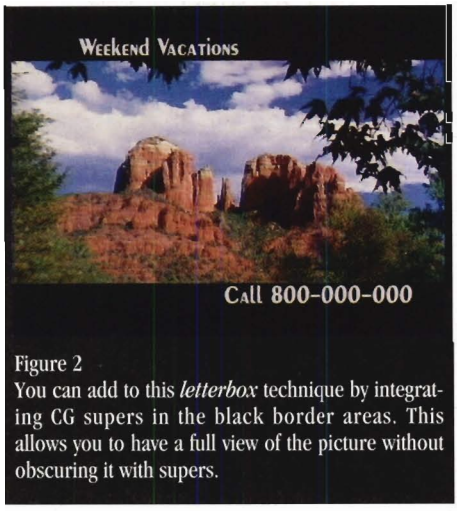


Figure 2
You can add to this *letterbox* technique by integrating CG supers in the black border areas. This allows you to have a full view of the picture without obscuring it with supers.

Click the left mouse button on the current color box, located next to the range buttons directly above the brush size selector. This shows you a vertical range of black shades at the bottom left corner of your screen.

Holding down the left mouse button, move the arrow to the first shade up from zero, to 16. Three 16s appear in the top bar. Release the mouse. Now you have selected this slightly lighter shade of black for painting. Later, the darker black drops out during keying while this slightly-lighter shade remains.

Next, with this lighter black as your brush color, click on your Coordinates button, the Rectangle brush and the Fill button, and draw a solid bar all the way across the top of your screen about 90 pixels down from the top. Do the same thing on the bottom about 90 pixels up from the bottom edge. (You may want to experiment with different widths to suit your own taste or special needs.)

Save your screen and exit to the Switcher. Click on the black clip button, then click on the clip level numbers, and pull them down to around 36. Now you are ready to run your video through the program buffer and out to your editing deck. The video goes out with the black borders you made, keyed at the top and bottom, giving you the desired letterbox effect. Adjust your clip level to where the borders and the picture are clean and free of glitches. Now all you have to do is edit your whole commercial together while in this mode.

There are a couple of things to remember, however. Set your black border screen dimensions *before* you shoot your video and feed it to the monitor to be used during your shoot. Then, with an eraseable black marker, draw a box commensurate with the size of the open area (the area within the letterbox) on the monitor screen. This is the video area to use on your shoot.

If you want to add graphics (such as a phone number) to your borders, make sure to load your border framestore in ToasterPaint and exit to the Switcher. This method sets it up as the background in the CG editor. Go into Toaster CG and hit the F1, F4, and Alt/F3 buttons. Then, using the F2 button, cycle through the options until you see the paintbrush crouton and exit back to your graphics screen. Now you can add graphics directly to your black border framestore.

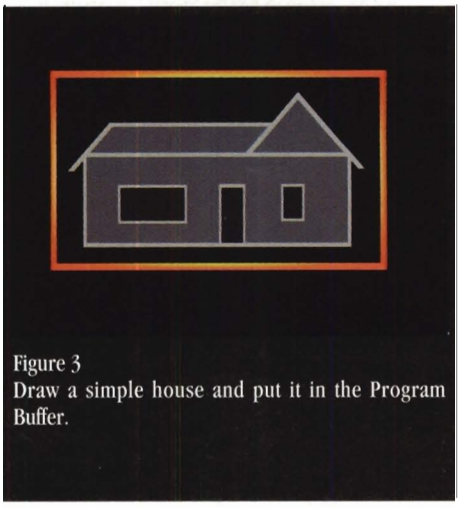


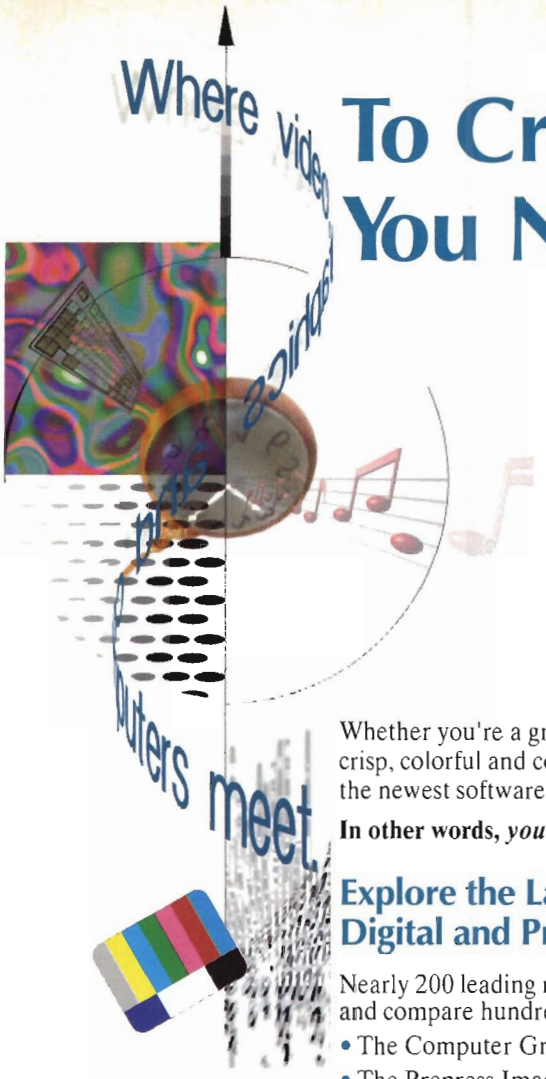
Figure 3
Draw a simple house and put it in the Program Buffer.

While editing in this keyed mode, you cannot use any Toaster effects except Take and Dissolve. In my experience, the letterbox effect is enough; any added effects are excessive for a commercial.

You may want to experiment with different-colored

Give Your Commercial a Wide-Screen Appearance

Continued on Page 124



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Commercial Techniques Continued From Page 122

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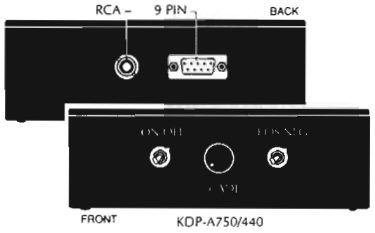

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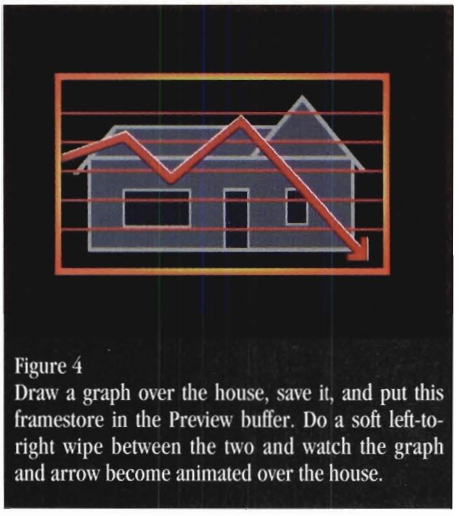

Figure 4
Draw a graph over the house, save it, and put this framestore in the Preview buffer. Do a soft left-to-right wipe between the two and watch the graph and arrow become animated over the house.

borders for an MTV effect, but black seems to be the popular color for a wide-screen effect.

Cheap Animation Effects

One frequently-used effect in TV commercials is a graph with an arrow moving from left to right, either up or down. To make this effect, I previously used a paint program like Electronic Arts' Deluxe Paint and animated the arrow over a selected number of frames and then genlocked the animation over a graphic in the editing process. But with the Video Toaster, the animation takes less time and eliminates all the headaches of counting frames and cleaning up animations.

For example, let's say you want to display a downward trend in mortgage interest rates. First, go into ToasterPaint and draw a simple picture of a house on a black background. Save this as a framestore and name it number 100 (if you already have a framestore #100, use a different number sequence to avoid deleting any framestores). With the same house still on-screen, draw a series of horizontal red lines over the house. This represents the levels of your graph.

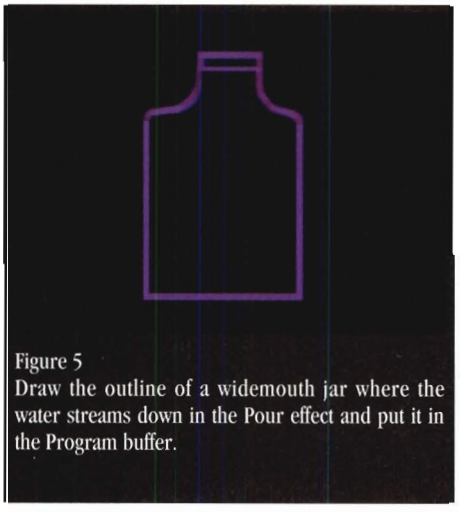

Figure 5
Draw the outline of a widemouth jar where the water streams down in the Pour effect and put it in the Program buffer.

Now click on your square brush, make it as large as you can, and draw a line from the top left of the screen to the bottom right corner, finishing off your line with an arrowhead. You may want to have your line rise and dip a few times on the way to the bottom to give it authenticity. Save this screen as a framestore and number it 101.

Next, exit to the Switcher and put the house framestore (100) in the Program buffer and the house-with-the-arrow framestore (101) in the Preview buffer. Go to the D bank of effects and select the soft left-to-right wipe, #21. Set the wipe speed to slow and execute the wipe by hitting the space bar.

On your program monitor you should see a graph appear over the house with an arrow moving from left to right and down, stopping at the lower right end of the graph. All neat, clean and easy!

The principle to understand is that in certain Switcher wipes (usually those that do not compress the frame), you can make a transition between two framestores that are exact duplicates except for one area, and the wipe only affects that area or graphic addition which is not duplicated.

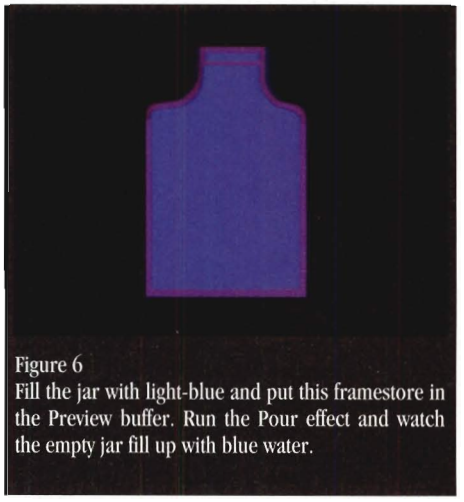

Figure 6
Fill the jar with light-blue and put this framestore in the Preview buffer. Run the Pour effect and watch the empty jar fill up with blue water.

Another trick demonstrates a technique you can use in a variety of ways. For this animation, use the "Pour" effect (A Bank #46). On a black background, draw the outline of a widemouth jar below the stream of the Pour effect. Save as a framestore. Choose light blue from the pallette and use the Fill button in ToasterPaint to color the inside of the jar. Save this as another framestore. Now put the jar outline in the Program buffer and the filled jar in the Preview buffer and run the Pour effect. Your empty jar fills up with blue water!

The idea is not to use this effect in a broadcast commercial, but to demonstrate a technique. When you know this technique and learn the functions of the different Switcher wipes, you can make different things happen—like making a ship appear in the jar, for example. Experiment and you'll find a lot of interesting things you can do to add life to your commercial without investing a lot of time.

The fun thing about using the Toaster for TV commercials is that very often the visual material forces you to learn and find new Toaster techniques! View every problem as a challenge to your own ingenuity and see what happens. If it's good, share it with us!

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Burt Wilson is an award-winning TV commercial producer/director who uses the Video Toaster exclusively in all his productions.

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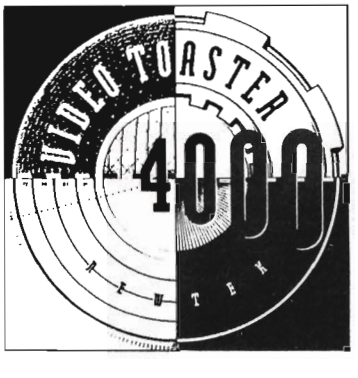

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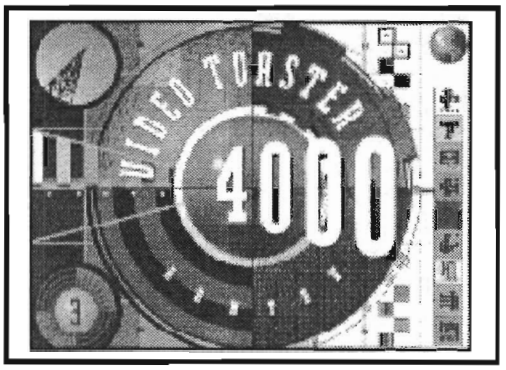

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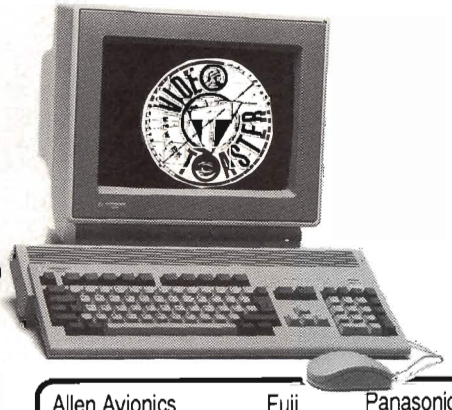

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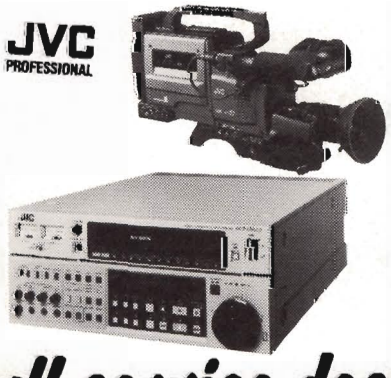

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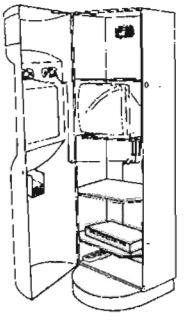

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BITES

By Bob Anderson

Auto Hue Primer

As NewTek's Technical Support Manager, I often take phone calls from people experiencing color-shift problems with their Toasters. The problem usually appears as a shift, due to the difference between digitized video in DV1 as compared to DV2, between the Toaster's analog and digital channels. (See James Hebert's Slices column on "The Digital Channel" in the December/January 1992 issue of *VTU*.) Some people may experience this problem and not even notice it, or consider it to be the nature of the beast. These shifts can appear as a color difference, or an apparent brightness difference, and can easily be cured by following simple rules for performing the Toaster's internal AutoHue procedure.

How To Recognize the Problem

There are two simple tests to determine whether or not you should re-AutoHue your Toaster. It is easiest to load the same framestore into both DV1 and DV2, then hit Return to perform a Take between the two buffers. The Toaster specs a 3 IRE and 3 degree chroma phase between the buffers. You might be able to tell that something is different each time you do a Take, but the difference between the buffers should not be prominent. If it is, you should probably re-AutoHue your Toaster.

The second test compares the Toaster's analog and digital channels. With a video source in input one, select one on Program and Preview. Switch the Freeze button to the off position. Select DV1 on Program. At this point, input one, DV1 and DV2 should all be selected on Program. With the Switcher in this configuration, input one video is passing digitally. Hitting the Return key to perform a Take toggles between the analog and digital channels of the Toaster. Again, the difference should not be noticeable.

What Does AutoHue Do?

AutoHue is an internal calibration that the Toaster performs to keep its colors looking correct. If you find that every time you perform a digital effect your subject matter shifts to green or blue, it's time to re-AutoHue.

Correctly Performing AutoHue

If you have performed these tests and feel that your Toaster could use a slight adjustment, follow these simple guidelines and you'll get the best possible results. The Toaster must be fed a good stable video source into input one. I prefer to use a camera or blackburst generator as the video input, as opposed to any time-based corrected tape source, as this eliminates the possibility of any interference in the signal from problems with the TBC. Keep this procedure simple. Many people mistakenly think that AutoHue must be performed using the input cable lengths that will be in the Toaster's final setup. AutoHue is an internal adjustment, and should be performed with the shortest, best-quality video cables you have. (One-inch cables are great.)

The Toaster program itself should not be running when you perform AutoHue. You'll want a good stable video source as described above, connected to the Toaster's input 1. To perform the procedure, Toaster 4000 owners need only to double-click on the AutoHue icon located in the Toaster drawer. Those people using the 2000 Toaster card will locate the AutoHue icon in their Toaster drawer, double-click it, and follow the instructions as they appear on your computer monitor. This simple procedure entails looping the Toaster's Program out (2nd from the bottom) to input 4. As I said earlier, you'll want to use the shortest, best quality cables for both the input and loop cables.

If you get the AutoHue requester every time you boot your Toaster, chances are that either you've never properly performed the procedure, or you possibly have a problem on your hard drive.

AutoHue writes a small file to the drive called HS. This file contains the information necessary to keep your colors looking good. If that file should become corrupt, the Toaster could have problems writing the proper information into it.

Sometimes, after performing AutoHue, instead of the usual "AutoHue Complete" message, the Toaster may come back with the "I need to be AutoHued" message. This usually indicates that there is a problem with the source, or one of the cables. Swapping cables commonly solves the problem.

Many people recognize that after performing these simple tests their Toasters need some fine adjustment. If you follow these simple instructions, you'll be a qualified AutoHue specialist and keep your Toaster output looking great!

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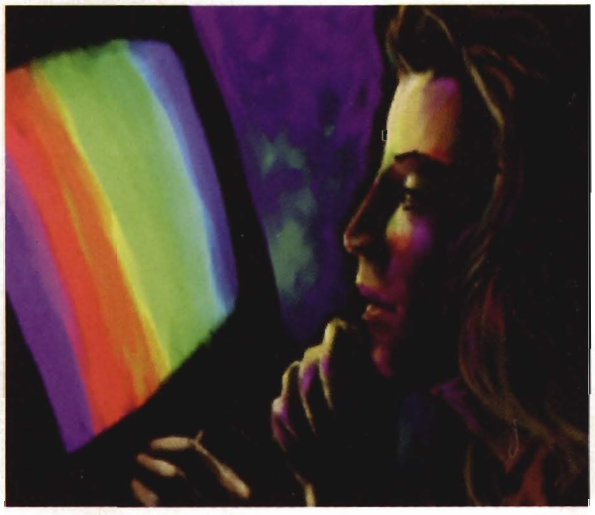

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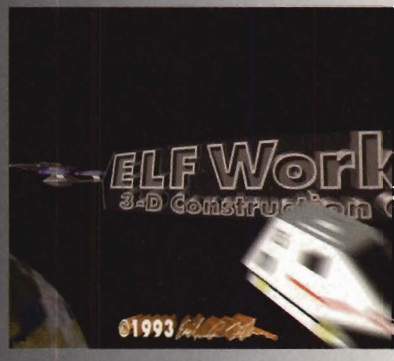

Elf Works

Eric Flom, of ELF Works 3D Construction Company, a full-service 3D modeling and animation company based in Alameda, CA, has previously appeared in Gallery (February/March VTU).

Eric used the Toaster's Modeler and LightWave 3D, and rendered with a 25 MHz '030 CPU. ELF Works offers 3D animation services including reality simulation, morphing, image rendering, and on-site services among others.

The images displayed here are part of Eric's vast image library. Rendering times varied from two to 16 hours.

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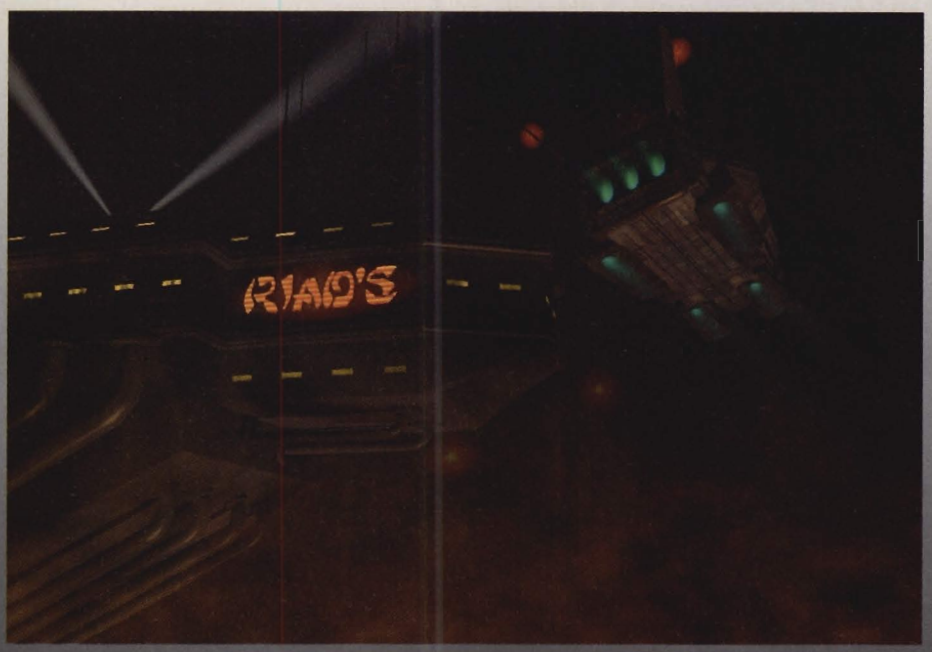
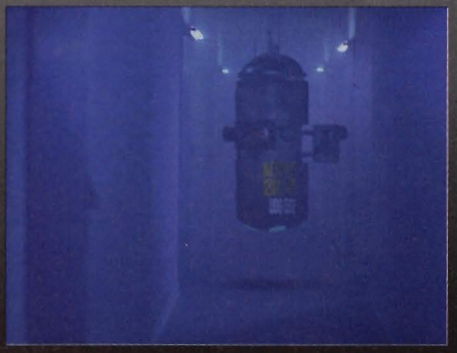


Blak Boxx

Joe Daniels, owner of Black Boxx Computer Graphics, created these five images, clockwise from upper left: Riads, rendered in high resolution; Opening Low-tech (a hovercraft traveling over a seedy part of town); Security Drone, with over a dozen different surfaces; SnowCan1 and 2, from an animation.

Joe Daniels, Black Boxx, (614) 895-8009



Sweetooth, Dining Room

Sweetooth was created by Jody Reimers, (817) 467-3647. It took three hours and 22 minutes to render in LightWave 4000. Below is Dining Room created by Joseph Hassan, (516) 289-9141. The scene has 17 objects, 28 surfaces and nearly 20,000 polygons.

Stockstill

Sara Stockstill created these bee and flower images for a LightWave 3D demo animation, using procedural textures as opposed to image-mapped textures. The Bee took one hour and 27 minutes to render in high resolution with no ray tracing; the Snake Mandela is a still from an animated organic mandela/kaleidoscope; the Flower and Bee required one hour and 43 minutes to render in high resolution.

Sara Stockstill
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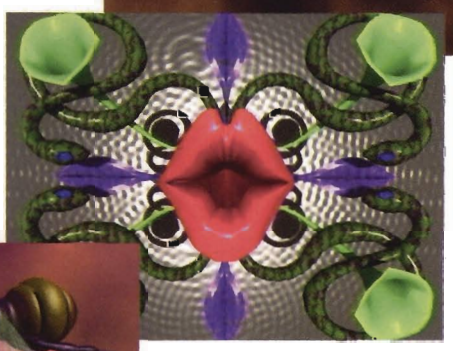

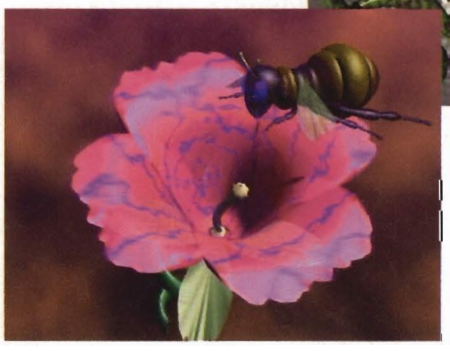

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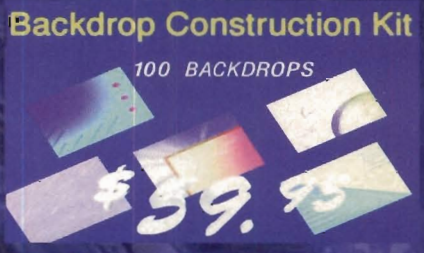

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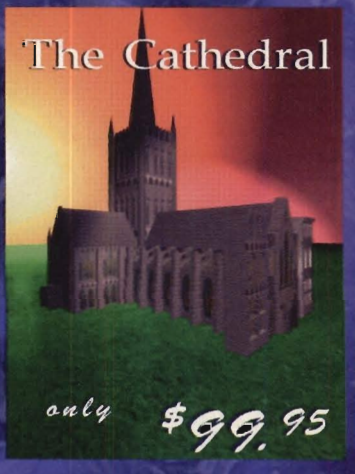

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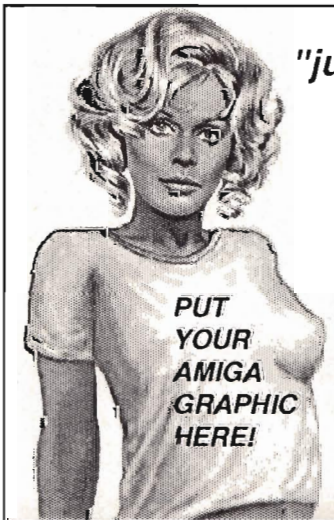

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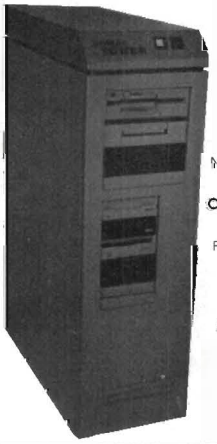

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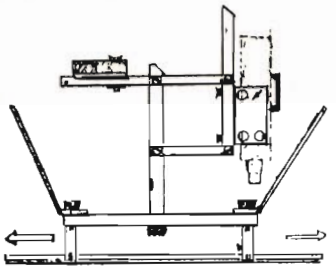

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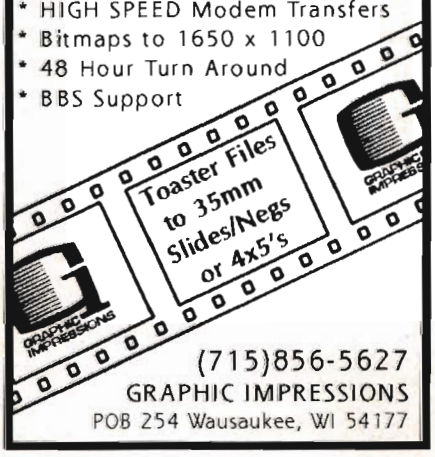

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LAST WORD

By Lee Stranahan

Some people are clueless. They taunt big dogs, they stick their hands in fans to stop the blade—sometimes they even edit magazines. A recent editorial in a high-end, high-profile video magazine proves it.

The editorial said that personal video production is a myth—people just don't want to take the time to make television. If they take the time, they can't afford equipment. If they have equipment, they don't have talent. If they have talent, they'd never make enough money and would die of starvation taking their families down with them. That's right, folks—none of you are really producing video.

It's too hard. It costs too much. You can't make money. You have no talent. It's all an illusion. The camcorder was never invented and the Toaster never really shipped. TV has always been produced by big companies and it always will be. When I snap my fingers, you will awake and remember nothing about video production. Ready? Just relax....SNAP!

What's that? You're still in business? Well, there are some people who'd rather you weren't. There are a number of big video companies who would be happy to see everyone reading this magazine just disappear. They don't want the industry to change, they liked it fine the way it was.

Sorry. Things change, and the writing is on the wall for the video and television industry as we know it. It's already been reported in magazines like *Time*, that in less than five years the landscape will be radically different. That's reality. On some level, the video magazine's editor must know all of this, because the editorial had the same tone that people in horror films have right before they get killed. You've seen this scene before:

INT: THE HAUNTED PRODUCTION HOUSE

Boards creak as the magazine's EDITOR walks backwards down the dark hall. His head nervously moves from side to side as he tries to make out what's in the shadows.

EDITOR

(His voice breaking)

Guys? Everything's going to be all right, isn't it? Guys?

CRASH! A sound off to the right makes the Editor jerk to the left. A bead of sweat appears on his forehead and starts to drip slowly down his face.

EDITOR

(Starting to plead)

This isn't funny! Come on. We STILL control video production! Don't we? We'll just keep buying expensive equipment and everything will be okay? Right? Guys???

This isn't funny...

THUD as an affordable three-chip camcorder smashes into the back of his head. He's knocked to the ground and a cloud of dust kicks up around him. He begins frantically clawing his way down the hall.

EDITOR

Oh no...please don't hurt me...you can't hurt me! You're not real! You hear that?!? YOU'RE NOT REAL! Only network television is real! You can't hurt...

The EDITOR whips around onto his back just in time to see what's about to hit him. A TOASTER 4000 takes his head off.

FADE TO BLACK

If the editor who wrote the *Personal Video Is A Myth* piece was trying to reassure dinosaur companies, then he'd better get his priorities straight. All of the editorials in the world wouldn't keep the readers of "Mainframe Computer Systems" safe from the advent of the personal computer, or save the readers of "Buggy Whip User" from a similar demise.

Here's a true story that illustrates my point. I have a friend named Rex who owns a very nice production facility in Los Angeles. He's got a lot of expensive gear: Beta SP and one-inch decks, a big Grass Valley Switcher, Ikegami studio cameras, etc. He's been in the business for a while, and he knows how to make good-looking video.

A couple of years ago, someone told him about the Toaster, saying (half-joking) that it would put him out of business. Rex wasn't worried. He knew that somebody just getting into video who bought a Toaster, a camcorder, and an inexpensive edit system was no threat to him.

So what's the moral of this story? Pretty obvious: Rex now sells hot dogs, right? Wrong. In fact, Rex is doing better than ever.

Huh? Fooled you with that ending. Rex is doing fine because he's never blinded himself to the way the industry is changing. He's continued to adapt, while other production houses in L.A. have failed because they never caught up with the new realities of the market. By the way, he owns a couple of Toasters, too. (You had to see that one coming.)

Is someone who gets into video today a threat to the TV networks and large production houses? Maybe not today, but they sure could be in a few years. The survivors will be those that embrace change, not fear it. Those that don't keep up won't see the threat until it's too late.

If you're reading this magazine, you're probably the threat. Keep it up.

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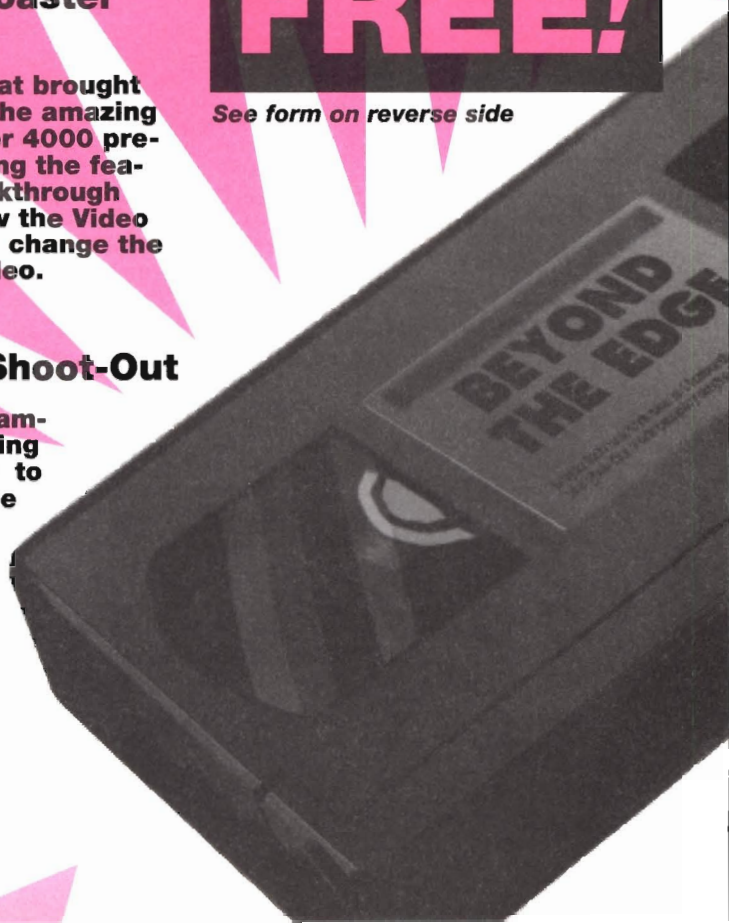

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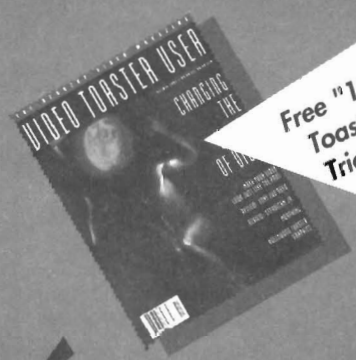

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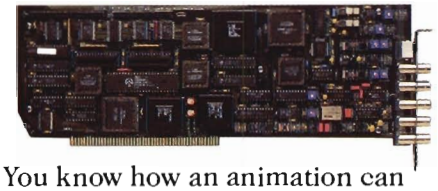

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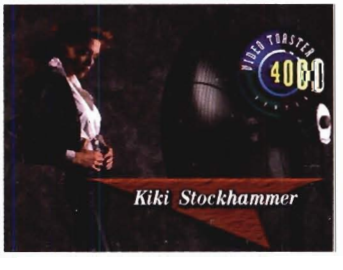

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