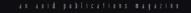
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UIDEO TOASTER USER



THE PERSONAL VIDEO PRODUCTION MAGAZINE

JUNE 1994 • \$3.95 US/ \$5.00 CAN

PROFIT FROM THEIR PERFORMANCE

A BEGINNER'S GUIDE TO LIGHTWAVE 3D HOT NEW PRODUCTS

A ROAD MAP TO THE INFO HIGHWAY

CLEARING UP THE DUBBING DILEMMA



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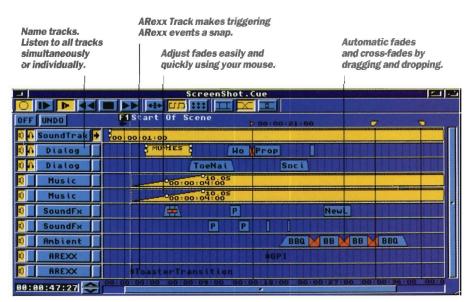


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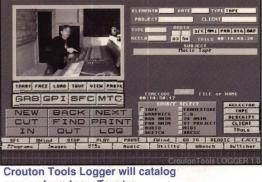


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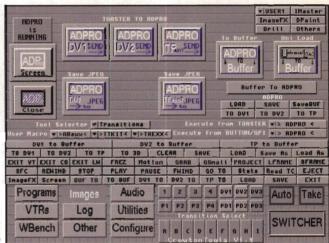


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- Send images back and forth between any supported Image Processor.
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- Grab, send, or process images from the Toaster.

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- Load elements directly from CTLogger to other supported programs.
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VIDEO EDITING SYSTEMS SUPPORTED

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Auno

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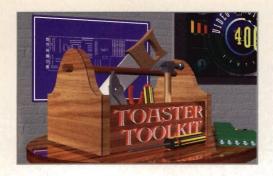
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FOR INFORMATION CIRCLE 126



UIDEO TOASTER. USER

JUNE 1994 ISSUE NUMBER 20



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by Victor & Geetha Ramamoorthy In part two, walk through the final steps in LightWave fundamentals.



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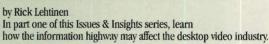
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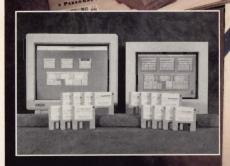
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FOR US



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QUESTIONS AND TIPS

Direct your Toaster-specific questions to John Gross. Direct your general video questions to Rick Lehtinen. Send your tips to Brent Malnack.

NEW PRODUCTS & UPDATES (PRESS RELEASES)

Specific product information or press releases should be sent to the Managing Editor by mail or fax (408-774-6783).

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Please send a query letter with your article outline and qualifications to the Editor-in-Chief.

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Onboard Memory Burst Mode Support	~	V	NO	_		_
Amiga Motherboard Memory Burst Mode Support	~	NO	NO	_	_	. <u></u> .
Avoids using a valuable Zorro-III Slot	V	V	V	NO	NO	NO
Memory Speed much faster than Amiga RAM	V	V	~	NO	NO	NO
Single Products works in an Amiga 4000/030	V	~	NO	~	V	V
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TOASTER TALK

You Are Communicators First

Life Will Go on, Even if Commodore Doesn't





[Editor's Note: Please refer to page 18, for related news story.]

s we put this issue of *Video Toaster User* to bed, the situation at Commodore Business Machines has deteriorated significantly. Shortly after the company announced first-quarter losses and the fact that it was not in compliance with notes due in January to two large creditors, the company's stock took a nosedive.

Trading of the stock was suspended for a brief period and as we go to press, a share of Commodore stock was trading for less than \$1. Rumors abound regarding the fate of Commodore, including that it has already been sold. However, at this point it is unclear what the final outcome will be.

On the surface, the failure of Commodore to turn a profit in the first quarter of 1994 and to meet its obligations with its creditors appears to throw the Toaster market—and by extension the Toaster user—into disarray. With the future being uncertain for the maker of the Toaster host computer, what Toaster owner hasn't asked himself what impact the seemingly endless stream of bad news from Commodore will have on his business?

A Few Facts Worth Remembering

While it's simple to be uneasy about the future of Commodore and the Amiga, there are a few facts worth remembering.

Fact No. 1: First and foremost, you are a video communicator. The amount of stress Commodore's string of woes adds to your life is directly related to how you see yourself. If you are simply an Amiga devotee, you've probably spent more on Maalox in the past few months than at any other time in your life.

However, if you are a video communicator, you recognize the Video Toaster for what it is: a powerful video post-production tool. The Toaster gives you the ability to communicate your messages affordably and effectively. Whether or not Commodore remains viable, you will continue to be able to use your Toaster to communicate your messages for profit.

Fact No. 2: The installed base of Toasters is significant and growing.

While many third-party Toaster vendors are casting a watchful eye on Commodore, most still acknowledge that the existing base of Toaster users is a large, viable market worth supporting. Thus, continued development for the Toaster looks to be a good business decision. NewTek's announcement of the Video Toaster Flyer is a case in point. Not only does the Flyer promise solutions to problems Toaster users have long faced, it also represents a

serious technical and financial commitment to the market—regardless of Commodore's difficulties.

As for market growth, Commodore continues to ship Amigas. Even if there were a short interruption, reports from major distributors indicate that there is an adequate supply of Amigas in the channel to feed demand for a few months.

Clearly, the biggest problem for the continued health of the market is the possibility that the Amiga will no longer be manufactured. However, even in that case, there appears to be a solution.

Fact No. 3: NewTek says it has planned for these contingencies. Although the company has not spelled out what it will do if Commodore ceases to exist, company president Tim Jenison has in at least two different interviews in *VTU* said that NewTek has planned for any eventuality.

Although NewTek has been rather cryptic in describing its contingency plans, it's comforting to know that the company has considered its options and stands ready to implement a plan to nurture the Toaster market regardless of Commodore's problems.

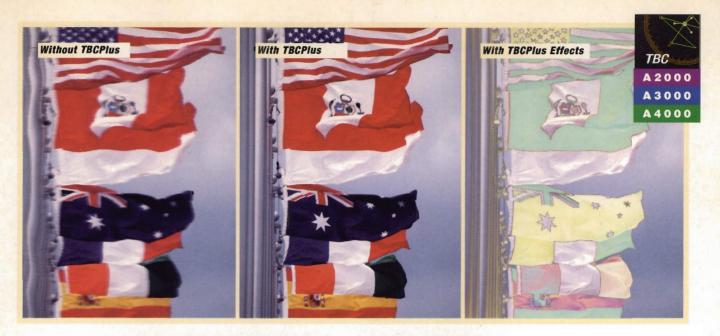
Speculation about what NewTek will do has run the gamut from buying Commodore, which doesn't look very likely, to licensing the Amiga chipset from whomever buys the ailing personal computer maker. For its part, NewTek has remained silent on the issue, not wishing to feed the rumor mill.

Peace of Mind

The danger in writing an opinion piece such as this is that the deadline requirements of the magazine mean that any comment on such a fluid development is likely to be outdated by the time you read it. However, given the importance of the Amiga to Video Toaster users, it is impossible to remain silent on this issue.

Regardless of where Commodore ultimately lands in its downward spiral, you must remember that you—not Commodore, not the Amiga, not even the Toaster—determine your ultimate success or failure in this business. While the Amiga and the Toaster are important tools, it is you who controls your destiny as a professional communicator.

Just as a carpenter must have the right tools to do the job, you too must rely upon your video implements to practice your craft. But an experienced carpenter also knows that there is much more to creating a fine-finished product than his tools. It is his knowledge and skill that allow him to shape his lumber into a fine finished product. So it is with you. It is your know-how and experience that will see you through these times regardless of what happens to Commodore and the Amiga.



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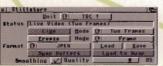
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LETTERSTOTHEEDITOR

Dear VTU:

I read ads about Desktop Images instructional videotapes in your March 1994 issue. They don't have closed captioning for the hearing impaired. They don't follow the Americans with Disabilities Act of 1990. If they use closed captioning, hearing-impaired people will buy some tapes.

Farley M. Turkin Sunnyvale, Calif.

Editor Responds:

Thank you for writing, I've passed along your concerns to Rave Video, distributors of the instructional videotapes.

Dear VTU:

It's important to make the connection between Rick Lehtinen's HDTV piece "The Forces that Shaped HDTV," and Phil Kurz's editorial criticizing the Information Hypeway, "Hitching a Ride," both in your March issue.

HDTV investors realize, but won't admit publicly, that the commercial appeal of high-definition images is unproven. But software engineers, such as the Apple EZTV project, are eager to take advantage of the greater bitstream to the home from the HDTV signals. So broadcast companies are preparing to hedge their bet on HDTV by seeking to use the HDTV bandwidth for a variety of other uses, including the whole range of interactive multimedia, home shopping, banking, communications and the

This would be just one more toss of the dice on the future of TV, except for one thing: HDTV bandwidth is effectively being given to the corporate conglomerates that own the networks, while other bandwidth—IVDS, PCS, etc.—is going to be sold to those with the deepest pockets.

Kurz's editorial correctly notes the Clinton administration is making many independent providers of video content very nervous. This is because of the Clinton/Gore schizoid evasion of the core policy issues in the Great Convergence.

First, what will "universal service" mean, when there will be a continuum of services from plain old voice telephony to the kind of comprehensive, interactive video mail that Video Toaster users dream of? What about the radical differences in regulatory and other constraints on the providers of such services, including phone companies, cable TV operators, direct broadcast satellite companies, and possibly even public utilities? This is the HDTV ace in the hole—it is a free broadcast signal, they say, and nearly everybody has a television.

The most important universal access issue is the box in the house. Before long, anyone with a telephone will be able to get access to broadband, digital interactive services—but you'll also need high-speed modems, fast computing power, addressable cable converters with RISC chips, and/or vast amounts of digital memory to take advantage of the bandwidth. We have never subsidized personal computers, which is why growth in power has achieved escape velocity while the price has dropped through the floor. The Clinton administration continues to bluff on this issue, making vague promises that foster dangerous confusion.

Dangerous because the second issue they duck, as Kurz pointed out, is the First Amendment. ITVR just did an analysis of the commercial potential for erotic content on interactive television that predicts a market from \$3 billion to \$5 billion by the year 2000. Estimates of the gambling market on interactive TV run to the hundreds of billions—with no regulatory changes of any kind.

For all the talk about hooking up schools—a challenge, not a promisefollow the money. The profits that are most likely to justify the huge investments envisioned from this most futuristic technology are some very old vices gambling and erotica. Given the government's huge role hyping the system (not building, mind you), that means the uses of cyberspace will continue to develop political significance. When you have big money, politics and hypocrisy involved in bringing technology to market, independents have a problem.

Only very large companies will benefit from "voluntary" content controls, such as video game ratings. After all, the primary function of the movie ratings for two generations was to deny independent filmmakers access to theaters. HD-TV advocates know that with government support for universal access to broadband services, with a box in every home and with increasing concern about sex and violence in video content leading to cartel-like restrictions on

Correction:

In Gallery, Video Toaster User, April 1994, an incorrect company name was listed for Tommy Gunn, who had five images published in the issue. The correct company name is: Virtual Animation Group. The New York City-based Gunn, who can be contacted at (212) 254-9041, is the company's animation director. VTU regrets the error.

commercial speech, they have three aces in their hand.

Independent producers and people with a Toaster in a home office need to watch the HDTV machinations very closely. It's bad enough that the government is selling spectrum to some and giving it away to others.

It will be far worse if, in giving away the HDTV bandwidth to broadcasters, the FCC allows them to use this freebie to stifle independents.

Paul Donnelly East Coast Editor Interactive Television Repo<mark>rt</mark>

Dear VTU:

I just want to applaud NewTek's technical support staff. I recently had some problems with a DigiDroid, a product NewTek no longer manufactures or sells. Although this is a discontinued product that most Toaster users never heard of. I think Toaster owners will take comfort in the fact that NewTek went to great lengths to find and send me a replacement. Kudos to Jackie and Janeen in tech! Paul Cimino Gulph Mills, Pa.



NEW PRODUCTS

Unbundled LightWave

3D Software Sold Separately

Product: LightWave 3D

Description: 3D Modeling, Animation and

Rendering Software

Price: \$695

Available: June 15

NewTek Inc.

1200 S.W. Executive Drive

Topeka, KS 66615 (800) 847-6111

Fax (913) 228-8001

FOR INFORMATION CIRCLE 01

NewTek is unbundling its popular 3D animation, modeling and rendering software



from the Video Toaster. LightWave 3D is now available as a standalone package for the Amiga.

The full-featured animation software and its companion Modeler will fully support all functions currently available on LightWave 3.1 for the Toaster and is available for NTSC and PAL Amigas.

Audio in the Field

Product: FP32A

Description: Portable, stereo

audio mixer Price: \$1,795

Shure Brothers Inc.

222 Hartrey Ave.

Evanston, IL 60202-3696

(708) 866-2200

Fax (708) 866-2279

FOR INFORMATION CIRCLE 02

Shure Brothers has introduced an updated version of its popular FP32 stereo field mixer, the FP32A. The lownoise performance of the FP32A makes the three-input, two-output field mixer suitable for use with DAT and other digital recording media.



The mixer offers a dynamic range over 100dB, 48-volt and 12-volt phantom power, pop-up pan pots, LED indicators for input levels, output

peaks, limiter action and low battery, the ability to link inputs 2 and 3 into a stereo pair, a mix bus to connect two FP32A mixers and headphone monitoring mode and MS stereo matrix.

Digital Editing

Product: Video Toaster Flyer Description: D2-quality non-

linear editor Price: \$3,995 NewTek Inc. 1200 S.W. Executive Dr.

Topeka, KS 66615 (913) 228-8000

Fax (913) 231-0101

FOR INFORMATION CIRCLE 03

NewTek's Video Toaster production system comes full circle with the Video Toaster Flyer Tapeless Editor. With a single compression board inserted into an Amiga 2000, 3000 or 4000 and integrating two SCSI-2 magnetic hard drives, the Flyer is a simple and dynamic addition to the Toaster. Using a proprietary compression algorithm (Video Toaster Adaptive Statistical Coding), the Flyer's digital video is expected to surpass other compression standards,



such as MPEG, MPEG 2, JPEG and Wavelet, and sustain broadcast quality.

Powerful Stuff

Product: PowerMacros for LightWave3D

Description: LightWave3D

features Price: \$149

CineGraphics 4225 Executive Square, Ste.

La Jolla, CA 92037 (619) 727-5589

Fax (619) 677-3908

FOR INFORMATION CIRCLE 04

CineGraphics introduces PowerMacros for LightWave-3D, which brings a collection of 17 new and powerful macros to LightWave3D. The

Compiled by Douglas C

focus of PowerMacros implement new features streamline functions to modeling, scene creation rendering time. New fea include automated scene ation of true 3D explos and morphing objects a a path.

S-VHS Integration

Product: Edit Desk System Description: Integrate VHS editing system Price: \$7,450

JVC Professional Prod Company

41 Slater Dr.

Elmwood Park, NJ 07407

(201) 794-3900 Fax (201) 523-2077

FOR INFORMATION CIRCLE

IVC has introduced the Desk System, which is a prised of the BR-S800U ing recorder, the BR-S5 player and the RM-G8 editing controller. The S800U comes with bui CTL time-code support. like other control track tors, the Edit Desk's un CTL time code supp frame-accurate addressal The BR-S800U and BR-S9 deliver more than 400 of horizontal resolution digital Y/C separator, th line, cross-talk cancella and two channels of



quality audio with a dyn range that is greater 80dB.

Affordable MII

Product: MII "W" Po Series VTRs

Description: Lower-pr MII line of recorders/play Price: See below

Panasonic Broadcast

& Television Systems Co.

One Panasonic Way Secaucus, NJ 07094 (800) 524-0864

FOR INFORMATION CIRCLE 06

Further recognizing the emergence of desktop video producers, Panasonic has developed a new, lower-cost line of MII component VTRs. The PoWer or W series includes one recorder and two studio players with full NTSC bandwidth and 1/2-inch compo-



nent video. The AU-W35H MII recorder (\$10,400 list) and the AU-W32H MII studio player (\$8,800 list) both feature a three dimensional-type TBC with full-field memory for dropout compensation. The AU-W33H MII studio player (\$10,400 list) offers all the features of its companion units plus an auto-tracking capability for full control of noiseless slow motion and still playback.

Warp Speed

Product: Warp System Description: An expandable parallel processing accelerator Price: \$1,995 for the baseboard; \$1,295 for add-on modules U.S. Cybernetics

310 E. Haley St. Santa Barbara, CA 93101 (800) 292-5001 Fax (805) 730-7332

FOR INFORMATION CIRCLE 07

Based on the advanced Superscalar Imnos T805 Transputer chip, U.S. Cybernetics' Warp System features an expandable parallel processing accelerator. Previous uses for the T805 were mainly in the supercomputing industry. With the Warp System, this

technology is now available for the desktop environment. The Warp System is currently available on the Amiga platform, and is auto sensing in any Zorro II or Zorro III slot.

For the Editor

Product: The Personal Editor Description: On-line/off-line Price: \$645 Nucleus Electronics Inc. P.O. Box 1025 Nobleton, Ontario Canada LOG 1NO (905) 859-5218

FOR INFORMATION CIRCLE 08

Fax (905) 859-5206

Nucleus Electronics Inc. recently introduced the Personal Editor, a system that's ideal for both on-line and offline editing. Standard features include B mode auto-assembly, A mode edit creation, and SMPTE time-coded clip logging in any of nine separate lists with an unlimited number of reels per list. Many of the Personal Editor functions can be controlled through its ARexx port.

Transitional Stage

Product: Pro Wipes Volume 1 Description: Toaster transitions and effects Price: \$129.95 Matrix Productions & Design 1111 Dover Street N.E. Cedar Rapids, IA 52402 (319) 378-9648

FOR INFORMATION CIRCLE 09

Matrix Productions & Design introduces Pro Wipes Volume 1. a six-disk set of 75 Toaster transitions and effects that can be added to any Video Toaster 2.0, 3.0 or 4000. Pro Wipes are not animation; they are real Video Toaster format transitions that work like original Toaster wipes. Pro Wipes includes 33 live (actor) action wipes and 42 assorted 3D style wipes, matte wipes, softedge wipes, 16-level alpha effects, and the company's 24-bit effects that work on any Toaster system. Pro



Wipes covers categories such as weddings, sports, dance, finance, music and a large variety of general purpose wipes that can be used in a multitude of video applications.

Etch-a-Sketch

Product: VertiSketch Description: Data capture device Price: \$123 Science Accessories Corp. 2 Research Dr. P.O. Box 825 Shelton, CT 06484 (203) 925-1661 Fax (203) 929-9636

FOR INFORMATION CIRCLE 10

Science Accessories Corp. (SAC) and Blevins Enterprises recently introduced Verti-Sketch, a software package which allows the rapid and accurate capture of data using SAC's GP-12 3D digitizer. Using the digitizer with VertiSketch makes it possible to digitally reproduce physical objects directly in Modeler 3.0 for use in LightWave's rendering and animation software. Complex objects can be reproduced quickly by sampling points with SAC's 3D digitizer from the objects designated for input.

Cohesiveness

Product: Composite Studio Description: Image-compositing program for ToasterPaint and OpalPaint Price: \$199.95 Dimension Technologies 2800 West 21st St. Erie, PA 16506 (814) 838-2184 Fax (814) 838-8521 FOR INFORMATION CIRCLE 11

Product: Bars&Pipes Professional Version 2.5 Description: Upgrade to Version 2.0 Price: \$69.95 The Blue Ribbon Sound-Works Ltd. Venture Center 1605 Chantilly, Ste. 200 Atlanta, GA 30324

Fax (404) 315-0213 FOR INFORMATION CIRCLE 12

(404) 315-0212

Blue Ribbon SoundWorks has announced the Version 2.5 upgrade to its Bars&Pipes Professional music and multimedia environment for the Amiga. Version 2.5 contains nearly 50 features and enhancements for MIDI musicians and multimedia authors. The upgrade also provides the ability to loop any number of measures on all tracks simultaneously and split one track into several containing only one pitch.

Dimension Technologies has released Composite Studio, a powerful user-configurable, image-compositing program. By taking control of ToasterPaint, Composite Studio allows the user to quickly and easily combine, resize and arrange an unlimited number of framestores or RGBs. Each image can be processed in a number of ways, including emboss, negative, black and white and pixelized. Images can also be surrounded with a multilevel bevel or one of 20 frame styles. Composite Studio is currently available for ToasterPaint and OpalPaint.

Super Nova

Product: NovaY/C Max
Description: Image enhancer
and Y/C decoder/encoder
Price: \$1,000
Nova Systems Inc.
50 Albany Turnpike
Canton, CT 06019
(203) 693-0238
Fax (203) 693-1497

FOR INFORMATION CIRCLE 13

Ideal for sharpening the picture quality from the Video Toaster, the NovaY/C Max is an image processor that features digital horizontal and vertical detail enhancement. A three-line, adaptive digital comb filter eliminates dot crawl, cross luma, cross color artifacts and provides 6dB of chroma noise reduction. The decoding and encoding functions convert composite video to wide-band Y/C and Y/C to wide-band composite video. Completely Toaster compatible, the Y/C Max either plugs directly into the Amiga computer or is available in a standalone desktop version.

Across the Spectrum

Product: AutoPaint
Description: Controls ToasterPaint
Price: \$149
A+ Development
241 S. Frontage Rd., Ste. 32
Burr Ridge, IL 60521
(708) 654-0321

FOR INFORMATION CIRCLE 14



A+ Development introduces *AutoPaint*, which features 25 point-and-click screen templates that automatically composite pictures in just a few keystrokes when using framestores and 24-bit RGBs or IFFs in ToasterPaint. Auto-

Paint's multi-screen templates allow users to create builds screen-by-screen, and there's plenty of room to add text. Features include 25 auto layout templates, a simple point-and-click interface, adjustable drop shadows, flash directory technology, auto multi-file rendering and a Toaster utility accessory.

Time Sensitive

Product: LX-200 Camcorder Description: Hi-Band 8mm camcorder

Price: \$3,200; \$4,099 w/lens

Canon

One Canon Plaza Lake Success, NY 11042 (201) 816-2900

Fax (201) 816-9702

FOR INFORMATION CIRCLE 15

Following in the tradition of the Canon LX-100, Canon has released the LX-200 Hi-Band 8mm camcorder, which features RC Time Code with index, data coding, improved digital special effects and the VL Mount System. The LX-200 is the first Canon camcorder to offer RC Time Code with data and index search code functions. RC Time Code is automatically recorded as digital data on the P-V guard, positioned between the video and PCM audio tracks of the 8mm format. RC Time Code can also be added to a tape after recording. Among the digital special effects featured by the LX-200 are closeup and slow shutter.

Improved BC-Metal

Product: BC-Metal videocassettes

Description: Betacam SP vid-

eocassettes Price: \$40 to \$125

3M

3M Center Building 223-5N-01 St. Paul, MN 55144-1000

(612) 736-2549 Fax (612) 737-5583

FOR INFORMATION CIRCLE 16

3M has improved its line of BC-Metal videocassettes with a



tape design that reduces RF loss, especially in camcorder applications. The videocassettes also feature a consistently low-dropout metal-particle tape for excellent picture performance. The BC-Metal videocassettes are complemented by the 3M Anti-Stat system, a protection system designed to lessen debris attraction and lower dropout rates. The videocassettes, which feature four packaging options and an ABS-plastic shell for durability, are offered in tape lengths ranging from five to 90 minutes.

To Digital

Product: V4228 2D Digital

Decoder

Description: Composite de-

coder

Price: \$5,700 Vistek Electronics Wessek Rd., Unit C Bourne End, Bucks SL8 England 44 0628 531221

Fax 44 0628 530980

FOR INFORMATION CIRCLE 17

Vistek Electronics has introduced the V4228 2D Digital Decoder, a composite decoder for analog, serial and parallel digital applications. Vistek's patented Varicomb algorithm is acknowedged as the most transparent process for transferring from the composite to component domain for real pictures, eliminating the artifacts of cross color and cross luminance without sacrificing resolution. The configurability of the V4228 permits selection by the interfaces required. The product was designed for both PAL and NTSC operation.

TBC for PC

Product: PC-TBC

Description: A PC-based plug-in TBC/frame synchro-

nizer Price: \$665

Hotronic, Inc. 1875 S. Winchester Blvd. Campbell, CA 95008

(408) 378-3883 Fax (408) 378-3888

FOR INFORMATION CIRCLE 18

Hotronic has released the PC-TBC, a PC-based plug-in TBC/frame synchronizer that is compatible with IBM or Amiga computers. The PC-TBC is built-in with an adaptive digital comb filter to provide wide bandwidth in composite signals. It also features freeze frame/field, strobe and genlock capability. The PC-TBC can be upgraded to PC-TBC-Y/C, which provides Y/C input/output and transcodes between composite or Y/C. The upgrade price is \$735. A remote is also available for the PC-TBC for an additional \$100.

Accelerator System

Product: The Cyberstorm

series

Description: A modular acceleration and expansion system

Price: \$695-\$1,995

Advanced Systems & Soft-

ware

1329 Skiles St. Dallas, TX 75204 (214) 821-7776

Fax (214) 821-3464 FOR INFORMATION CIRCLE 19

Advanced Systems & Software has added to its line of Amiga 4000 accelerators and expansion boards with the modular Cyberstorm system. The Cyberstorm system includes a carrier board, a CPU module and a memory board, which can be populated with up to 128MB of fast-RAM. The system is available in three versions, including the Cyberstorm '040/25 (\$695), the Cyberstorm '040/40 (\$1,495), and the Cyberstorm '060/50 (\$1,995).

KE YOUR TOASTER SIZZLE



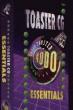
DESKTOP IMAGES INSTRUCTIONAL VIDEO TAPES THE FAST AND EASY WAY TO LEARN THE VIDEO TOASTER

VIDEO TOASTER 4000 & 3.0

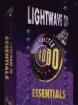


A step-by-step guide to the Video Toaster's digital video effects set-up functions, ChromaFX and luminance keyer.

90 minutes



Complete instruction to TogsterCG's powerful text canabilities including font sizing, color brush loading, background & layering options.



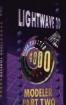
Discover the power of LightWave as basic 3D animation is explored, Learn scene creation, key framing, design and editing techniques for amazing animations.

120 minutes



Create & modify basic shapes, making polygons with the freehand draw tool, using layers, creating text objects and assigning surfaces.

100 minutes



Change the shape and aspect of objects with modify tools, bending titles and logos, creating terrain using rail extrude, clone and lathe to create complex objects.



Professional surface and texture techniques, creating increasing render speed by selecting the proper surfaces for your objects. 115 minutes



Twist, bend and deform objects in layout. Add incredible motion capabilities to your objects for realistic action effects.

100 minutes



Give your animation depth and realism with camera placement & effects, lighting selection, envelopes and animation techniques.

120 minutes

LEE STRANAHAN



Lee has taught thousands through his national seminars and published articles. In this professional video tape series Lee offers the tips & tricks that provide invaluable Toaster Power.

VIDEO TOASTER 2.0



A comprehensive guide to the Video Togster's switcher and special effects, maximizing memory usage, ChromaFX transitions, and combining effects.

85 minutes



An easy step-bystep guide to the Video Toaster's character generator, font and palette controls, text file loading, and ToasterPaint CG backgrounds.

59 minutes



Discover the full potential of ToasterPaint's brush modes, warping & transparency controls, spare page feature, undo and redo functions and powerful keyboard equivalents.

62 minutes



graphics techniques with multi-layered backgrounds, rub through and flood fill, textured TogsterCG titles. creating embossed borders and backgrounds.



Learn the basics of layout & renderer, loading objects, camera placement, motion envelopes, creating keyframes, quick rendering tips and animating to tage.

120 minutes



Create three dimensional dimensional objects using point manipulation, creating polygons, lathing & extruding, defining surfaces and creating complex objects.

MODELER 90 minutes



SURFACES

by texture mapping applying images, using fractal noise, bump mapping, ray tracing, image capturing techniques & time saving tips.

90 minutes

into 3D objects to create moving text graphics and flying logo animation, plus step-by-step instruction Pixel 3D Professional.

FLYING LOGOS 90 minutes

Convert printed logos

Each Tape is only

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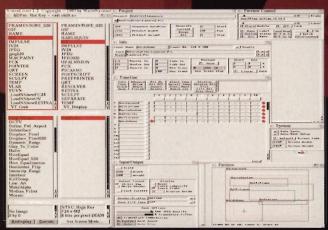
CALL TODAY TO ORDER:

1-800-37*7*-1

RAVE VIDEO P.O. Box 10908, Burbank, CA 91505 Phone (818) 841-8277 FAX (818) 841-8023

VideoToaster, ToasterCG, ToasterPaint and LightWave 3D are trademarks of NewTek, Inc. Desktop Images is a trademark of RAVE VIDEO

The Next Wave of Video Tools for your Toaster System MultiLayer - Digital Layering



MultiLayer for ADPro is a compositing/layering tool for video professionals & artists using ASDG's ADPro program as a compositing engine. MultiLayer will also be available for ImageFX with the same abilities listed here.MultiLayer improves upon ADPro's already impressive array of compositing functions by providing an extremely powerful interface for layering, compositing and editing anything from simple images to complex sequences of moving images. MultiLayer gives you the ability to perform digital compositing with an unlimited number of layers.

Features include:

A Timeline interface that provides user-friendly control of all aspects of compositing and editing. A Preview interface that provides a real-time representation of all layers/images with positioning information and size. The preview can be animated and modified with a VCR-style interface. Image



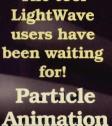
The first Particle Animation system for LightWave3D 3.0

Now Animators can include "High-End" procedural animation effects to their work. Do in minutes what would take days to set up! Particles can bounce with real world behavior with gravity simulation. Multiple point gravity wells allow bending and directing the stream, flock or swarm of particles. Complete with Wind, Gusting, Flaking and Swirling controls adjustable per axis. User-Definable path allow particles to fall off a moving target, allowing for sparklers, fuses, wands, multi-hit explosions etc. Particles can be replaced by multiple objects allowing for flocking. swarming, arrays, etc. Source position allows you to setup initial state from the vertices of any model! Apply a rotation on any axis procedurally with a powerful expression evaluation feature. Air Drag control allows particles to fall

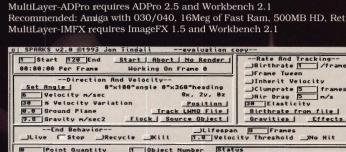
like snow or rocks. Flocking allows a source object to define initial position of objects and a motion file to follow. Objects are held to their positions with adjustable "springs" allowing external forces to deflect paths individually, yet always returning to their home position. Fade envelopes can be built on the fly with fade in and fade out controls. Displacement map support will give motion to all your objects at once. You have complete control over:

- Origin at each frame
- Gravity Bouncing on ground plane
- Wind, Gusting, Flaking, Swirling behavior
- Multiple Local Gravities

The tool LightWave users have been waiting for!







representations can be dragged and positioned quickly and easily. Several ty

of Compositing/Digital Keying are supported including Zero-Black ke

Luminance keys, Chroma keys and Alpha keys. All compositing is performed

the digital domain using a full 32Bits of data for D1 quality . No lossy im-

compression techniques are used, so images with any number of layers are

crisp and clear as they were in the original images. Layers can be faded in a

out to variable transparencies at variable rates of speed. Layers can appear disappear and move around anywhere. All Layers are completely adjustal

Movement of images/layers can be anything from linear to smooth w adjustable acceleration and deceleration. Disolves on any layer for any durati

> Standard Particle and Real World Kinematic Animation System.

Q Start | Hedity Q Off | Lever O Button Status O X A Y | Sotio



Image from Robo Jr. by Dale Myers made using Spa

Rotations - evaluate user-defined expressions!
Spacing - user-defined birthrate

- Quantity partcle/models
- · Multiple Replacement Objects
- · End Behavior stop, recycle, kill-
- Direction interactive GUI
- Source and Target positions set start positions l models vertices
- Sprays, Streams, Fountains
- · Sparklers, Flocks, Magic Wands



ARPENGINE

The only Expansion Device you need for your Video Toaster/4000 that provides High-Speed 040 Acceleration, up to 128 MegaBytes of Local 040 Burst Memory and the Fastest SCSI-II Controller Available! Why? Because all of this expansion is on a single board that installs into the CPU slot - NOT a Zorro III Slot!

The Warp Engine Series of Accelerators is a breakthrough in Amiga Expansion design. The Warp Engine comes in three versions for the Amiga/Video Toaster 4000 and three versions for the Amiga 3000.

The 4000 Series:

The 28MHz Warp Engine comes with an 040 socket, four SIMM sockets and the NCR SCSI-2 Controller. This is a very cost effective entry because the A4000 already has an 040 chip installed and 4 to 16MB of FastRam on the Motherboard. You simply remove the CBM CPU card and then remove the 040 chip and install this onto the Warp Engine. You can also remove the Memory from the Motherboard and install it onto the Warp Engine. This produces a 28MHz 040 Accelerator with 4 to 16MB of High Speed Local 040 32Bit Burst Ram and the fastest SCSI-2 Hard Disk Controller available for the Amiga. You do not need to purchase more FastRam immediately. The Warp Engine provides all of this expansion without using a single Zorro Slot! The 33MHz and 40MHz versions include the 040 Processors. The 33MHz board requires 70ns Ram to work at its highest speed and the 40MHz board requires 60ns Ram although you can insert wait states to use slower Ram.

The 3000 Series:

There are three versions available for the A3000 which in all aspects are the same as the 4000 except that the Ram expansion is 64 Megabytes.

All Warp Engines are fully upgradable to 40MHz by just changing the CPU and the Clock Oscillator! The Warp Engine uses standard 72 Pin SIMMs and allows the use of up to four different size SIMMs at the same time (for example you can have a 4, 8, 16 and 32MB SIMM installed together). Unlike other companies that require the use of custom SIMMs that are only available from them, and/or they only allow the same size SIMMs to be installed making it necessary to remove your old SIMMs before you can add larger SIMMs. The NCR53C710-1 SCSI-II Fast 32Bit DMA Bus Master Processor makes it the Fastest available with its' direct connection to the 040 chip - this provides up to 10MB/s Transfers and allows the 040 to retain 90 to 98% of its' Processing Power! Zorro III Memory boards cannot even reach 70% of the speed of the Motherboard Memory while Warp Engines Local 040 Burst Memory is many times faster than the Motherboard Memory!

Hardware Features

- Very High Speed Local 040 Memory Bus with full 040 burst access.
- NCR 53C710 40MHz SCSI-2 Fast Controller connected directly to the 040.
- 32Bit SCSI host bus DMA interface supporting burst to and from the RAM
- Supports 10MB/s SCSI Transfers.
- Full DMA allows the CPU to still have 90% Processing Power while doing Transfers.
- No Zorro III DMA Problems.
- Fully Autoconfigurable with optional Autoboot capability for SCSI.
- 32Bit Ram Expansion Up To 128MB.
- Uses Standard 72Pin SIMM Modules.
- · Allows Mixing of Ram Module Sizes.
- Supports 4, 8, 16, 32 MB SIMM Modules.
- Uses the Memory that is installed on the Amiga 4000 MotherBoard.
- Supports DMA access from Zorro III Devices to onboard Memory.
- A3000 Version Supports up to 64MB of 32Bit Memory.
- A3000 Engine will clock 16MHz MotherBoards at 25MHz.

Compatibility

- Compatible with the Video Toaster, Retina Z-III and OpalVision.
- Works in all 3000, and 4000 series Amigas.
- Requires AmigaDos 2.1 or greater.

Warp Engine 40

- Full Two Year warranty on Accelerator card.
- Warp Engine 28 \$899.95 suggested list.
- Warp Engine 33 \$1599.95 suggested list.

\$1899.95 suggested list.

Features	WarpEngine	GVP-040/40	Excalibur	FastLane	4091	DKB3128
28MHz, 33MHz, 40MHz Versions	YES	NO	NO	NO	NO	NO
28MHz Upgradable to 33 and 40MHz	YES	NO	NO	NO	NO	NO
Expandable onboard to 128Megabytes	YES	NO	YES	YES	NO	YES
Built in SCSI-2 Hard Disk Controller	YES	NO	NO	YES	YES	NO
Uses industry Standard SIMM Modules	YES	NO	YES	NO	NO	NO
Uses any Combination of SIMMs	YES	NO	NO	NO	NO	YES
Allows use of the Memory from the Amiga	YES	NO	YES	NO	NO	YES
Uses a Zorro III slot	NO	NO	NO	YES	YES	YES
Memory Speed Much Faster than Amiga Ram	YES	YES	YES	NO	NO	NO
Works in Amiga 3000	YES	YES	NO	NO	Maybe	NO
Zorro III DMA or Buster Problems	NO	NO	NO	YES	YES	

MacroSystem Development

TOASTER TIMES

Samsung Potential Commodore Suitor

Phil Kurz

Commodore International has entered discussions with South Korean electronics manufacturer Samsung about purchasing the assets of the maker of the Amiga personal computer and CD32 game machine.

According to a report from Channel 4000, an independent Toaster dealer news source, Samsung met with both Commodore and Prudential Bache, a large Commodore creditor, about the possibility of buying the company in early May.

On May 5, NewTek president Tim Jenison flew to West Chester, Pa., to hold discussions with Commodore and a large Asian electronics company, said NewTek director of marketing Donetta Colboch. Colboch would not confirm or deny that the Asian concern was in fact Samsung.

Commodore International Ltd. announced in late April that it was ceasing operations. The Associated Press reported that the company had transferred its assets to trustees for the benefit of the company's

creditors and that Commodore Electronics Ltd. was being voluntarily liquidated.

For the period ending Dec. 31, Commodore posted a loss of \$8.2 million on sales of \$70 million. In the same period in 1992, the company lost \$77.2 million on sales of more than \$237 million.

Jenison would not elaborate on his meeting in West Chester. However, he offered his views on the demise of Commodore. "A very interesting thing happened when the bad news at Commodore broke," he said. "A lot of big companies started circling Commodore like buzzards eying the company. These are people who wanted set-top cable boxes, people who designed Amiga computers into expensive graphics equipment people who wanted to exploit the CD video game market. In general, they saw the Amiga as a way to jump start the information super highway.

"When Commodore announced liquidation," he added, "these companies be gan to pounce. We've had talks with a number of them and it is clear that the Amiga technology is still very much alive, and that very quickly there may be much more capable hands in control of the Amiga computer."

Hollywood Film Company Subcontracts Electric Zebra; New Logo Defies Tradition

Josh Moscov

Golden Films recently subcontracted Electric Zebra to create a new corporate logo, generated with computer animation, for the company's video titles and television shows.

According to Golden Films president Diane Eskenazi, the logo will be placed at the end of the company's releases that are distributed by Sony to more than 83 countries. It will also be used on *Hip Hop Street*, a children's educational show currently in production in association with PBS Channel 13 in New York.

The character animation, composed of colorful, jovial letters with human traits, marks the first time that Golden Films has opted for computer-generated art in their productions. The company specializes in feature-length adaptations of children's classics and original films that have relied exclusively on traditional cel animation.

Electric Zebra animation director Gina DiBari said that Eskenazi requested the characters to be very animated with upbeat personalities since Golden Films' releases are targeted to a young audience. "She [Eskenazi] wanted it to be fun and [wanted] the letters to be dancing and in a rainbow color scheme." For additional guidance, Eskenazi supplied Electric Zebra with several cel animation frames of eggs with feet and other hand images created by animator Len Smith (a former Disney animator and designer of *The Mighty Ducks* mascot). DiBari used them as a visual reference while working in Modeler.



A frame from the new, computer-generated Golden Films logo.

With several years of Toaster experience on a wide variety of projects, DiBari explained that she and partner H.W. Parker have developed a unique production process that combines desktop video technology with their own (sometimes unorthodox) approaches to generating creative ideas and concepts in their projects.

DiBari said each of the characters was given a different amount of animation frames, so the entire letter chain would not look like an animation loop. For instance, the Dancer, which had four different morph-target objects, moved over 54 different frames. "So every 54 frames, if you looked at

Producer Introduces Toaster to Nature

Douglas Carey

Steven Spielberg has nothing on Betty Wills, whose lead character in her latest directorial outing was a 150-pound river fish with a long, flat, paddlelike snout.

It was familiar company for Wills, an independent producer who specializes in nature documentaries and educational programming for public television. Her latest release, *The Paddlefish ... An American Treasure*, earned Wills a North America Film/Video Award from the Outdoor Writers Association of America and an award from the Texas Outdoor Writers Association for special outdoor programming.

The Ft. Worth, Texas-based director also served as writer and producer for the one-hour documentary, which is slated to run nationally on PBS beginning this July. The special was first released last year on video.

"It's education in an entertaining way," said Wills, who streamlined her production for the paddlefish special to include only a 3/4-inch ST recorder and the Video Toaster. "The [viewers] don't know they're being educated because they're too busy being entertained."

Wills was also honored recently by the American Horse Shows Association for A Celebration of Horses: The American Saddlebred, a documentary hosted by William Shatner that's currently running on public television.

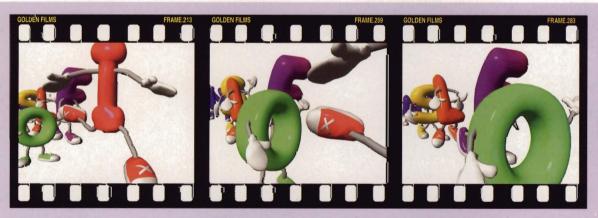
For the special on saddlebreds, Wills off-lined her entire production, saving both time and money.

"[Using the Toaster] brings your profit margin up quite a bit," Wills said. "It's also good for off-line work. If I shoot on Betacam and I'm doing something that you can't slip with 3/4-inch, I'll use this setup for off-lining and it gives me a real good perspective for what the finished product is going to look like."

Wills, whose career has ranged from magazine publishing to videography, plans to expand her use of the Toaster in future productions.

"I am practicing the animation part of it," said Wills, who is currently working on a 12-part series about horse ownership. "I really would like to get good in LightWave and Modeler."





Three lively frames from the Golden Films animation are shown at left. Bones and morph targets were used to give the characters fluid movement and personality.

frame number one and frame number 55, they were exactly the same. That's the loop. You don't want each of the letters looping at the same time. It helps give a more human, imperfect look."

The original objects were created in Modeler and combined two different fonts. "What we wanted in the end result was something that was round and lumpy and misshaped. So we ended up picking balloon-like font styles and created the objects out of text from the objects menu in Modeler," DiBari said.

Now having flat, polygon objects, DiBari connected the points within the objects to build spline cages. When constructing them, she used the sketch tool so that the objects would be uneven and reminiscent of traditional claymation. A combination of bones and morphs also added to the complexion.

Instead of using single-frame transfer in post-production, Golden Films decided to experiment with real-time transfer by using Digital Processing Systems' Personal

Animation Recorder (PAR) to a D2 master. DiBari said she was successful by transferring through the composite out on the PAR to D2. "We saved hours of transferring animation to tape and also saved a lot of money by using the PAR. In this case, the PAR output was superb, certainly worthy of broadcast."

The quality that DiBari was able to attain from real-time transfer satisfied Eskenazi, who has been working for more than a decade with traditional cel animation in film. "For the amount of time she had, she did a very good job," Eskenazi said. "What's nice about the Toaster is that it's quick ... When you have to deal with an overseas animation house, it can take much longer."

Eskenazi also noted that additional projects between Electric Zebra and Golden Films are currently being negotiated.

Golden Films is based in Beverly Hills, Calif.

Located in Palo Alto, Calif., Electric Zebra can be reached at (415) 327-6574.

DEAR JOHN

Fiscally Speaking

How to Prioritize and Stay within Your Budget



by John Gross



receive several questions each month from beginning Toaster users looking for the best way to maximize their budget. Many problems can be solved by simply planning ahead.

I currently help produce a television broadcast at my school. It's a small production, but we still take it seriously. I love broadcasting and hope

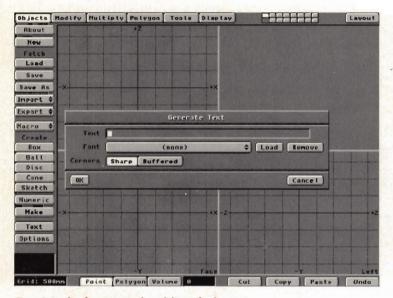


Figure 1: Loading fonts is as simple as clicking a few buttons.

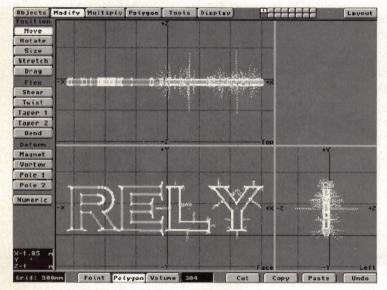


Figure 2: To kern text, select the letters and use the Move tool.

one day to work at a television station. I watched seaQuest DSV and loved the effects. I looked at the credits and found they were produced with the Video Toaster.

Immediately, I decided to find out as much as I could about the Toaster. I went to my local bookstore and found a copy of *VTU*. Now here's where the problem comes in: I'm looking for a basic system that will do basic things. *VTU* has ads for hundreds of products. Do I really need these products? Can I produce decent text and effects with just an Amiga and a Toaster?

What I want to do is overlay text and create good computer animation. I know absolutely nothing about the Amiga or the Toaster. What is this product called LightWave? Is this totally separate from the Toaster? Can Toaster images be transferred to VHS tape without special equipment? Finally, I would not like to spend more than \$2,500. Is this possible?

Timothy Tillman
Assistant Director of the Raider Network
Mechanicsville, Va.

You do not need all of the advertised products in order to use a Toaster system. If you are going to use a Toaster for basic operations, you may not need any of them. Like any computer product, they are designed for specific applications and/or needs.

Using the ToasterCG, you can produce more than adequate character generation (text). ToasterPaint allows you to create nice-looking graphics, and hooking up the output of your Toaster to the input of a VHS machine allows you to record text and still frames to your recorder.

LightWave 3D comes with the Video Toaster along with ToasterCG and ToasterPaint. They are simply software programs that you can access from the Toaster's main screen. LightWave is the software used on seaQuest. It is also used on shows such as Babylon 5, Star Trek: The Next Generation and RoboCop.

There are a number of ways to record LightWave output to tape. If you happen to own a Toaster 4000 (in an Amiga 4000), you can play back LightWave animations in real time. The more RAM in your machine, the more you can play (18MB of RAM allows about five to six seconds of playback). This playback is limited to 256,000 colors and lower resolutions, so it may not be suitable for every application.

If you have a Toaster in an Amiga 2000 or 3000, more equipment is required to get your LightWave animations to tape. You need a single frame-accurate recording deck and some type of single frame controller. Alternatively, you could use a Digital Processing Systems (DPS) Personal Animation Recorder or Sanyo's GVR-S950. Either way, you

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DEAR JOHN

need to spend at least \$2,500 (more for the single frame-accurate deck).

Finally, your \$2,500 budget is cutting it close. For that amount, you could expect to buy a used Toaster system in a 2000 computer. A Toaster 4000 in an Amiga 4000 would run between \$3,500 and \$4,000. If you wish to lay text over images on videotape that feeds into the Toaster, you need to buy a time base corrector (TBC) that allows you to connect the tape source into the Toaster. Expect

to spend at least \$1,000 on a TBC. However, if you wish to overlay text on a live-image feed from a camera, you would not need any additional equipment (except, of course, the camera).

I have a Video Toaster, and I am going to throw it in the bathtub while plugged in and toast myself. I spent all my money on it and have had trouble getting a few simple questions answered. This is my system:

Toaster 4000 with 18MB of RAM, 120MB hard drive

- 2 DPS TBC III
- 1 DPS chassis for TBCs
- 1 Maxtor 128MB hard drive
- 1 68040 accelerator
- 1 DPS 2000 machine (I don't use it since I don't have editing equipment)

Pixel 3D

Art Department Professional Imagine

Here's what I want to do:

- I would like to load fonts from the CG into Modeler. I need to spell "RELY." There's too much space between letters: How do I kern? After this, I want to take it into Layout and animate
- 2. I also need to get my animation to a VHS tape. I also heard that a SyQuest drive is a broadcast-recording device. I want to take a segment of animation to an editor and insert it in a project I have done. I have asked others, but most do not use LightWave at all. A dealer told me about recorders and image stabilizers and record controls. He couldn't exactly tell me what the pieces did and what the end result would be.

Franco Frassetti Staten Island, N.Y.

Loading fonts in Modeler is pretty simple. First, click on the Text button (Objects menu), then select the Load button on the right hand side of the Text requester (Figure 1). This should open a requester that looks at the ToasterFonts directory on your hard drive. You can use the Parent button in this requester to revert to the previous directory. After selecting a font, you are returned back to the Text requester. You can now either type out the text you wish to generate in the text field or use the Text macro (Objects menu) to create the text.

In order to kern the fonts in Modeler, understand that once the fonts have been loaded and typed, they become objects. They are no longer really fonts. Because of this, you cannot simply kern them; instead, you need to move the individual letters around.

To accomplish this, simply select all of the polygons that make up the letters by pressing the Polygon button at the bottom of the screen and circling the letters with the right mouse button. Once the letters are highlighted (Figure 2), you can select the Move button

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(Modify menu) and move them where you wish. Hint: Hold down the Control key after selecting Move to constrain the movement along the first axis.

To get your rendered animation to tape, you may need more equipment. One way to do this using your existing equipment is to create a Toaster 4000 animation of your scene. Before rendering your animation, select Save ANIM File from the Record panel in LightWave. The requester that appears should be looking into your framestore directory (if not, go there). Create a name in framestore format (i.e., ###.FS.Animname) for your animation. Alternately, you can select Easy ANIM from the main Layout screen, and LightWave takes care of this for you. After you enter a filename, select Render, set your first and last frames and click on Automatic.

The resulting animation is saved to your framestore directory where you can load and play it from the Switcher. Connect a deck to the Toaster output and press Record while you play the animation.

The other way to record an animation is to use a single frame controller and a frame-accurate recording deck. While this is more complicated, higher-quality animations can be achieved. Basically, you need to render your LightWave animation frame by frame and record those frames to a deck. There are many options as to what types of decks and controllers work, and a reliable Toaster dealer should have the information you need.

Finally, a SyQuest drive is not a broadcast-recording device. It is simply a removable medium (hard drive) where you can store data and take it elsewhere.

What does AGA mean and what does it do for the computer? Most importantly, can AGA chips be installed into an Amiga 2000 with Toaster 3.0 or greater? If so, will it process the effects of the newer Toaster version, or to put it another way, will my Amiga 2000 with a Toaster 2.0 card upgraded to 3.1 work like the Toaster 4000 and process the effects? Last, but not least, where could these chips be obtained if it is possible to install them?

Thomas Chaltry Chaltry Photo and Video Spencer, Wis. AGA stands for Advanced Graphics Architecture. It is the chipset available in the newer Amigas (1200 and 4000) that allow for more colors and some faster operations. The AGA chips cannot be installed into an Amiga 2000. In order to use the new Switcher effects of the Toaster 4000, you must have it installed into an Amiga 4000.

John Gross is an animator for Amblin Imaging and Editor of LightWavePRO.

Questions can be sent to bim in care of this magazine or electronically on Compuserve at 71740,2357, America Online as Bubastis or via the Internet at jgross@netcom.com.

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TIPS & TECHNIQUES

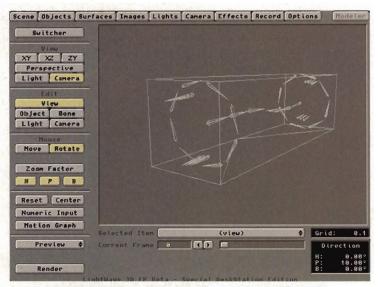
Using Text Attributes

How ASCII Can Save Time in Layout

sing bones in LightWave can be a complex and time-consuming process. The following is a great tip submitted by Marilynn DeSilva. Because of its complex nature, this might be better suited to more sophisticated users.

"Boneified" Tip

This is a time-saving suggestion for setting up groups of bones to be mirrored or symmetrically arranged.





Placing bones in a complex object such as an accordion can be extremely difficult. Using this month's tip, bones can be placed symmetrically with ease.

by Brent Malnack

- 1. Create, set rest length, parent and position the first set of bones. Give them repetitious names, such as LeftBone1, LeftBone2, etc. Save the scene.
- 2. Open a text editor or word processor with ASCII-save capability. Load your scene. Because LightWave saves scenes as ASCII text files, they may be easily loaded into a word processor and modified. This can be helpful when it is necessary to change the path from which objects are loaded. Instead of having to select the objects LightWave cannot find when loading a scene, the path can be replaced. More on this later.
- 3. Locate the reference to the first bone, starting with a line that reads AddBone. Read down to the last bone's entry, which should end with the line: ParentObject n.
- 4. Select and copy this entire block of text.
- 5. Insert the cursor at the end of the block you just copied and paste the text there. This copies the entire list of bone information.
- 6. Insert the cursor at the beginning of the block you just pasted and perform a forward Find and Replace. Type LeftBone as your Find string and RightBone as your Replace string. Do not include the numbers of the individual bones.
- 7. Save the file (remember to save it as an ASCII text file), return to Layout and load the edited scene.
- Reposition the parent bone of the new group and all of the children will follow.

Editing Scene Files

This tip can be used to modify other aspects of a scene file. Here is a sample LightWave scene file:

FirstFrame: 0 LastFrame: 1 FrameStep: 1

LoadObject: Objects/big_slab
ObjectMotion (unnamed)

EndBehavior: 1 ShadowOptions: 7

LoadObject: Objects/Cone ObjectMotion (unnamed)

etc

If this were a scene that somebody gave you, or you wanted to move this scene to a different machine, you could change the path from which the objects are loaded. For example, if these objects were loaded from a floppy, change the path to look this way:

LWSC

1

FirstFrame: 0

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The Picasso II has an on-board Blitter which supports drawing speeds up to 30 megabytes per second. The Picasso II Blitter has been fully integrated into the RTG emulator. Any program running under the RTG emulator will automatically take advantage of the Blitter. Off screen displays are moved into Picasso II display memory using the Blitter for super fast screen updates.



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1280 x 1024 256 color Workbench screen displayed on an A3000 with the Picasso II.



Picasso II RTG means No More 'Chip Ram Blues'

The Picasso II RTG emulator has been designed so that it uses no chip ram for its emulation. Only the currently visible display is kept in the Picasso II display memory, all other screens are stored in standard system memory. This means that all system memory can be used as graphics memory. A system equipped with 16 megabytes of ram would be like having a 16 megabyte graphics board!

Picasso II RTG means Maximum Compatibility.

The Picasso II RTG emulator supports Workbench 2.04, 2.1, 3.0, and beyond. The Picasso II is compatible with any Zorro II or Zorro III equipped Amiga system, such as the A2000, A3000, or A4000.

Picasso II AutoSwitch means One Monitor.

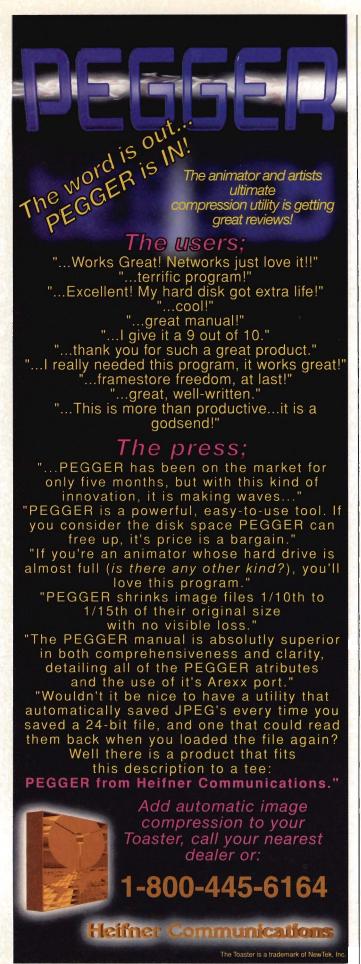
The Picasso II comes with a built in electronic switch that automatically routes the proper signal to your monitor. When the AutoSwitch detects non-Picasso II screens, such as those used by games and older software, it automatically routes the signal directly to your monitor. When the AutoSwitch senses a Picasso II screen mode, it will automatically switch back.

The Picasso II comes packaged with TVPaint Jr. (24 Bit Paint Program), and drivers for ArtDept Professional, ImageFx, ImageMaster, and Real 3D 2.0.

*Re-tar-get-ab-le Gra-phics adj.: The ability to run software on any third party graphics board. See also: Picasso II.

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TIPS & TECHNIQUES

LastFrame: 1 FrameStep: 1

LoadObject: df0:Objects/big_slab

ObjectMotion (unnamed)

EndBehavior: 1 ShadowOptions: 7

LoadObject: df0:Objects/Cone

ObjectMotion (unnamed)

etc

This was changed by searching for Objects/ and replacing with df0:Objects/. For most scenes, this process would not save a lot of time. However, consider a complex scene such as one that WaveMaker might create. It could consist of more than 100 objects. If you load this scene into LightWave and the paths are not correct, it could take 100 mouse clicks to get the scene loaded. Searching and replacing the correct path takes just a few seconds.

File to Film

Having Toaster graphics translated to film can be a complicated process. The following collection of tips from Timothy Rue explore preparing graphics for conversion to film or slides.

According to Rue, the best film to use for prints (negatives) is Kodak Ektar ASA 100. For slides (positives), try Kodak Ektachrome Professional Plus, ASA 100.

Other options include Polaroid High Definition film 100 for negatives and Kodak Ektachrome 100 speed for slides. In previews where no processing is needed, Polaroid 669 is required.

Slide film (positives) should be used if the intended print size is to be larger than 16x20 inches. However, an interneg will need to be created. (An interneg is a 4x5 negative created from a slide. Internegs slightly reduce image quality while eliminating grainy appearance.) Twenty-by-30-inch prints from 35 millimeter negatives begin to show grain but may be acceptable for non-professional or artistic use.

Although positives (for slides) and negatives can be mixed on a roll of film (using imaging processing software to reverse colors), it is not recommended. Doing so successfully requires testing all the variables (film type, software used to reverse colors and software and hardware for file-to-film transfer) and is generally more expensive than using film intended for different formats.

Color Approximation and Correction

Due to an almost unlimited combination of models and ages of video cameras, digitizers, color scanners, monitors, file-to-film equipment, film types, and lab processing factors which could be used in a project, photo labs and service bureaus cannot produce exact colors. To maintain a degree of uniformity, a hard copy reference is used.

You can help ensure some degree of reliability by following a simple process (or test cycle) and always using the same equipment, film and photo lab.

Have an image file put to film and developed to print. Compare the print to the image displayed on your monitor. Adjust your monitor to create the best color match. Recognize the importance of your monitor's representation of your graphic, but remember it will never be perfect.

Some monitors cannot be adjusted, so it is important to use

one that can. Simply make note of these adjustments and use them when working with image files going to film. Once you have a reliable working representation and you know what to expect, you can begin saving money.

Color correction is generally applied in two ways: with preprint software or during the photo lab process. Because the photo lab (film to print) is the last step, it is also the most often used method of final color correction.

However, the user's software not only can eliminate a lot of color correction done in film to print (and save money), but sometimes this method is the only way to correct problems. In the file-to-film process, it is possible to make the intensity or brightness of a given color too strong. This can lead to washed out or bleeding of that color in the final print, which cannot be corrected in the lab.

Watch for hot colors (reds, yellows and oranges). These are common problem colors in photography of video/file.

Software can adjust these colors by offsets. Colors can be adjusted by RGB, CMY(K), YIQ, HSV, etc. Most image-processing software has controls for one or more of these. Keep a record of any software settings.

Don't get carried away with adjustments. Using software controls to adjust your monitor to match a test print will work only if doing so does not alter the image files you're saving to go to film.

To adjust your monitor, you need a final print. Any adjustments to these software controls that affect a file can require a readjustment of the monitor. Once established, these software value settings should be used on all image files saved to go to film. Also, keep a nonadjusted copy for any additional work on the file image; otherwise, the degree to which the monitor represents the print becomes unreliable.

With the objective of removing problems the photo lab cannot correct and eliminating the lab's extra step in color matching, this test cycle may need to be clone a few times.

A good photo lab writes a code on the back of prints when they implement color matching. It's important to record the frame and negative that this code applies to. For example, let's say you sent an image to be converted from file to print. The lab did color matching and printed its code on the film print. You lose the print. To have another copy made, you need to take in the negative and give the lab the color matching code.

Once you establish your test image file and a best match with both your monitor and file to film, have the lab produce a few 8x10s of this frame with any final color correction that may be needed. The next time you have some files to film done, use this file as one of the frames.

This allows the entire roll to be color matched with one frame against its existing hard copy. Be sure your test image contains various levels of CMY(K)—Cyan, Magenta, Yellow and Black (a subtractive primary system)—and/or RGB—Red, Green and Blue (an additive primary system). With a little effort, you can avoid the need for your lab to do color correction. For her winning tip, Marilynn DeSilva receives a free copy of *Mastering Toaster Technology*.

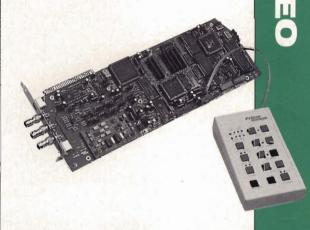
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DR. VIDEO

The Dubbing Dilemma

How to Increase Signal Quality







elcome 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 advanced—Dr. Video takes on all comers.

Last month I mentioned I'd help readers with Video Toaster wiring problems, as long as I could do it within the context of the column so that we could share the answers with everybody. The response has been, to say the least, gratifying. I have several block diagrams of troubled Toaster systems in hand, and a TV station in the Caribbean has retained me as a consultant.

So let's dive right in. This month's setup comes from D.C. in Wayne, N.J. It is shown in Figure 1. D.C. is confident that the system is wired incorrectly and reports that his major complaint is a significant color shift on edited tapes.

Actually, I am surprised that it works at all. Let's start with the TBC hooked up to the camera. Time base correctors are designed to remove the instabilities caused by the moving tape and spinning head drum in a VCR. Tape and drum speed is servo controlled, and servos only actuate when what they are controlling has drifted out of tolerance. (Like moving the rudder on a sailboat to compensate for swells.) The camera used should not require a TBC, and any camera that is so poorly designed as to require a TBC probably won't make a good picture, anyway. A rewired version of D.C.'s system is shown in Figure 2.

Normally, the two playback decks would require TBCs. However, the decks used here have built-in TBCs. As to how the decks are wired, my personal preference is to keep the video path short and simple. This minimizes things that can go wrong and also keeps electrical noise out of the video signal. However, I am a big fan of monitoring and have shown the second output of the decks feeding inputs A and B of the waveform monitor and vectorscope.

I would break my own rule about short video paths, and wire from the Toaster Program output line through the waveform monitor and vectorscope input C to the record machine. This is because it is important to know what the Toaster output actually is. There are level adjustments on the record VTR that might make the waveform monitor falsely read high or low.

I can't see a reason for having both the A and B side

of the program monitor look at the same point, which is essentially what is happening in Figure 1. I'd connect the A side to the video output of the waveform monitor and vectorscope. This way, it can be switched among Player A, Player B and Toaster Program from the waveform monitor. I'd then connect the B side either to the recorder video output, so I could review edits, or possibly to the camera, which seems to have no monitor at all.

Now about the sync reference signal. In Figure 1, nearly every terminator is set incorrectly. Use terminators, either switchable or the kind built as physical connectors at the end of the pipe. No circuit gets more or less than one terminator. This is true even if a signal loops through several devices on its way to the last one, which is terminated.

It would be possible to loop sync from device to device, ending at some single-ended machine (that is, one that doesn't have a loop-through connection). I think D.C. could save a lot of headaches by installing a distribution amplifier to send reference video everywhere it has to go. This is especially so when one is trying to do system timing. It is best not to tear up a system to time it. The wiring may have been part of the problem.

I will go through the timing of this system in next month's column. In the meantime, readers may want to look over the recent "ABCs of Video" series, which concluded in *VIUs* March 1994 issue. It covers a lot of these subjects.

How do they do it? Almost any rental VHS tape seems to have better picture quality than what we are able to make here in our studio. My animations are mastered on Betacam SP. When I dub directly to whatever VHS deck I try, I never seem to get as sharp of a picture. What gives?

G.M. College Station, Texas

It really is disheartening when a carefully created image seems to fall apart while dubbing to VHS. There are several reasons why a rental VHS tape looks "better" than a locally produced one. Some may be under your control, some may not.

First, feature films are not shot in video; they are shot on 35 millimeter film, which has significantly better resolution. Often, a videotape is made at the same time as the film, using a "video assist" device. The tape is then edited, and the film negative is cut or conformed to match the video. The negative is then

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DR. VIDEO

played back through a telecine, which inverts the colors and makes a dub master, from which the release tapes are dubbed.

Second, some movies are dubbed using recorders, but others are made in bulk using high-speed transfer systems that use heat and magnetic fields to "print" the signal on the tape.

Third, the dub facility adheres to standardization. This means that they have waveform monitors and know how to use them. Also, the dubbing signal may employ special preprocessing.

Fourth, the dub deck, if used, is likely to be a special machine that is more expensive than the decks you are using.

The BVW-75, for example, has many outputs. Stick with program or line outputs. Monitor outputs are for monitoring, not recording. You may also be able to increase quality by using a VHS deck that accommodates Y/C or some dub format as an input. A transcoder box can take the analog component (Y, R-Y, B-Y) output of the BVW-75 and convert it into the dub signal. This avoids several NTSC coding and encoding steps, which is where degradation can occur. All of this presumes that the BVW-75 is working well and properly calibrated.

I want to make a training film using animated automobiles, roads and houses. Unfortunately, I know so little about the field of video production that I can't even seem to ask the right questions about what I need to get started. What hardware and software do I need, and what materials can I purchase to educate myself?

R.R. Manchester, N.H.

One way to make the video you are describing is to create the animations in LightWave, the 3D animation program that comes with the Video Toaster, and then mix them with video segments and narration using a Toaster and an audio mixer. However, you are in luck because NewTek has just announced the Video Flyer, which does all of this and more.

As to where to learn the language, I agree you have a problem. Video has a rich history and language, as does the computer. Desktop video is the merger of the two. Twice the jargon, twice the fun. Read *VTU*. We try hard

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to provide a rich video education in every issue. Last month in this column I listed a few books and authors you might want to try.

Until you become familiar with the language, you are at the mercy of those who could try to sell you things that may or may not work. You do not need a closet full of gizmos. You need a training video. Why don't you tackle this first project as a producer? Know what you want to do, work up a script and a storyboard showing how you imagine each scene will go, then put the word out that you are taking bids. Start in the *Yellow Pages*, calling every TV station and video production house and videographer and photog-

rapher you can find. Interview those who are interested, and ask those who aren't for recommendations. After you have explained yourself a few dozen times, you will have crystallized your message and know who can help you. By the time you have your video, you will know exactly what equipment is needed should you want to take the next job in-house.

I want to make a short film of daily street traffic in my city. I need to capture frames at certain intervals (say, one frame per minute) using my Toaster. How do I do it?

J.S. Coon Rapids, Minn.

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Digital Processing Systems makes a great device called the Personal Animation Recorder that is designed for such time-lapse photography. You feed your camera to the input, set up the duration of each shot and the interval, and it clicks away for you. Recall the frames in order and lay them to tape, and you have your film. If you can tolerate the extra delay, you might be able to do the same thing with your Toaster directly, making framegrabs as driven by an ARexx script. Of course, this project should be a snap for the Video Flyer non-linear disk recording system.

After using the Video Toaster 4000 and then quitting the program, the Workbench screen shows up on my Preview monitor and also as a negative (black) image on my Program monitor. I can't seem to clear the image from my monitors. NewTek's technical support team says their systems do this too and that I can clear it by switching to an unused input before quitting the Toaster, but this doesn't seem to work. What gives?

R.D. Ridgewood, N.J.

Toaster depends heavily on the resources of its host computer. The Toaster board doesn't turn off when you quit the Toaster application; it just goes to a don't care or day-dreaming state and passively forwards anything that happens in the underlying Amiga to its output amplifiers.

Switching to unused inputs is the right thought, because even if you don't turn the Toaster off, at least what passes through will not be distracting. I suspect that you might cure your problem by setting all inputs to black (many Toaster users feed color black as the reference video to input one), then calling up two black frames into the still stores, and setting Chroma Effects and keys to black as well. If that still doesn't work, do as you suggested in your letter. Turn off the Toaster's Program and Preset monitors when you are using the Toaster's Amiga for other things.

What can I do when I transfer my copyrighted photographs

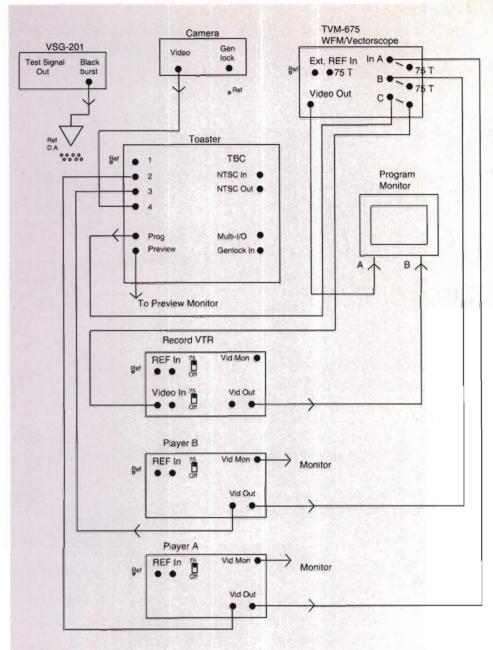


Figure 2

onto videotape so they won't be stolen, pirated or copied?

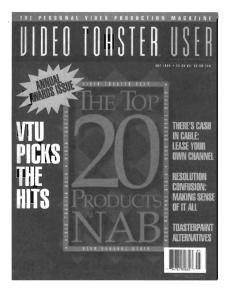
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Valley Stream, N.Y.

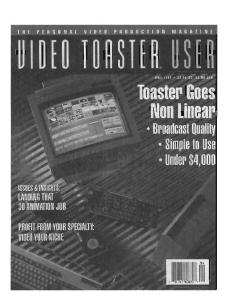
Take a two-pronged defense against piracy. First, legally protect yourself with appropriate copyright notices at the head of the tape, and maybe in the middle and the end. Repeat such copyright notices in the packaging material that comes with the tape.

If it is not too obtrusive, you might consider keying in your logo in the corner of the screen, as they do at the television networks.

Finally, anytime someone uses one of your images without permission, take some kind of action, even if it is nothing more than sending a letter explaining that they must not do that. All of this demonstrates you are diligently defending your copyright. You have to pay money to go after people, and your chances of collecting damages depend on how good your and their legal counsel is. What you can't do is fall asleep and then spring into



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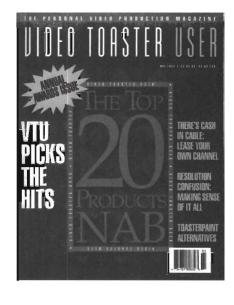
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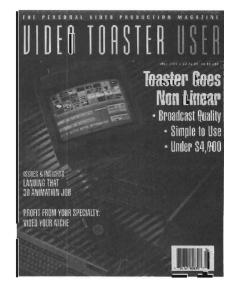
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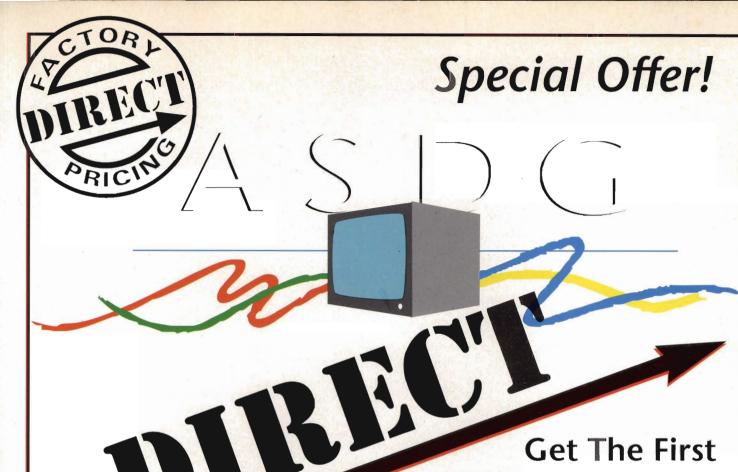
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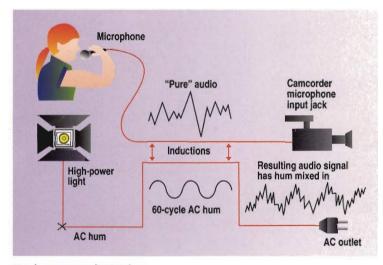


f all the audio problems likely to plague your video productions, none is so ubiquitous and professionally embarrassing—because it's so easily avoidable—as hum.

If there's any doubt in your mind as to what hum sounds like, just hook up a cable to the auxiliary input of your stereo system or the microphone input of your camcorder and touch the other end of the cable at the tip with your

finger. You'll hear hum.

Technically, hum is a low-pitch tone with a frequency of 60Hz—the same as that of AC power lines in the United States. (In Europe and other parts of the world, AC power runs at 50Hz and hum thus has a slightly deeper pitch.)



How hum enters audio signals

Pure hum, properly recorded, has a mellow tone. But since hum usually enters the audio picture as an unwanted invader, it is rarely recorded properly. When it is at such a high level that it overloads the input circuitry (such as at a sensitive microphone jack), the pure sine-wave shape of the original hum signal gets distorted (clipped); the result is an even more annoying buzz. This distinction between pure and distorted hum becomes important when you try to filter it out.

How Hum Happens

Hum can creep into electronic signal lines in thousands of different ways. In fact, hum distortion is hardly limited to the audio side of your video productions; it can also show up in the picture as a wavy distortion

that slowly rolls up the frame. Regardless of whether hum enters your picture or sound, the basic process electromagnetic induction—is the same.

Electricity and magnetism are closely related forms of energy. Most electrical power generation is based on this relationship, as are such basic technologies as magnetic tape and disk heads, dynamic microphones, phonograph pickups, speakers and CRT display screens (such as ordinary computer monitors and TV sets).

The relationship between electricity and magnetism works like this: Whenever electricity passes through a wire, a magnetic field is created around that wire. Conversely, anytime there's a magnetic field increasing or decreasing in the vicinity of a wire, it generates an electrical current in that wire.

Let's look at the first part. In the case of a flashlight that uses single-directional direct current (DC) batteries, there's a constant flow of electricity while the flashlight is on, and hence there's a constant magnetic field created around the flashlight. (A simple electromagnet concentrates that magnetic energy in a coil, creating a stronger magnetic field.)

Unlike a battery-powered flashlight, a table lamp in a living room uses alternating current (AC power) obtained from a wall outlet. By definition, AC involves constantly changing directions and levels of electrical flow. The electrical current flows in one direction, then the opposite and finally back and forth. The rate of change is 60 cycles, or complete waves, per second. This results in a magnetic field that's constantly building up and collapsing at a rate of 60 times per second.

Now let's look at the second part of electromagnetic induction. Imagine you've got a microphone cable lying right next to a lamp cord. Although there's no electrical connection between these cables, there is a magnetic connection. The lamp cord is emitting a changing magnetic field. Within the microphone cable, a small amount of electricity is induced to flow each time the magnetic field around the cable expands and collapses. This occurs 60 times per second.

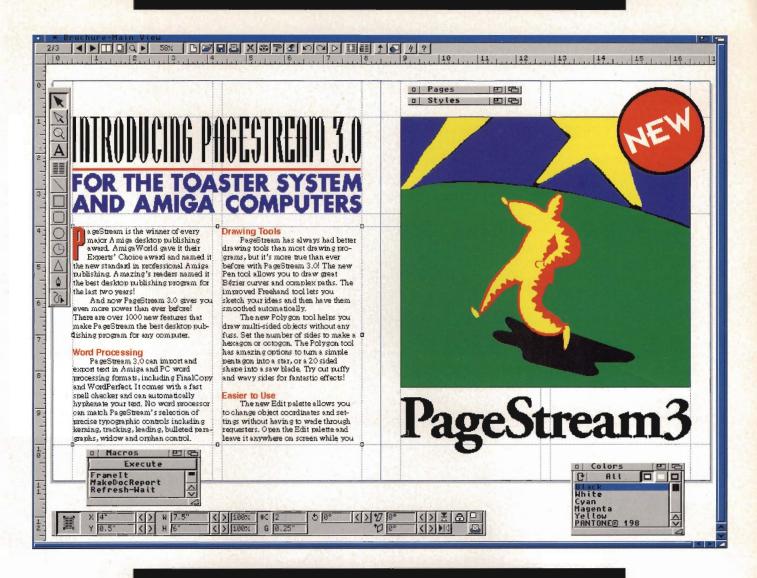
Signal Levels

Although the amount of electricity induced to flow in the microphone cable is very small, a microphone signal itself is rather small. When mixed together in the cable, the hum can become a significant component in the overall signal and can even render it unusable.

Since microphone inputs are extremely sensitive to minute, electrical variations, hum is more of a problem with microphone cables compared to other audio signals.

Audio engineers categorize audio signals into three

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SOUND REASONING

general categories: microphone, line and speaker levels.

Microphone-level signals are on the order of 1/1000th to 1/10th of a volt, and power is in the ballpark of less than one microwatt (one millionth of one watt). Because these signals are so tiny, they're the most susceptible to distortion.

Line-level signals are more hardy. They can usually be carried by coaxial cables in lengths of up to 25 feet with minimal hum pickup. Technically, line-level audio signals measure about one volt, and the power transferred between a line-level output (such as from a CD player) and a line-level input (such as the auxiliary input on a stereo amplifier or the audio inputs on a VCR or monitor/TV) is in the ball-park of a few milliwatts (thousandths of a watt).

Speaker-level signals are the strongest. They run upwards of 10 volts,

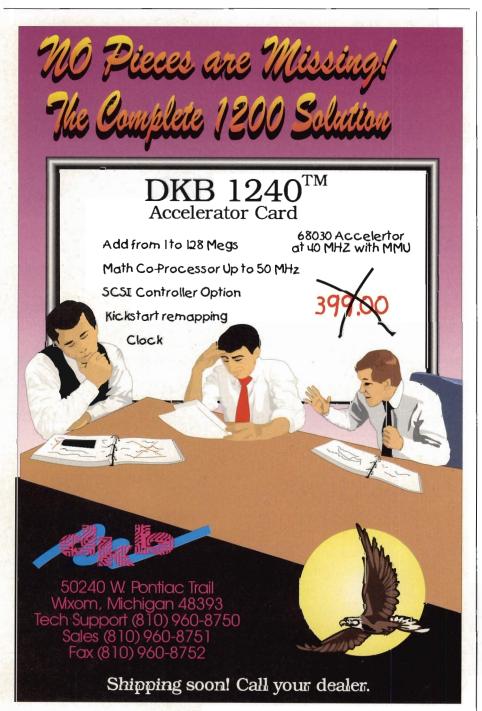
with power ranging from about one watt up to hundreds of watts—enough to drive stereo speakers with room-filling sound. These signals are so strong that induced hum is rarely a problem. Speaker-level signals are so much more powerful than induced hum that you usually don't need coaxial cable; ordinary zip cord is commonly used to connect speakers to amplifiers.

No More Hum

The best way to eliminate hum is to nip it at the bud. Never record audio containing a significant (audible) level of hum. Of course, the only way you'll detect hum, especially in its more subtle forms, is by listening with headphones to the recordings while you make them. When using a camcorder to record sound, always wear headphones. You wouldn't want to shoot pictures without looking at the viewfinder, would you?

The basic rules for minimizing hum are relatively simple.

- 1. Amplify the signal as soon as possible. Avoid long cable runs (more than a few feet) with microphone level signals. If a microphone level signal needs to travel more than 50 feet, try to get it amplified to line level prior to the cable run.
- 2.For microphone cable that runs longer than five feet, always use balanced microphones and cables with XLR (Cannon) connectors. These are the connectors with three pins surrounded by a metal shell. Note that for the best hum rejection, you'll need to hook into a balanced input, or use a transformer adaptor at the input jack of a camcorder with an unbalanced microphone input, as most consumer models have.
- 3. Always use coaxial cables for line-level signals. Note there are different qualities of coaxial shielding, generally measured in percentages. The best cables offer 98 to 99 percent shielding, meaning they're more impervious to electromagnetic induction.
- 4. Never run audio cables alongside AC power cables. Keep microphone cables at least three feet from AC power. If an audio cable must cross an AC power cable, keep the crossing perpendicular (at



- a right angle) and don't run the cables along each other, even for a short distance.
- Be aware that there are hidden AC power cables behind walls and underneath floors.
- Avoid using AC power whenever possible—run equipment off batteries when you have the option.
- 7. Plug audio and video equipment into different AC branch circuits than halogen lights and heavy machinery.
- 8. Coils of wire tend to exacerbate hum problems and should be avoided. A long coil of AC power cord emits a much stronger field than a straight wire; likewise, a coiled audio line becomes more sensitive to magnetic fields in the vicinity of the coil.

Hum Cures and Postmortems

Suppose you take the solemn oath of hum prevention, as outlined above, from this point forward. What if you've already got an audio recording plagued by hum problems? Is there a cure? Yes, sometimes.

It may be technically possible to filter the hum from the recording and leave a decent audio track for your final mix.

But the hum must be audibly mixed in with the desired signal—not totally overpowering it. In other words, if you listen to your recorded audio and hear only hum—without even hearing a trace of the desired signal—your track is unsalvageable.

Hum can usually win most sound battles, especially if it's much stronger than the original signal. Such hum forces the camcorder's (or VCR's) automatic level control to attenuate (mute) the signal to bring it into the proper recording level range, thus minimizing the much-lower desired signal as well.

Assuming there's some desired signal left on the tape to salvage, you can attempt to filter out the hum. Note that even if you're totally successful at eliminating the hum, the end result will still probably have a lot more audible hiss than if there had not been any hum in the first place. The tape itself has inherent hiss. In recovering the relatively weak desired signal, you'll also be amplifying this hiss.

Equalizing Hum

There are two types of audio filters commonly available: graphic and parametric equalizers. The graphic variety offers components for many home audio systems, while the parametric equalizers are considered more of a professional item.

For eliminating hum, you're probably best off with a parametric equalizer. They're usually capable of creating a more severe decrease in hum and able to focus in more precisely on the hum without affecting other pitches. (Assuming there's adjustable frequency, that is. Inexpensive mixing consoles may have fixed frequency tone controls that are of little use for eliminating hum.)

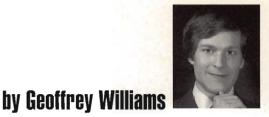
Your starting point for hum elimination is to feed the signal through an equalizer that's been set for maximum reduction (cut) at 60 Hz. On parametric EOs this may be as much as -24dB



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The Information Highway

Searching the Digital Road for Toaster Data



ou've heard the talk about the information superhighway and how the entire nation will be communicating digitally in the near future. For those of us with computers and modems, that lofty vision is already here. The amount of infor-

Toaster, LightWave and video topics in general is so vast you could spend every waking hour perusing it. This month, I'll clue you in to what this Internet information is all about, the utilities and ways to sort through the vast amount of information available to Toaster users, and cover some of the many digital newsletters and magazines available from a local BBS.

mation that can be accessed digitally about the

Surfing the Digital Wave

There is a lot of information out there in a variety of formats. In the download areas of a BBS are files such as press releases of new products, hints and tips and even regularly published digital magazines. They might

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Hike's Video House -- sysop, HIKE MOON

From: SEAN RIDLE
SUPERING HOUSE -- SEAN RIDLE
SUPERING HOUSE -- 4789

TO SUPERING HOUSE -
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The QBlue off-line message reader sorts messages by subject, date, from, to and message number or by key words.

be standard text files or AmigaGuide documents, which you can identify by the extension .guide. AmigaGuide is the official hypertext format on the Amiga, and in order to read them, you'll need both the AmigaGuide.library and AmigaGuide, which should be in your c: directory. These can be downloaded from most systems. If you have Workbench 3.0, it uses MultiView instead to read AmigaGuide documents (and MultiView only works under Workbench 3.0). Since a lot of AmigaGuide documents use MultiView as the default hypertext reader, I made a copy of AmigaGuide in my c: directory and renamed it MultiView. So when an icon calls for MultiView, it actually winds up using AmigaGuide. This saves me from having to change the default tool in the icons.

The other type of information can be found in message sections, where you can read and write messages to others, either on your local BBS or through vast networks that let you communicate with people around the world. Every topic is available, from message sections specializing in LightWave, to general video information.

Finding a BBS

The first step is to find Amiga BBS systems that are local to you. Try calling the BBSs mentioned here. Chances are, they have the latest edition of Ed Dukeshire's monthly list of BBS systems that support the Amiga (the AmigaGuide version is created by Ron Glidden). Originating from the Amiga Asylum, an all-Amiga BBS at (508) 372-2258, the *Worldwide BBS List* is an invaluable resource if you are looking for BBSs in your area. The list tells you if the boards have access to networked messages, such as FidoNet or UseNet, which most likely gives you access to video or Toaster echoes. But it does not tell you if the board has Toaster or graphics support.

Echoes

My reference to a video echo is probably cryptic to a good percentage of you. Echoes are collections of public messages sent across the country (and in some cases the world). In the middle of the night, these messages are gathered together and sent from one computer to the next in a vast network that eventually gets the messages to all of the participating computer systems. These messages revolve around the topic of that particular message base, and there are thousands of different types, including echoes for video, Amiga video, Video Toaster, Amiga graphics, Amiga 3D and much more. In these messages you can discover a lot of questions being answered, general tips and advice and the inevitable rumors that must be taken with a grain of salt.

Your local BBS may include one or more of these national networks, but the message bases that board subscribes to are decided by the sysop (system operator) of that board. Most of them take requests to add message bases, though. The main networks are FidoNet and UseNet. FidoNet was started by Tom Jennings in 1984, and today there are more than 10,000 participating computers. UseNet was started by a couple of college students, and the different message bases are called news groups. UseNet now has millions of users every day, including some well-known Toaster professionals. For example, LightWave programmer Allen Hastings is at adh@well.sf.ca.us.

Conquering the Digital Wave

There may be as many as several hundred messages added overnight to a BBS, so reading and responding to the messages can be a daunting task—if you tried to do it while connected to the BBS. Most let you bundle the messages into a compressed file that you can then download into your computer. Typically, the messages

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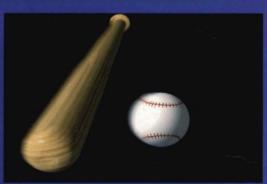
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CYBERSPACE

are compressed in an archive such as LZH, but when you decompress them you get a huge text file, including all of the areas you have chosen. This is quite difficult to browse through. Then you have to write down the message number you want to respond to, log back onto the BBS and manually respond on-line.

A better solution is to have the BBS compress the files using a message bundler. One of the most common formats for this is called a QWK file. Using a special program called an offline message reader, you can sort through the messages and respond to them and later upload your responses to the BBS in compressed form.

The one I like the best is called Q-Blue (version 1.0) by Paul Kienitz. It has a very attractive user interface and supports the Bluewave and QWK formats. It lets you sort the messages by subject, date, from, to and message number, and you can search messages for key words. You can save an individual message to a file or print it out and load the word processor of your choice for writing responses. It even

and covers both computer industry and Amiga-specific news. It is published in AmigaGuide format and includes reviews, rumors and news from Portal and FidoNet.

I have seen a couple of publications, one on 3D in general, and the other dedicated to Amiga 3D, but since I can't verify if they are currently being published, you'll just have to keep an eye out. Plus, new publications continue to appear.

The Global Village

The Internet is a vast, complicated global information network. There are currently more than 40 countries connected, with Russia becoming a recent participant. More than 1,000 computers are added to the Internet each day, with some 25 million daily users. Based on current growth, it is estimated that by the year 2000 the Internet will connect more than one million networks servicing more than 100 million computers.

The Internet is amazing not just as a phenomenal technological achievement, but also as an accomplishment

of the Internet in clear simple English. Being in hypertext, it is easy to browse through and find the information you want.

How do you gain access to the Internet? You need to find a service that allows access to a participating computer. A text file called PDial by Peter Kominski has information on most of the services that can link you to the Internet. For a fee of \$20 a month, you get unlimited access to the entire world, and in most cases it's a local call. Not a bad deal.

Of all the ways to telecommunicate, Internet is the most complicated, but also the most powerful. It lets you send electronic mail to other Internet users as well as BIX, CompuServe, Genie and other telecommunications subscribers. You can FTP (download binary programs, typically shareware) a vast number of programs from computers across the country through AmiNet, and access information on almost any subject imaginable. There are also mailing lists on a variety of topics that are sent to you via E-mail, including the popular LightWave mailing list with lots of LightWave information and the Video Toaster mailing list. You can be put on the LightWave mailing list by E-mailing this message: "Subscribe (your user ID) LightWave to this address: LightWave-request-@bobsbox.rent.com." You can be put on the Toaster mailing list by E-mailing this message: "Subscribe (your user ID) Toaster to this address: Toaster-request@bobsbox.rent.com." Services such as Internet are the communications vehicles of the future. and you can be a part of it today.

While on the subject of BBSs, I got a call from Don Smith to let me know about his LightWaved BBS. Located in the San Francisco Bay Area [(510) 228-0886], it offers nearly 400 objects, lots of textures and scene files and a section for LightWave tips and hints. In fact, Don tells me that the board's main emphasis is sharing information on how to get more out of LightWave, so it should prove to be a valuable resource.

On another note, I have received many requests from people to make LightWave objects available on disk. Frankly, there is just too much available, and perhaps this is one of the main reasons why a modem is a good

By the year 2000 the Internet will connect more than one million networks servicing more than 100 million computers.

keeps track of which message sections have been read, displaying whether you completely read, unread or partially read the section.

Digital Magazines

There are a number of regularly published magazines to be found on most BBS systems that support the Toaster and Amiga.

Genie is a commercial BBS, but they also publish a couple of digital publications. *ViewPort* is published monthly in the AmigaGuide hypertext format and is edited by Jim Meyer along with able assistance from old-time Amiga hands such as Peggy Herrington. It includes articles and news. The weekly *Starship Weekend News* provides a quick look at the week's Amiga happenings.

The weekly Amiga Report Online Magazine is edited by Robert Glover

at the social level. No one owns the Internet; it is a cooperative between all those involved. This cooperation extends beyond national boundaries involving numerous countries, and yet somehow, it works. (It almost gives you hope for humanity.)

Accessing the vast amount of information flowing through the Internet is not easy, and there is a learning curve. There are many good introductory books, and one I like is called *Navigating the Internet*, by Mark Gibbs and Richard Smith (SAMS Publishing, 1993, ISBN 0-672-30362-0). There are also some on-line files available through your local BBS that are quite useful. *The Big Dummy's Guide to the Internet* is in AmigaGuide format and published by the Electronic Frontier Foundation. It offers an excellent introduction to the many aspects

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The Starter System Amiga 4000/040, Video Toaster 4000, 10 MB RAM, 245 MB Hard Drive, Amiga Monitor. Some options might include: TBCs, remote rackmount, monitors, Crouton Tools 4000 and/or Toaster Toolkit 4000 utilities. Call for pricing!

The Animator Amiga 4000/040, Video Toaster 4000, 18 MB RAM, 350 MB Hard Drive, Amiga Monitor, Pixel 3D Pro, Art Department Pro, Brilliance. Some options might include: DKB memory board for longer animation playback directly out of the Toaster and an SFC for tape based animations.

The Artist Amiga 4000/040, Video Toaster 4000, 18 MB RAM, 350 MB Hard Drive, Amiga Monitor, Retina Board (4MB), TV Paint, Pixel 3D Professional, Art Department Professional, Image F/x, Brilliance, Crouton Tools 4000. Options might include: Removable media for transfering images from one system to another, drawing tablet, Pro Page or PageStream for outputting your work to Postscript or print, Sharp or Epson scanner for scanning of images and artwork into the system.

The Craftsman Amiga 4000/040, Video Toaster 4000, 18 MB RAM, 350 MB Hard Drive, Amiga Monitor, Retina Board (4MB), SunRize AD516, Pride A/B roll editing controller, MONTAGE for the Video Toaster, SuperJam! Bars & Pipes Professional, Roland Sound Canvas (MIDI module), Art Department Professional, MorphPlus, MultiFrame, ProFills, Brilliance, TV Paint Pro, Vista Pro (land-scape generator), Toaster Toolkit 4000, Crouton Tools 4000. Options might include: Removable media for transferring images from one system to another, drawing tablet, Pro Page or PageStream for outputting your work to Postscript or print, scanner for the scanning of artwork into the system.

The Professional Animator Amiga 4000/040, Video Toaster 4000, 18MB RAM, 525 MB Hard Drive, Amiga Monitor, DPS Personal Animation Recorder, Nucleus Single Frame Controller, Pixel 3D Pros. 2.0, Art Department Pro 2.3, Morph Plus, ADP Tools Pro). Dynamic Motion Module (real-world motion animation module), Vista Pro 3.0 (landscape generator), Toaster Toolkit 4000, Crouton Tools 4000. Options might include: DPS Personal TBC IV for rotoscoping applications. Call for pricingl

The Editor Amiga 4000/040, Video Toaster 4000, 18MB RAM, 350 MB hard drive, Amiga Monitor, Amilink, SunRize AD516 (8-track digital audio), Crouton Tools 4000, Toaster Toolkit 4000, Montage (character generation software), Roll'em (teleprompting software).

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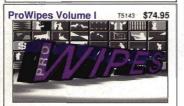
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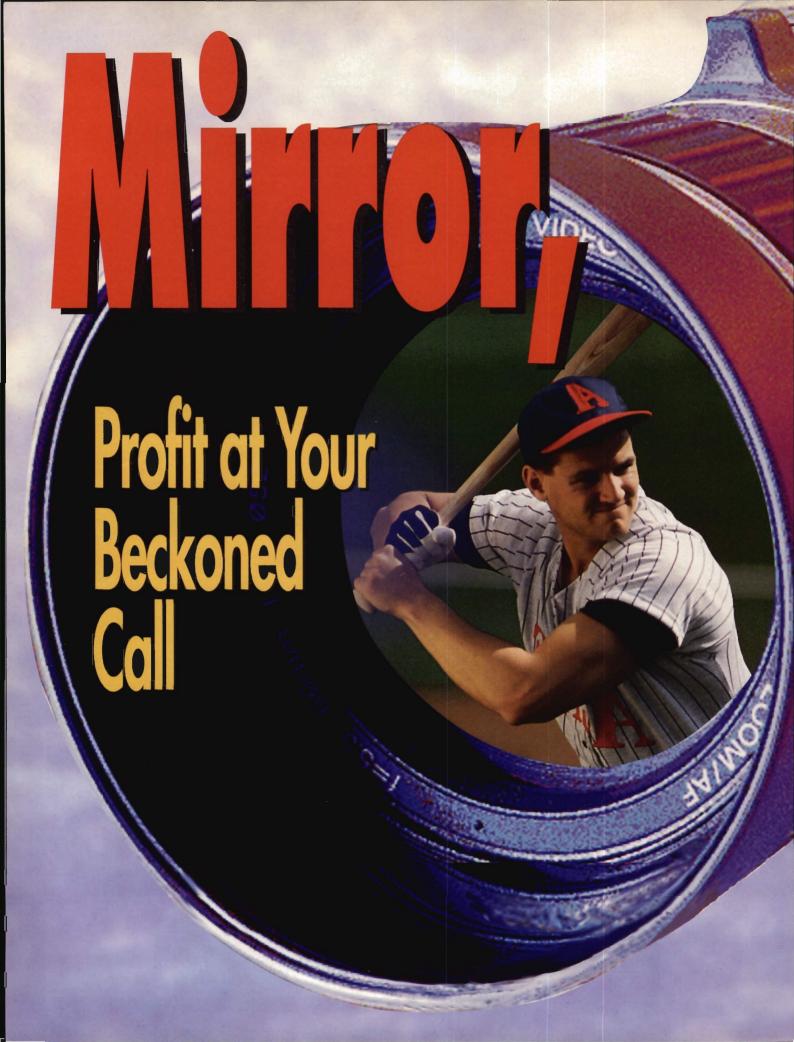
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by Allen Edmonds

Provided a man is not mad, he can be cured of every folly but vanity. Jean Jacques Rousseau

anity doesn't limit itself by demographic, profession or economic class. It's neither virtue nor vice. Defined in classic literature as "the sixth insatiable sense," vanity is simple reality—a human characteristic as natural as joy and sadness.

As such, it can be harnessed, catered and sold—much like the corner grocer polishes and markets his reddest, juiciest apples to hungry passersby.

Do you know a corporate league basketball player? A recreation league quarterback? A Sunday afternoon third baseman? At some time or another all of them have probably pretended to be Joe Montana searching for an open receiver, Ken Griffey, Jr. crashing into the outfield wall or Charles Barkley burying an open jumper. That's the dream.

When the dream becomes reality, vanity steps in. When people pay to feed their vanities, some-body's found the right niche.

Vanity causes us to do more things against our inclination than reason does. LaRouchefoucauld

In video production, niches can be difficult to find. Rarely does an independent producer strive to be the price leader, cranking out work in volume for slim margins. Most fancy themselves as specialists, customizing the work to trigger the emotions, needs and wants of the client or viewer.

That expertise and talent doesn't come cheap. Time, effort, dedication and, yes, equipment, each come with a price tag. The combination works for Steven Spielberg, who has found a way to collect a little from each of the millions. It can work for an expert in one field or another who can tap the mass market for buyers. But for the custom producer who specializes in preparing work for a particular client, profits can be tough to come by.

It becomes much easier, of course, if you can appeal to that sixth insatiable sense. If you can take what they see in their bathroom mirror every morning and put it on their television screen in favorable comparison to the likes of Joe Montana or Steffi Graf, you've found the key to the vanity niche.

For Ted Barszewski of the startup Post Video Effect firm in New York City, custom sports video has helped launch a new business. He and partner Dan Nessel contracted with a local corporate sports league to shoot and produce highlight films for football, basketball, softball and volleyball participants. The league offers the videos to players as part of the sign-up deal.

"We've found that with sports like football, people are very interested, and they're willing to pay—no doubt about it," Barszewski said. "Softball is similar, and basketball is decent, too. I think it comes down to an exposure thing. People are used to seeing those sports on TV, and

Mirror, Mirror

they like to associate themselves with [famous] players. When they see themselves performing on TV, they feel like they can."

Given the cost of shooting and editing time, the duplication expenses and overhead, a highlight video can run between \$700 and \$800 to produce, Barszewski said. "But if you're taping a lot of games, it could easily go up to more than \$2,000." That's why sports video is still most

"It was just a crazy MTV-type video. We sent it in to *Basement Tapes*. We didn't win, but we got on the air," said Freedline. At that time, there was no real networking relationship between the music and video worlds, so Freedline began to develop one.

As time progressed, other opportunities began to unfold for Video Kooppelies at bodybuilding generatings.

As time progressed, other opportunities began to unfold for Video Keepsakes at bodybuilding competitions, horse shows, weddings and parties. There was a market,

he discovered, for video almost anywhere sports and entertainment were happening.

"We're known here in Miami Beach," Freedline said. "A lot of duping houses, when they're asked for production people, steer [clients] this way. For our party business, which is our weekend business, we've gotten friendly with the temples, synagogues, churches and other photographers."

Photo montages, a type of video photo album set to music, is another technique Freedline has found to feed the vanity trait. Though most people jokingly shy away when cameras pop out at family gatherings and parties, no one forgets to run to the

drugstore when it's time to pick up the finished prints.

When Freedline shows up at the condominium association, the photo shop or through his door-to-door campaign handing out fliers and showing demo tapes of his montages, his company naturally gets at least a second look.

And once the work is seen, price is only a secondary issue

"We did take out advertising in the Yellow Pages, and it just doesn't seem to work for this business," Freedline said. "People who are getting ready for their wedding will call just wanting to know how cheap we are. We aren't cheap, and we're not looking to do that kind of Uncle Henry production with anything we do. You have to let your customers and your work be your best salespeople."

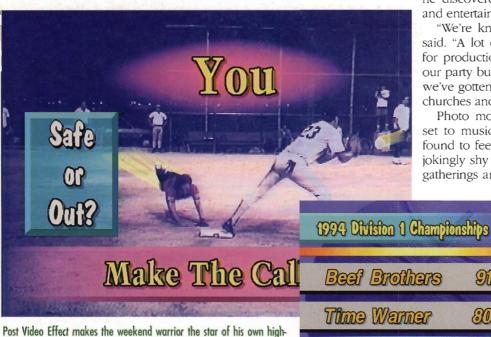
Scott Williams 26 pts 12 reb

His custom work has led to commercial business as well. From 30-second spots for cable TV to almost anything else, Freedline has found a way to produce video for people he may meet.

"It's difficult to put a preconceived idea into someone's head. With video, you can do practically anything. If you meet someone who has a bit of a photo itch, you can probably work something out with them," he said.

"The surprising thing about the parties I shoot is that probably 90 percent of my commercial business comes from meeting people at them. Everyone owns their own business now, and when I go to show them the video and they see how amazing it is, I ask them what they do. If they own a small business, I whip out my double reel of commercials, and I end up getting a lot of business."

We do not content ourselves with the life we have in ourselves; we desire to live an imaginary life in



successful if the work is sold in bulk to the sponsoring organization, rather than to individuals.

But, he said, "we've had teams call up and ask for raw footage from the games we tape. We're able to sell that to them on request. We charge \$25 for one game, and for a series of three games, we'll charge them \$50."

For Gary Freedline, director of Video Keepsakes in Miami Beach, MTV's original *Basement Tapes* program served as a bridge between local musician and video entrepreneur. A musician himself, Freedline was raised as a video buff and grew up with the technology—beginning in the late '70s with the first Sony Betamax video deck and his father's prized \$3,000 camera and tripod.

"He would take my brother and I and show us some moves with it," Freedline said. "We would try framing and zooming and anything else we could do."

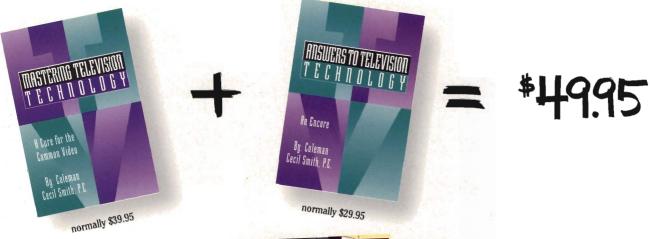
Shortly after taping a friend's bar mitzvah, Freedline and his brother opened their own company. "People didn't know what video was. They didn't have machines, so how were they going to play it back?" he explained. Freedline added that the first year was quite tough; their company was hired for only two jobs.

By the early '80s, though, the market was beginning to warm up. Their initial success came at a local Dunkin' Donuts, where the brothers produced a music video featuring a friend's band.

light reel.

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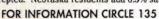
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Mirror, Mirror

the minds of others, and for this purpose, we endeavor to shine.

Pascal

The vanity button—the one that opens pocketbooks and turns an art form into a viable business—can't be pushed with a claptrap production, even if the purchaser is the star. Foresight, planning, equipment and talent must

be dedicated to the work.

Barszewski's selling point is quality—the player must appear to be starring in an ESPN *SportsCenter*-like production, or the ruse won't work.

"We use Hi8 cameras, prosumer models," he said. "One of the big things with filming sports is that we have to use equipment that will work well in low light.

Gyms quite often aren't very well-lit, and with outdoor sports, you're shooting a lot of night games."

Graphics are critical to a professional sports production, and Barszewski said the company uses screens for standings, team names and scores.

"In some ways, we have to gear our presentation to however sophisticated the league's record-keeping system is. There are certain things you can do; the league we work with is pretty good, but you can't always depend on them to keep all the records. And there are some sports leagues we work with that only provide the standings. Those are the times you have to be somewhat creative."

Since it's not feasible to serve as both video producer and statistician, it is important to gauge the sophistication of the record keeping at the planning stage. In Barszewski's case, each basketball and volleyball video averages about 45 minutes, while softball and football season wrap-ups can stretch to 90 minutes.

Each tape consists mostly of season highlights, but Barszewski also includes a full recap of every championship series and game. "Those recaps can sometimes be 10 to 12 minutes long, so the narration must be planned as you go," he said.

Barszewski, who used to do his own narration, has since arranged local sports personalities to provide the voice-over.

"As we're editing each video, we log it so we know exactly what's happening at that time. And we write the

continued on page 54



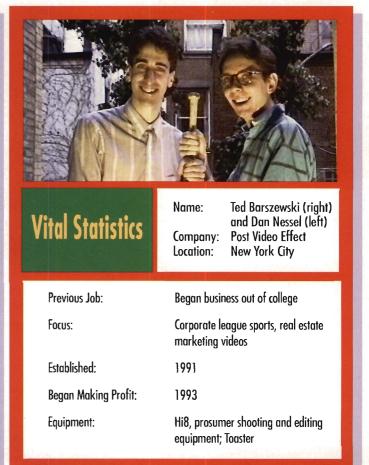
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Gary Freedline
Company:
Video Keepsakes
Location:
Miami Beach

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Freelance video editing
Focus:
Party, industrial videos
Established:
Approximately 1989, full-time
Began Making Profit:
First year

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FOR INFORMATION CIRCLE 136



Mirror, Mirror

script as we go, refining it later on. Every time we show a new scene, we have a line for that scene, pacing it out throughout the video," he said. Buyout music is used to cover dead space, so the end product puts even the most discriminating fan/athlete into the big-time.

For Freedline, an early stint as a freelancer with ESPN served as an introduction to the world of true broadcast production, and he uses the experience today. With help from an ardent Toaster professional in the Miami area, Joel

could get, like the Panasonic AG-450. Then, we moved on to the 455s. Now I'm using either Betacam SP or the JVC X2, which is a three-chip S-VHS camcorder," he said.

Freedline uses Betacam SP for A/B-roll editing and shows clients the finished work on S-VHS. In addition, he has devised his own system that permits him to preset edit in and out points, insert Toaster effects and walk away while the video auto-assembles. Returning three to four hours later, he said he could have a wedding video

edited to his specifications.

Pampered vanity is a better thing perhaps than starved pride. Joanna Baillie

As with any instance where the art community meets the business world, a satisfactory mix is difficult to achieve. It's easy to underestimate the amount of time it will take to make the production just right, and there is always a tendency to sell services short for fear of offending or losing a client.

Research and prior knowledge is critical.

Barszewski and Freedline both said it is vital to make sure you know just how much of your time and expertise will be required for a pro-

Both also agreed on the importance of doing much of the work themselves, especially at the beginning. While both use freelancers to shoot material at times for practical reasons, it can be difficult to communicate a creative philosophy to

an outsider.

MEMORIES

"We do all the work ourselves, except for some softball leagues where there are a lot of games going on at once.



Tessler, he learned the intricacies of the Amiga system and the Toaster. As his busi-

Video Keepsakes is prospering due to high-quality work and referrals.

ness grew, Freedline steadily improved the sophistication of the equipment he uses.

"We started out using the best S-VHS camcorders we

Music Can Make Video, but Beware

Vanity videos and music just seem to go together. From cruising on a Saturday night with the car stereo blaring to dances, parties and weddings, all of our best memories seem to be linked to a favorite song.

CBS has made a connection with the song One Shining Moment, which is played annually with the network's video montage of highlights from the NCAA basketball tournament. Moments after the completion of the

national championship game, while excitement is still pulsing through the veins of a nation of fans, winners and losers, the song's familiar lyrics (In one shining moment/you reach for the stars) seem to weave seamlessly with beautifully shot images of the heartbroken and jubilant, all consumed with the type of emotion only associated with the big dance.

Be careful, though. There are a number of land mines associated with

using music with videos designed to market to the public. The principle is simple: If you intend to make money using an artist's work, that artist is going to have something to say about it. The resources of a major network are bound to differ significantly from those of an independent producer.

In fact, Barbara Zimmerman of BZ Rights in New York said, "Almost anyone who is doing weddings, graduations and that sort of thing is using We do all the logging and editing of the tapes ourselves, though," Barszewski said.

"And it's very important not to underestimate how timeconsuming it can be. Say you go to a couple of softball games. The game itself is an hour and a half. Then you have to log that, and it can take another hour and a half. So that's three hours right there, and you haven't done any editing, graphics or voice-overs. So before you make any kind of deal with a league, you really have to be careful and figure out the hours to see if it will be worthwhile."

Freedline agreed. After researching the hours involved, his company sets a price for clients and gives them the full package. He tries to reinforce the fact that it takes a full day in the field. "And with the editing, although you do want to try to edit something in one day, you don't slap it together quickly," he said.

Freedline also emphasized the importance of conducting the entire process himself.

"If I hire an editor, he's going to do it his way. He's going to miss some things, and since he didn't shoot it, he's not going to understand the way you want it edited, no matter how much you explain," he said.

For industrial shoots such as non-personal video, commercial and television work, most producers prefer not to charge their clients on an hourly basis.

"For a 30-second spot, we know we're going to put in about four to six hours of editing. And if there's going to be morphing or any kind of 3D animation involved, then we're going to charge a little more for that. For a company [logo] fly-in, for example, we'll put it together for about \$200, and I'll prepare it prior to the edit session," Freedline said.

For his party business, Freedline hires freelancers as shooters, but only those with top-quality equipment and only if he's too busy.

Barszewski, whose Post Video Effect business is also involved in real estate, began with a shoestring budget and is now nearing the point of hiring interns.

And Freedline, who has made great strides since his

company's inception, admits to a profit only when pressed.

"In this business, you're never making a profit. No matter what you bring in, you always have to have something new. That's the thing about video production. You really have to love what you're doing, if you're going to try to really be the best and do creative work," Freedline said.

"Money has to be kind of a secondary thing. You have

to make sure you are making money, but that's not the only reason I'm in business. I don't like to take vacations, because this is my vacation. Business has been good, but I know a lot of guys out there who are struggling."

The key to staying out of that trap, he said, is to start slow and build yourself up gradually.



3D graphics and animation generate extra revenue.

"You have to get yourself known and begin to get referrals. Don't let things go out that you're not happy with, and by all means, don't give up your [regular] job. Not until you're built up to the point where you're literally filled up with work," Freedline said.

Another key, he said, is to get along with the entire community—including competitors.

"Don't step on people's toes and don't bad-mouth people. Just be concerned with the quality of your own work," he said. "There's always going to be someone better than you—and someone worse."

In other words, don't let your own vanity get in the way of a job well done.

Allen Edmonds is a freelance writer and desktop publishing specialist based in Kansas City, Mo.

music illegally. If they were to request music legally and do what they should, they couldn't possibly afford it."

There currently is simply no procedure for securing the rights to a wedding couple's four or five favorite records for use on a videotape for sale, she said.

"If you had five records, you would probably end up with \$5,000 to \$6,000 as your cost. And no one can possibly produce a wedding video and pay the music business that kind of money. There's just no channel for it," Zimmerman said.

ASCAP and BMI have designed what Zimmerman believes is a workable

plan for department stores, restaurants and other establishments that play music for the public air, in which the proprietors pay an annual fee for the rights to the music.

But with the exception of a few companies that market "buyout music," and the existence of "needledrop" music (for which the rights are paid by the song), there are few options.

Ted Barszewski of Post Effect Video uses buyout music for his sports-high-light videos.

"We've tried videos with real music in the background, and it works great," he said. "But there's just no way you could afford the rights to market your work like that."

Gary Freedline of Video Keepsakes, who uses the needle-drop music method, charges the client the fee, then handles the release forms.

"I run into a few problems with clients over that, because some will say that a competitor has all this music, and we just choose what we want and they use it. I have to handle them delicately because I don't want to accuse someone of copyright infringement," he said. "I just tell them that everyone has a favorite song, and I would have to be a music store to keep up with it all."



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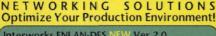


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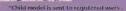
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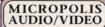
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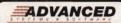
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FOR INFORMATION CIRCLE 101



From Script to Screens

A Sky Full of Stars for

Babylon 5

by Mojo



PTN CONSCIRTIUM, INC. 1996

7

abylon 5 Commander Jeffrey Sinclair's simple words from the show's pilot, "... and the sky was full of stars—every one of them an exploding ship," may sound like idle dialogue, but they ultimately led to the script for *And the Sky Full of Stars*, one of the more powerful installments of the science fiction series.

This highly anticipated episode features a flashback to the Battle of the Line, in which humanity itself was almost wiped out during a war with the alien Minbari race.

The script describes Sinclair's memory of watching his comrades and their ships lost in flaming tombs. He is left powerless to help and is the lone survivor.

At the start of the series, it is the most important event in the life of Jeffrey Sinclair and the most emotionally traumatic. The entire production staff of *Babylon 5* knew that portraying the Battle of the Line would be difficult.

It had to be a gripping, memorable sequence and although many people are involved with bringing a script to life, the special-effects team at Foundation Imaging was faced with the most difficult task: creating a large-scale space warfare scene on a limited television budget.

From Script to Screen:

Let's walk through the entire creative process, from story concept to post-production, to grasp the inner workings of episodic television.

Conception

Although And the Sky Full of Stars was shown as episode number eight, an early draft was written by co-executive producer J. Michael Straczynski long before the series began.

"It was the freshest in my mind," said Straczynski, when asked why *Sky* was written first. "In order to really portray

the characters in the movie properly, I had to have the events of the Battle of the Line very much in my head."

A scene from the pilot when a Minbari assassin tells Sinclair he "has a hole in his mind," as well as a long, detailed remembrance of the battle, hinted that these events were well thought out for inclusion in future episodes.

This will come as no surprise to fans of the show, who have long been aware that *Babylon 5* has a five-year story arc already mapped out, with small pieces of the story revealed each week.

Sky delivers a large portion of the puzzle by explaining some details about what happened during the Battle of the Line and why Sinclair has a 24-hour gap in his memory.

Even though Straczynski had envisioned the battle scene years ago, the final version bears little resemblance to his original concept.

"I thought we would be closer to the earth and see it in the shots and have it as more of a background—I certainly envisioned a lot more ships and more of a frenzy of activity. That said, however, I am not in any way disappointed with what we got," he said.

What he got was the vision of special-effects director Ron Thornton, who actually had

no idea what the battle would look like upon reading the early draft of *Sky* more than a year ago.

"At the time we really didn't have any designs for fighters and we didn't know

what anything was going to look like, so I couldn't really picture it," Thornton remembered.

"When we first got into [the series] we really had no idea how we were going to get around this whole weightless space battle and make it interesting."

However, a space battle had to be created for the program's first episode, *Midnight on the Firing Line*, so Thornton and his staff were challenged by having to develop a true-to-life galactic dogfight.

What were the results of their efforts? Ships moved and fought using real

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Layout shot of the battle shot pictured below.



Notice how the angles and lighting make the ships seem ominous.

astro-navigational physics, and the entire scene proved very exciting.

Upon seeing the finished sequence, Thornton had his first spark of inspiration for the Battle of the Line, although it was in a much different direction than one might imagine.

"[The Battle of the Line] is so important to the character of Sinclair, it had to be different, and it had to be more disturbing. It couldn't be a sort of shootem-up, *Star Wars*-type space battle," Thornton said.

He discussed with Straczynski his ideas of how the flashback should be portrayed. "I wanted a slow-motion feel," he explained, "that really graphic, guys-in-the-trenches feel rather than the Nintendo-type space battle."

Did he go for the concept? "Show me," was all Straczynski saicl.

During the next few days, Thornton created a quick test of what he envisioned the Battle of the Line to look like—a slow-motion, closeup view of a Starfury (the Earth Alliance space fighter) slowly banking towards the camera, narrowly avoiding a nearby explosion.

The test effort captured the essence of his concept and sold the idea to the show's creator. "I think it does hit the correct emotional chords," said Straczynski, referring to the flashback as it was realized.

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"You can either take the stance of going for big effects or striking the emotions in the core of the scene ... It focused in on the one character [Sinclair] and what he was going through, which is probably better in the long run than seeing one more large-scale battle scene," Straczynski said.

Having decided upon a way to tell the story, Thornton and his Foundation crew had to figure out how they were going to portray an interstellar fight scene—complete with alien ships, explosions, laser-like energy weapons and computer-generated pilots. In addition, the scene was shot in a closeup camera angle and slow motion.

Pre-production

Hiding is a common practice in special effects. If a model isn't up to snuff or has a flaw, you simply avoid closeups or have it fly past the camera so quickly that no one will notice the imperfections.

However, the design for the Battle of the Line was a special-effects nightmare, since the closeup, slow-motion concept meant that everything had to be of highenough quality for close scrutiny. This meant existing models had to be detailed and fine-tuned, as well as new models created with stricter standards than usual.

Using a pre-3.0 version of LightWave's Modeler, Thornton designed and built the most important new models: the Minbari war cruiser and fighter.

"It was something I had been thinking about for a long time," said the veteran craftsman of the final design. "We had done something like it in the pilot with the Vorlon ship: that was the organic look but very beautiful.

"I wanted something that had a bit of butterfly in it and had some resemblance to the Minbari structure—like the bone on Delenn's head. I also wanted it to have a verticality, like a sunfish—towering rather than being a broad destroyer. "It's more graceful that way, I think, and it sort of sums up the Minbarl. They have to be graceful yet threatening at the same time," he said.

Thornton also recalled deciding on the color scheme for the Minbari ships. "Blue is supposedly synonymous with the spiritual side of things—it just seemed to make sense. It's not an angry color. Red is a danger color; green is a sort of camouflage color, very militaristic; grey is also militaristic, but blue just

Demolition Made Easy

Some of the most spectacular effects in the *Babylon* 5 episode *And the Sky Full of Stars* are the up-close and personal demolitions of the Earth Alliance fighters. The person responsible for these sequences was Foundation Imaging's Mark Kochinski.

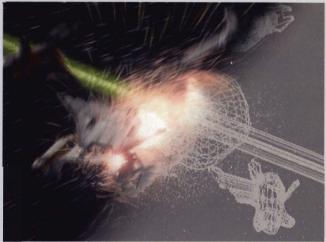
"Nobody else wanted to deal with it," he explained, referring to the task of blowing up the fighters. "Explosions were kind of complicated, but I was naive enough to look forward to it, because it was a great opportunity to show off a little bit," he joked. "Of course, it turned out to be 10 times more complicated than I thought it was going to be."

Kochinski was somewhat prepared for the role by his contribution to *Midnight on the Firing Line*, in which he developed an explosion effect. "That seemed to convince everybody that I was the ideal person to handle the explosions on *Sky*," he said.

His first step was to take the existing model of the Starfury and slice it into several, jagged-edged pieces in Modeler with Boolean functions. He would then save each piece as a separate object and reassemble them into a cohesive fighter in Layout. When rendered, it looked like a normal fighter, until he began to move the sections apart; done quickly enough, it would appear to be the flying debris of an exploding fighter.

He admits that a lot of trial and error occurred before things started coming together. "One of the advantages of working in 3D [over traditional special effects] is that you can redo things over and over until you get it right," he explained. "And one of the advantages of explosions is that you've got so much stuff going on at once that a lot of things can cover up your elements."

The 3D pyrotechnician is referring to the multitude of particles, explosion objects and lens flares used to



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Behind the scenes of Kochinski's explosion effect.

cover up some of his shortcuts in creating the effect. An explosion object, consisting of a semitransparent sphere mapped with sequential images of fire, was the base element of the fireball. On top of that were several lens flares to make the sphere seem to glow and many layers of particles to simulate flying sparks.

All these elements were pieced together and parented to a single null object and saved in its own "fireball" scene. After creating a shot of a fighter breaking apart, Kochinski would simply load all the fireball elements from that scene using the Load from Scene feature in LightWave's Object menu. He could then parent the fireball's null object to his exploding fighter without having to re-create the chaotic fireball for every shot.

"It took about a week to work everything out," he recalls. "But after that each scene came together fairly quickly."

Although very happy with the final result, Kochinski admits that it could probably be done better if the episode was made today.

"While that explosion sequence worked well for its time, we're already way past it in developing more effective methods. The problem with working on a show like this is that we always want to top ourselves!"



From Script to Screen:

doesn't fit anything," he explained.

Initial tests of the cruiser showed that the lighting angles were too dark. Without the benefit of the usual blue nebula seen in much of *Babylon 5* (the battle takes place in our solar system), the ships could not be silhouetted against a bright backdrop.

Thornton wanted to keep the lighting on the cruisers dramatic, so rather than increase the light, he added self-illuminated windows to the model that helped define the shape of the craft without actually seeing any more of it.

The Starfury model needed the most detail, since the script called for numer-

ous closeups of the fighters being destroyed. A high-resolution version was created for these shots, while less memory-intensive versions were used for background ships. This was necessary to help balance rendering times, since the detailed version took longer to generate.

Foundation Imaging Roll Call

It is well-known that Foundation Imaging was founded by Ron Thornton, visual effects supervisor, Paul Beigle-Bryant, systems manager, and producer Shannon Casey.

However, locked in a dungeon and strapped to a couple of Video Toasters are the unsung heroes of the growing company.

Mark Kochinski, animator/technical director: Mark has worked in computer animation for seven years and film/video production for 10. In addition to his contributions to *Viper* and *Babylon 5*, he has worked on features with the company Fantasy II and games shows with Pasetta Productions.

John Teska, animator/technical director: For the past five years, John had been leading a dual life. By the light of day, he has created monsters and miniatures on such films as *Demolition Man, Death Becomes Her, Alien 3* and *Wolf.* By night, he was mastering computer animation on his Amiga. After completing several freelance projects, a call to Foundation Imaging led to a position working on *Babylon 5*.

Steve Pugh, systems engineer/programmer: Steve has been program-

ming for the last five years and involved in special effects for almost 10. He currently holds more power at Foundation than should be allowed. He oversees the rendering and delivery of special-effects shots, is the author of Foundation Imaging's render engine-controlling software and writes timesaving utilities. He also maintains the data network.

Tim Wilcox, animator/technical director: For the past year Tim has been working at Foundation Imaging on *Babylon 5* and also contributed to the pilot episode of *Viper*. Previously,

learning Sculpt 3D/4D.

Mojo, animator/technical director/Elvis archivist: Mojo's work helped win an Emmy award for the Babylon 5 pilot, yet he humbly refused a statuette of his own. He is amazed that he actually gets a paycheck for animating. Apparently, so is everyone else.

VTU

he spent several years making indus-

trial and commercial videos as well as

working on numerous computer ani-

mation projects. He got started in 3D

in 1988 when he bought an Amiga

2000 and tackled the daunting task of

John Teska, animator/technical director



Mark Kochinski, animator/technical director



Tim Wilcox, animator/technical director



Steve Pugh, systems engineer/programmer



Mojo, animator/technical director

The initial test also revealed an unforeseen problem: an empty cockpit. Although the fighter itself looked great in closeup, it could clearly be seen that there was no pilot inside the computer-generated model. It was decided that a 3D pilot was needed, and Foundation animator Tim Wilcox took on the project.

Over a two-week period, he constructed a fully articulated, spacesuited fighter pilot, complete with image maps of a face and the actual spacesuit used by the actors. The fighter pilot was animated via hierarchical movement with bones controlling finer actions.

Other details, including a seat, were also added to the cockpit, and several red lights were used to illuminate the miniature model-within-a-model.

It may be hard to see the detail inserted into the cockpit, but the consensus was that viewers would readily notice its absence (the opening sequence of the episode *Soul Hunter* episode demonstrates this).

However, if *Sky* is watched carefully, you can see the miniature pilot throw his arms in front of his face moments before Sinclair attempted to ram the Minbari warship.

This level of detail and care is unusual for a weekly television series, often due to the hectic pace of TV production. *Babylon 5* insiders consider this to be the first time in television history that a weekly, low-budget program has been able to tell a story so visually exciting with so few restrictions.

This is due, in part, to the cost-effective, digital special effects produced with the Toaster and other personal computers. Programs such as *Star Trek*, which have always used traditional and expensive special-effects techniques, have been very limited in how they tell stories.

Quite often, space-faring action is described by characters rather than shown, something *Babylon 5* 's creator wants to avoid.

Thanks to Foundation, Straczynski thinks he has more freedom in his story-telling than most science fiction shows of the past.

"Knowing what we can do with the computer graphics, we have broadened our sense of what we can and can't do with the show," mused the *Babylon 5* creator.

"Before, I would often call and ask if we could or couldn't do a shot. Now I feel that almost whatever we can describe can be realized one way or the other, so in that respect [the computer animation] has had a very freeing effect on the show," Straczynski said.

Assisting the effects team is a more flexible schedule. Straczynski has generally alternated effects-heavy stories with less complicated ones, giving the Foundation crew more time to work on the detail that helped make *And the Sky Full of Stars* such a memorable episode.

Production

The first major shot of the Battle of the Line involved the unveiling of the Minbari warship. It eclipsed the sun and began to engulf the Earth Alliance fleet in a blaze of destruction.

Even though it consisted of just a few lines in the script, this shot took several days to orchestrate. It started simply enough, just a Minbari cruiser slowly moving from right to left, gradually passing in front of a lens flare designated as the sun. That was the first problem.



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From Script to Screens

Since the cruiser was moving in front of the sun, it meant the light came from behind the ship, making the camera's view quite dark.

I had no choice but to do what TV people call cheating. I set the light source to show only as a lens flare and not cast any actual light.

I then created a new light source placed at an extreme angle to the warship, but not directly behind it.

This revealed a rim light along the edge of the cruiser that, although technically wrong, looked right. Fortunately, we had established a light-blue fill light (since the battle takes place near the earth), which helped illuminate the rest of the object.

Then things got tough. After all, it was a battle scene, and I wanted to fill the frame with as much action as I could. I couldn't get *Return of the Jedi* out of my head and began the long, arduous task of peppering the scene with Minbari energy beams and zipping, exploding Starfuries.

The Minbari death ray was loaded and parented to the cruiser so they would move together. I then positioned the head of the beam on top of one of the many gun ports located around the ship, so it would appear to be emanating from that spot.

I figured the beam should be onscreen for about 15 frames, so I set a dissolve envelope to make it visible for only one half-second at a time.

For added impact, I also placed a light at the head of the gun port that would flash on with a lens flare for three frames when the gun fired. This was further enhanced by giving the light intensity an envelope synchronous with the flare.

A sharp falloff on this light meant it would only illuminate the area around the gun port, and everything was timed with the envelope for the beam dissolve.

Of course, these steps needed to be repeated for every instance of the beam firing and for every beam that was in this shot. That would be five beams and about 20 shots or a lot of tedious work—but the end results were worth it. Without the constant, rapidly firing beams, the sequence would have lost a lot of its kinetic value.

Next were the exploding ships. I had several fighters either already in frame or

zooming into frame throughout the shot.

The *Babylon 5* mythology is very clear that the Earth Alliance never stood a chance. I wanted to exemplify this by having the big, hulking Minbari cruiser effortlessly wipe out everything that came near it—like swatting flies.

My favorite moment in this shot took place when the Starfury that had rocketed up from off-screen swoops towards the cruiser (as if on an attack run) and just as it got close was destroyed.

For a brief moment, light from the explosion bathed the lower part of the warship, revealing a little more of what the ship looked like. The distant explosion was created through a combination of single-point polygons (commonly referred to as particles) and a lens flare. Two sets of particles had their size set to zero and were parented to the fighter along with a light (with an intensity enveloped to zero). These elements traveled with the fighter until the previously mentioned beam dissolved in and intersected with the ship, simulating a hit.

At this moment, the particles (approximately 30 frames worth) were expanded



to a size (about three or four times the diameter of the fighter), and the light intensity with its lens flare was enveloped up quickly and brought down slowly (to look as if the explosion was dying down). The particles were also dissolved slowly to give the appearance of dying sparks. The motions and envelopes for each set of particles were then offset by about five frames, simulating a multilevel explosion.

During the explosion, while the lens flare was at its brightest, the fighter object was dissolved out over a few frames. This light also needed a proper falloff, so as only to illuminate part of the cruiser; otherwise, it would have bathed the entire ship with light and lessened the sense of scale.

Numerous keyframes and envelopes were needed to choreograph each explosion, and three of them occur in this particular scene. Several test animations were also run during the course of this shot and usually limited to a small area of the screen to check the timing of an explosion.

Keep in mind that this complicated process is more or less the day-to-day life of a special-effects animator. As of this writing, a two-part episode of Babylon 5 is being produced that calls for more than 100 special-effects scenes like this one.

However complicated creating shots like this may be, it is still only an intermediary step. Afterward, the shots are rendered and delivered to the production company.

Post-production

Part of Thornton's original vision of the Battle of the Line was that it be in slow motion, accentuating the drama and visually establishing that it was a flashback.

However, instead of normal slow motion, he felt the look of step-printing would be more appropriate. This process shows every other frame twice, giving a pseudo slow-motion, dreamy quality to the film without actually slowing down the action. It wasn't actually slow motion at all, but gave the film a soft strobe that triggers a similar emotional reaction. Step printing actually made life easier for Foundation Imaging. since it meant that only every other

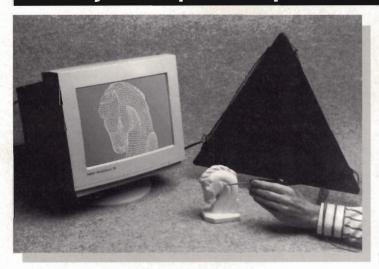
frame needed to be rendered. Each frame was then recorded on video twice, so it would play back at a normal, 30-frame-per-second rate.

It was established at early production meetings that the live action footage of the fighter pilots would also be step printed, assuring that it would match the look of the special effects. However, this did not happen and was the cause of some confusion within the production. Some felt that the switch between normal and step-printed scenes was too jarring, while others seemed less affected by the difference.

"They couldn't come up with a liveaction effect that [worked well visually when] intercut with our footage," explained Thornton. "Initially they were going to step print it, but apparently it didn't look good."

Thornton confessed that the sequence would have worked better for him had the live action been altered, although Straczynski offered insight as to why it was left untreated. "When you're looking at small objects on the screen," he explains, "a step print gives it a very slight, jarring look

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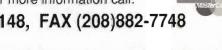
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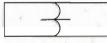
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From Script to Screen:

which is very nice and dreamlike."

He felt that while this effect worked well, it was problematic for the live action. "When you go in close on someone and their face fills the frame, you suddenly get these very weird smears that are very noticeable and very distracting from the action. It got in the way of the story," he said.

After the episode was finished, Straczynski reasoned a fair justification for the discrepancy between scenes. "[The step-printed footage] is Sinclair's conception of what was happening around him because, in reality, he couldn't actually see it. His point of view is inside the ship. When you are inside the fighter, seeing what he actually saw... it is sharper. So it worked to our advantage by making clear what is his point of view and what is his recollection," he explained.

Problems like this are not uncommon in the hectic world of television production. And the Sky Full of Stars, as well as the entire first season of Babylon 5, has had its share of challenges, all of which were met and learned from. The entire crew, as well as the cast, now look forward to drawing upon these experiences

to make future episodes of *Babylon 5* even more exciting.

Coming up Next

Although Straczynski makes the final decisions, it is undeniably a team effort which thrives on input from every member of the staff. From producers to production assistants, *Babylon 5* could not exist without the contributions of so many talented people.

Thornton clearly enjoys this opportunity to help shape this fictional future. Over the course of *Babylon 5*s five-year story, there are visions of his own that he would like to create for the series.

"I want to see some worlds. I want to see something different," contemplates the futurist. "Like a working asteroid mining and smelting complex. Say you were going to take advantage of a planet's mineral resources—how would you dig up all that stuff and get it into space? That would be a great hardware design problem to show all these huge, earthmoving pieces of equipment. It would sum up the general philosophy we've had about the earth technology in *Babylon 5*—it looks less like it would be

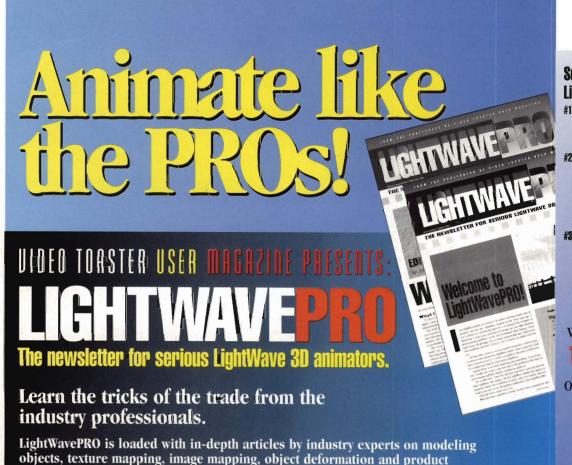
made by Lockheed and more like it would be made by Caterpillar—stuff that looks like it really works."

Although there will definitely be a lot more special-effects hardware in *Babylon 5*, Straczynski stressed that his show will always rely on storytelling to convey his epic.

"The extent to which the effects serve the story is, in my mind, unparalleled and I am very happy with that," he states. "But it is not an effects-driven show, nor will it ever be an effects-driven show—it is a story-driven show," he said.

Regardless of what drives *Babylon 5*, if the current combination of stories and special effects are any indication of what is in store for the future, viewers can certainly count on a terrific ride.

Mojo's life was already chronicled in this story, and he refuses to divulge any more information. However, he would like readers to know that he has yet to receive any fan mail. Lee Stranahan may be the World's Smartest Toaster Guy, but is he the cutest? Let's all show Mojo we care by dropping him a postcard in care of VTU today!



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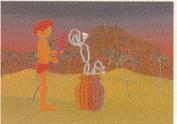
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Looking down the

Information Highway Mhat It Means for You



by Rick Lehtinen

y first action after receiving this reporting assignment was to gather and research all the unique material I could find about the much-touted National Information Infrastructure (a Washington, D.C. term for the information highway). Then I attempted to form it into a coherent, informative package.

Then it hit me: It's not as important to write about what the information highway is as write about what it *means*. Facts would be easy to organize yet boring to read (after all, many *VTU* readers are cyberspace pioneers). Instead, I want to pack a heavier punch and offer an analysis on how the information highway can affect the desktop videographer.

I hope this article will help Video Toaster users answer two main questions. First, will the information highway run us over? Second, if the response to the first question is no, can the info highway help us make more money? However, before we reach our final destination, it's important to make a few observations—some of them hopeful, some caustic.

Observation 1:

The potential for the information highway is huge.

Review of the Numbers

To see how important the information highway is, we will compare its market share to that of the existing video marketplace. The information highway has the potential to turn over the video production industry. Growing as predicted, it could create a demand for certain forms of video production that is 100 times larger than any market in operation today. I'm not saying that it's time to buy something you can't afford in anticipation of your new monthly income, but the time is ripe to explore new opportunities. Let's get started by estimating this Total Available Market (TAM), and then predict what it means for us.

continued on page 71

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Broadcast

One of the market segments that pays the most for video production today is broadcasting. There are about 1,300 full-power VHF and UHF TV stations in the United States. Being generous, let's throw in 700 low-power TV stations (LPTV), which are essentially translator stations that have been given the right to run independent programming. That's 2,000 TV outlets.

Production companies feed programming to these outlets. Most of this programming is commercial advertising, although there may be some locally produced full-length programming as well. It used to be a rule of thumb that for every three TV stations in a city, you could find two production houses. With the advent of the Video Toaster and other low-cost production tools, that number has increased. Let's say that today there are three production outlets for every two TV stations. That makes 5,000 outlets for all of broadcast TV and production combined.

Cable

Next comes cable. Cable systems pass roughly 90 percent of the television homes in America, although less than 70 percent of homes actually subscribe. Not all cable systems do a great job of living up to their requirement of providing community access programming (a la Wayne and Garth's Wayne's World show). The recent Cable Act, however, requires cable systems to allocate in equal thirds their capacity to carry local TV outlets, local-access programming and whatever else they want (likely premium services such as movie channels and pay-per-view sporting events). In other words, a 36-channel cable company that may have once grudgingly sacrificed a single channel to the community will now have to cough up 12. A 112channel system will have to deliver 38. The information highway's touted 500-channel system will have to make more than 150 channels available for local access. This means a mountain of new programming is needed.

However, before you imagine cable operators ringing your phone off the wall, realize that the cable industry may soon be in an uncomfortable position. By the time these words are printed, a direct satellite TV service should be transmitting from a huge facility just outside of Denver. If all goes as planned, subscribers could watch via satellite most of what the cable companies currently offer. They will be able to cherry pick, however, meaning that if they want the Financial News Network, they subscribe to it without dragging along and paying for 12 other choices. This is a competitive pressure that will force cable systems to realign their rates. The information highway may bring more demand for programming, but there may be less revenue to fund it.

Let's chalk up 10,000 cable outlets, although there may not be as much revenue in the future.

Corporate and Industrial Video

Many video users are found in the business and industrial sectors. For our purposes, we will include medical, educational and governmental (including military) video. These outlets are harder to define, because you can't just look for red and white antennas. You can get an approximate size of this market, however, by looking at the circu-

lation of several magazines that serve it, and then guesstimating the average size of a shop. I'll save you the math; add 35,000 corporate and industrial sites.

Desktop Video

The installed base of Video Toasters, and two other desktop video systems that work with real video, not just computer facsimiles of video, are the next largest step on the ladder. Rounding up slightly, there are approximately 80,000 Toaster users, 10,000 Fast Electronic's Video Machine users and 1,000 Matrox Studio Users. It is possible that some facilities have more than one system, which lowers the number. There are also conventional desktop solutions which raise it. To keep it easy, let's round up to 100,000.

For Old TAM's Sake

That's the whole picture. Everybody who ever opened up a dealership, displayed in a booth at NAB or Image World, or printed up business cards or advertised in a magazine is chasing after someone in this marketplace. Let's see what we've got so far:

Broadcast	5,000
Cable	10,000
Corporate and Industrial	35,000
Desktop Video	100,000
TOTAL	150,000

Now, some of these are program consumers, and others are program producers. We can mix apples and oranges in this manner if we realize that everybody in this figure is either a potential customer, or else they are a facility that has a customer. Either way it gives us a handle, if not a completely scientific understanding, of the market.

New TAMs Are a Comin'

Now let's assume that video communications will be at least part of the traffic on the information highway. How big is this highway? As computers are the main tool for motoring right now, let's start by figuring out how many computers are available. Intel estimates there are about 160 million 80X86 PCs worldwide, with new sales expected to bump that total up to 220 million by the end of next year. This number is augmented by those computers with 68040 processors. Together, this puts computers in the same realm as telephones and TVs. Industry sources show Apple to have been the leading shipper last year, followed closely by IBM and then the big name clones (Leading Edge, Compaq, Dell, etc.).

Very few of these computers are coal-burning relics. United Press International reports that revenues from the sales of personal computers in 1993 were up 16.2 percent to 866.3 billion. This means that nearly 25 percent of the world's computers were sold last year and roughly 20 percent the previous year. They are certainly powerful enough to travel the information highway. Also, sales should remain brisk.

The Intel Pentium chip is now in mass production, allowing prices to drop on the 486, while at the same time, the Pentium's successor, P6, has been announced. Further, the PowerPC chip is coming along, and the



promise is that it will allow large-scale upgrades of existing machinery.

Let's say that about half the desktop computers are in the United States. If only 10 percent of these computer owners are interested in video applications, that's 15 million computers. We earlier estimated that the market for all forms of video production was about 150,000 facilities. Note that this is just one percent of the coming market.

We can now go on to estimate the rate at which these new users will come on-line. This can help tailor our service to meet their needs.

On-line Services

The information highway will reach consumers first via the on-line services. The United States is currently served by five on-line services, which have a total subscriber base of nearly five million. Writing in the Washington-based *Information and Interactive Services Report* newsletter, analyst Gary Arlen reports that the number of subscribers to on-line services jumped 31 percent last year to 4.5 million. More than 700,000 new users signed up during the holiday season alone. If the pace continues, the on-line industry could double within 18 months and end up as a \$1 billion business.

At this point, only two services, Prodigy and Compuserve, boast more than a million members. Genie and America Online both have about 500,000 subscribers each and Delphi comes in at about 100,000.

The industry has undergone some growing pains. On Feb. 1, America Online president and chief executive officer Steve Case sent an open letter to his subscribers in which he apologized that "hypergrowth" from 300,000 to 600,000 subscribers in just a few months meant that some users had to attempt access more than once before connecting. Case went on to explain that new software was being installed to ease the problem.

Prodigy seized the opportunity to call a telephone press conference, in which they talked up their "intelligent network" (they use servers in more than 200 cities, and nine out of 10 requests are handled locally), and indicated that their network had gracefully handled similar growth over a similar time span. Prodigy spokespersons expressed confidence that their network could handle up to 40 million users.

Delphi, a distant sun known primarily as an Internet-gateway-for-hire, recently got a shot in the arm. The company was purchased by Rupert Murdoch's massive information conglomerate, The News Corporation. Now part of a \$10 billion media company, Delphi has nearly endless opportunities to develop new information products.

In fact, throughout the industry, deals are beginning to fly, including several linkages between such giants as Microsoft and Nippon Telephone and Telegraph, on-line providers and cable networks. Already, some analysts have discussed the possibility of video delivery via on-line services before year's end.

Internet

Despite the double-digit growth offered by commercial on-line services, the Internet still serves four times more subscribers and is poised to grow exponentially. This loosely affiliated network of networks began under the auspices of the Department of Defense and has continued under the National Science Foundation. It began as a means of linking universities and other research centers and has since taken on the characteristics of a bale of hay wire stretching from coast to coast.

Views about the Internet are mixed. Some users claim to relish the freedom of information exchange and the ability to find tidbits of information and stimulating forums in unlikely places. Others feel it is an unruly mess that is undocumented and disorganized.

Within the past two years, the Internet has exploded. While gaining access has been difficult for some, gradually more corporations started showing up, along with access-for-hire service providers such as Delphi. Recently, it has become possible for almost any group to sign on (there is even talk about a @NewTek facility). Some analysts now bet that all on-line services will support full Internet access within 18 months. Most services support Internet messaging already.

As more people sign on, there is some doubt that the unstructured backbone can handle the load. This is, in fact, one of the reasons behind the need to nationalize the network.

Education

One of the goals of the information highway is to provide educational facilities with easy on-ramps. Although education networks, such as the Mind Extension University and California's Coast Community College, have existed for years, there is an apparent trend for even conventional educational facilities to use networked computers.

San Francisco's California Polytechnic State University (Cal Poly), for instance, recently announced plans for its "virtual university." The system will provide students with on-demand access to full-motion video lectures, demonstrations and self-paced tutorials, electronic mail and conferencing. It will also give faculty access to multimedia components, such as video clips and sound bites, to develop the network courseware.

According to university administrators, the new system is not designed to replace faculty and traditional class-rooms. Instead, the system will add another dimension—"education-on-demand"—capable of delivering real-time, two-way interactive video and multimedia course materials to students at home, in the workplace or on campus.

Dartmouth College already has a sophisticated network for higher education. All freshmen are required to purchase Macintosh computers, and all campus buildings, dorms included, are on the network. The student center even has drops in the lounge areas so students can sign in from laptops.

Dartmouth students can turn in assignments by E-mail and access library references. More than 70,000 messages travel daily over Blitzmail, as the network is known. That society needs to become acclimated to such hi-tech information systems was evidenced early this year, when an anonymous hacker impersonated a department secretary and canceled a midterm exam. Nearly one-half of the class failed to show up.



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Educational use of the information highway represents mainstream acceptance. This is important to \emph{VTU} readers, because it represents an important initial market for video productions.

Games

Just as some folks are today confused by computers in general, there will likely be several technologies coming soon which will cause even the cyber-experienced to balk. (Biotechnology, for instance, is said to offer some network possibilities that are both wondrous and chilling.) At first glance, such techno-fear might seem to damper the growth of information-highway applications. However, game vendors are aware that the key to the future lies with the citizens of the future. (The power of gaming as a means of breaking down fear-of-technology is apparent to any parent whose kids own a video game.)

The info explosion, in fact, includes video games. Newer toys will be network compatible. Atari, for instance, will soon roll out a futuristic game machine that uses 64-bit technology, called the Jaguar (\$200). Jaguar features 24-bit color and can create 3D graphics in real time, including shading and texture mapping. The audio system is 16-bit stereo, and includes life-like voice processing. There is also an available double-speed CD drive peripheral.

The Jaguar has a built-in on-ramp to the information highway. An expansion facility is provided that will someday couple the unit into telephone or cable systems.

Entertainment

For those who are not easily electrified by games, there is a second path—entertainment. Philips Media—a company that supplies Compact Disc-Interactive (CD-I), has plans to distribute 30 films from the Metro-Goldwyn-Mayer Inc. and United Artists libraries on CD-I. Sanctuary Woods Multimedia in Vancouver, B.C., says it has signed a licensing and development deal for CD-ROM comedy software with the Comedy Central cable network.

According to the Software Publishers Association, more than \$100 million worth of CD-ROM software was sold in 1993. About 50 percent of that consisted of games and home-education software. Many of the playback devices required for this media are capable of driving the information highway.

A Call to Action

By its sheer mass, the information highway will have an accelerating effect on the desktop video production industry. The trick to finding the high road will be two fold. First, anticipate the needs of definable segments of users. This is not hard if you review where the growth will be, and then put yourself in the situation of the average user.

For instance, video clip acquisition and playback will be a large portion of the information highway traffic. Video clip production requires desktop video production in three ways:

- 1. Someone needs to shoot the footage.
- 2. Someone needs to edit the footage.
- 3. Someone needs to provide "continuity"; that is, jazzy

openings and closings, which follow the theme of the presenting organization.

This type of production is not necessarily as satisfying as producing videos that right wrongs, expose perils and make the world a better place, but the market could be huge.

Observation 2:

One of the primary tools for gathering images for the information highway is the camcorder. One of the primary tools for editing these images will be the VCR.

Of the 97 million households in the United States, 21 percent have camcorders. One in five people on the street record and play back images on videotape. Twenty million Americans can't be wrong; it is hard to find any other handheld video acquisition device that can record as high a quality an image, for as long a time and for as low a price as a camcorder.

Unfortunately, not everybody shoots straight. Some scenes turn out worse than others and need to be shot again. Also, related events may occur on different days. This means that no matter how carefully one shoots, recorded images on tape may end up out of sequence and need to be edited.

There are 92 million VCRs in the United States. (Ninetyone percent of households have one.) VCRs are selling at a rate of about 12 million per year. This means, unlike computers, that most of the decks in service are not the latest generation. If we assume that to successfully edit video requires better-than-average equipment, then the odds are good that there is a pent-up demand for editing videotapes.

Enter the Competition

While the computer industry seems fully aware of the potential impact of the information highway, the video industry is like the poor guy who was thinking of adding a banquet room on his diner just off Route 66. There are short-term profits in the manufacturing of equipment for video production, but the winners over the long haul may be the computer folks and their telecommunications cousins.

One solution is to adjust to the times and tailor your work to meet the opportunities the information highway will bring. Another is to take heart and know that for the next little while video equipment will offer superior images at better prices than anything most computer systems can do. And when the time is right, you will still be able to join the computer crowd with equipment du jour, armed with image acquisition phase skills (computerese for being a good shooter), and a good eye for editing.

A final note: Nowhere here have I advocated fighting against the times, denying that there will ever be an information highway, or pined for the good old days when video was king and broadcast engineers were princes. To plant our heads in the sand in this manner would be the first step in burying ourselves.

Most of the preceding information was presented to demonstrate the potential impact, by its sheer mass, of the information highway on the video production market-place. Next month we will consider some of the other ramifications of life along this highway.

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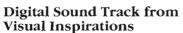
Digital Sound Track and Sequel

by R. Shamms Mortier

reat video is a combination of sight and sound, so it's no surprise that Amiga producers pay as much attention to audio as they do video. These media of communication have an inextricable bond similar to the relationship of rhythm to jazz: It's difficult to sustain one without the other.

In this article we'll take a look at two very different sound programs for the Amiga. One offers a fast and sharp way to write sound

effects to tape, while the other is a comprehensive music program that can accommodate a composer's wildest dreams.



Creating an entire list of utilities for the Amiga, Visual Inspirations' Digital Sound Track (DST) is the company's entry into the Amiga audio spectrum. DST (\$99.95) is best described as a model of simplicity, from its screen design (which should take about 20 minutes to master) to its load/save attributes (which will add about another two minutes to the learning curve). However, that very simplicity hides a wealth of useful productivity options beneath the interface's surface, all waiting to pop up and meet your needs.

The Interface Screen

There are two main parts to DST, each with its own section of the interface screen. The top of the screen displays 10 rectangular areas, each dedicated to one of the 10 Amiga keyboard function keys. Ten separate samples (whose length is dependent only on your RAM capacity) are loaded into each of these boxes representing macros for the associated function keys. The associated sample's waveform appears in the box as well. From there, by depressing the actual function equivalent on the keyboard or by placing the cursor and clicking the left mouse button over one of the screen areas, you trigger the sound loaded into that area.



Since the Amiga is able to play four sounds at the same time through its double stereo sound channels, you can create an audio landscape with sound levels layered upon each other simultaneously (as long as the samples are 130K or smaller).

Below each sample area are two readouts. One is a volume readout (0 to 64) changed by a slider beneath each panel. The second is a timing readout that tells exactly (in hours, minutes, seconds and frames) how long in SMPTE the sample is. Sounds can be looped by simply press-

ing the Shift key at the same time a sample is activated. DST plays sampled sounds and also SoundTracker/Noise-Tracker/ProTracker MOD files. It's quite an auditory experience to hear a crow sound its call into infinity. Clicking once on the sample box ends the loop.

Samples larger than 130K (such as entire song tracks) can be faded out in four to five seconds by using the space bar. The 10 sound boxes are arranged consecutively in stereo pairs, fostering stereo recording too.

But that's only the half of it. The bottom portion of the screen is dedicated to making the audio aspects of DST slave the videotape and associated visuals. If you have the new OpalVision modules or own an IV24 from GVP, you can select a picture display of the running tape in a reserved window at the bottom left. Obviously, this makes the neck craning usually associated with insert-sound editing a thing of the past.

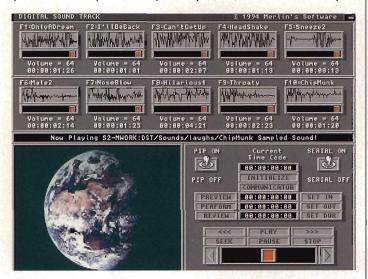
Two associated scripts are written to the S directory on your system's hard drive that allow DST to communicate with either board. This PIP display is turned on and off by a toggle switch graphic at the bottom right of the DST screen. Those working with non-Opal or IV24 systems can still use a monitor attached to the Out line of their recorders.

DST is fully capable of interfacing with your recorder through the serial port. Another toggle switch initiates the connection, allowing you to have complete control over serial-connected decks right from the software. The Initialize command strings that interface with different decks are referenced in the manual. I use the Sanyo GVR-S950, which is one of the decks supported by the software.

You can even bypass the DST software and talk directly to the deck using the Communicator button. Standard commands like Fast Forward, Rewind, Play, Pause and Stop are supported.

More esoteric commands suited to specific decks can also be typed in. Seek allows you to type in the SMPTE reference code to access any point on the deck, and the machine's jog shuttle can be controlled from the screen (forward or reverse) as well.

To top it all off, you can set the insert In, Out and (when necessary) Duration points. You would only use Duration if you were unsure of where to set the Out point in an edit. A separate Preview module allows practice edits before committing to record, while Perform sets the record process in motion. Review performs an actual playback. A Config file in your S directory can always be updated, so the next time you



Digital Sound Track's interface display is simple but very elegant, showing a picture-in-picture frame from a video while at the same time keeping a loaded bank of 10 separate sound samples ready for instant insertion into the soundtrack.

use DST the same sound files are automatically loaded in case your edit session is long or interrupted.

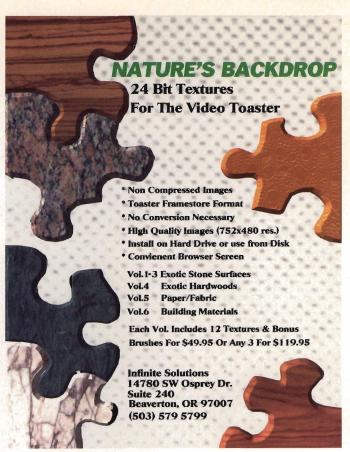
DST's manual is only a dozen pages, but no more is needed. A separate disk loaded with sampled sounds accompanies the program. This is one of the strongest utilities around for inserting sound over video, especially if you're a Sanyo GVR-S950 owner.

I used the software on an Amiga 4000 with a Retina board, so I needed an extra monitor to test edits. Flawless operation ensued. If I had my wish, the software would support Retina PIP as well and perhaps the newer video cards. It would also be great if it addressed other file formats (MIDI, SMUS, etc.) in the future, maybe with a direct link to the One-Stop-Music-Shop synthesizer from Blue Ribbon SoundWorks.

My recommendation is to buy this package now if you have needs that include audio insert editing or if you have the OpalVision extra modules or the IV24.

Sequel from Diemer Development

With Sequel software, a MIDI controller and interface, you can compose and record whatever your sound modules support. I use a KAT Mallet system, Yamaha MIDI sax and an old Casio 1000 as a "dumb" controller. These devices allow me to control the texture and rhythmic



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components of the sound going into the software.

The sound modules these units control varies and includes at various times the One-Stop-Music-Shop, a Yamaha TG-33 synthesizer, a Midia Musicbox and a Roland Sound Canvass. These units produce the sound going out to the recorder. Sequel (\$89.95) can sit comfortably right in the middle of these hardware elements, shaping the harmonic and structural elements of the music being composed.

Having also sampled more than 500 8svx Amiga sounds in the past few years, I always look for software that allows me to mix Amiga-sampled sounds with those accessible only through MIDI.

The MIDI Connection

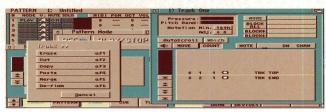
To help you realize that the signals from your controller are being read into the system, Sequel adds a small blinker that notes the signals passage through both In and Out. Anything played through the MIDI connection can be instantly recorded into the system and passed on to the Output

PATTERN 1: Unitified

NODE VV. NUTE SOLD

NOTE VV. NUTE SOLD

NOTE



The Sequel interface has many useful facets.

device which holds the actual sampled sounds. From there, the signals are passed to the recorder when you're ready.

Sequel records sound signals to any one of 32 tracks which has an associated Tempo Map. These 32 tracks and the Tempo Map make up a pattern, which are then sewn together to form songs.

At any point, you may preview your creations by pressing the Play button in the Sequel Transport window. If

you don't like a track, erasing it and rerecording is simple and intuitive. Tracks can consist of several merged takes, so redoing sections adds to the final polished result. Sequel offers the opportunity to choose the sounds desired on your sound module, allowing you to test them throughout the process.

MIDI instruments and sound modules have 16 separate sound channels which produce unique instrumental voices, and all can be preselected and tweaked with this software. A large counting

clock marks your location as far as measure and beat are concerned.

If you desire another color mode on-screen, Sequel allows you to choose from a series of palettes. This is not a peripheral decision; for many composers, it is a necessity. Creating a comfortable on-screen environment is as necessary as selecting a good chair.

Sequel's 32 separate tracks are listed in the Track window, and can be accessed with the mouse or intuitive keyboard equivalents. Any track can



play Amiga (internal samples) and MIDI voices or both. Each notes' velocity (how hard it is struck upon playing) is shown on a separate Velocity Meter. Separate Octave positions can be chosen as well, leading to further options for the music's texture

The Amiga Connection

Sequel makes it as simple to access Amiga sounds as it does MIDI parameters. Amiga samples can be panned left, right or made to play in stereo with settings that address both channels in a mixed range from two to 128. Octave and volume levels are also available for the Amiga samples.

The Sequel interface has control panels along the right side of the screen that have power over MIDI Out/In; it even has a way to turn both off in case you want to run another program that needs the serial port, though this is not advised. In case a note refuses to be quiet, you can select the All Notes Off option, graphically recognizable by its scratched out note icon design.

Sequel also easily handles difficult tasks—like keyboard splits. A split makes your controller act like two inputs at once, the lower half triggering one MIDI or Amiga parameter and the upper half another. This feat is accomplished in Sequel with far less pain and confusion than I have seen in other software.

More Magic

By deftly setting MIDI delays, you can create effects such as echoes, chorus and reverbs. Every arcane attribute of your MIDI wishes can be addressed by Sequel, from Pitch Bends to Note Pressure settings to sending System Exclusive data. This is no surface program, but rather a deep and well-designed piece of software.

Recording can be Linear, Looped (where each pass can provide opportunities to change what is played) and Layered (my favorite). In layering, you can thicken the recording with each pass of a segment, winding up with very complex and beautiful results. Sequel can be synced to external time sources as well, making recording to video a snap.

Standard Notation

Most software in this class opts to give you only standard notation (DMusic) or some variation of graphic/numeric notation (MusicX). Here, the Notation List shows both numeric data and standard note equivalents. This is an attribute I find extremely useful, especially when editing a track

In addition, Sequel incorporates a special Draw mode that allows you to graphically design embellishments. You can even grab the shape of any loaded Amiga sample and reconfigure its sound.

The Final Analysis

I am not a stranger to Diemer Development, having used and written about their Casio interface software some years ago. It is obvious that Diemer has studied the competition well, and this package has taken several years to develop. All of that, however, would evoke no sympathy if the package fell short of expectations. It doesn't.

My main reason for enjoying Sequel is it simplifies the most difficult tasks in a quicker fashion that its competition. It has all the bells and whistles and then some, and yet none of that complicates its use and easy learning curve.

I recommend it to professionals who desire building soundtracks from their unique compositions, and also to the novice who wants to be seduced gently into the world of MIDI and Amiga sound. At some point in the future it would be nice to see this software sport a high-resolution interface, but the present design is completely functional.



Companies Mentioned:

Visual Inspirations (DST) 809 West Hollywood Tampa, FL 33604 (813) 935-6410 Voice & Fax FOR INFORMATION CIRCLE 32

Diemer Development (Sequel) 12814 Landale St. Studio City, CA 91604-1351 (818) 762-0804

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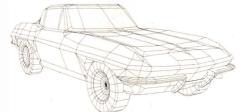
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LightWave Steps Part II

Build Your 3D Skills

by Victor & Geetha Ramamoorthy

A

s a LightWave novice, it's easy to be intimidated by this powerful 3D animation program. However, there are some basic steps that can be followed to gently ease your way

into understanding and working with LightWave.

Steps one through three were presented in the May issue of *Video Toaster User*. This month, we present the final three fundamentals: surfaces, lights and LightWave's numerous parameters.

Step 4: Scratching the Surface

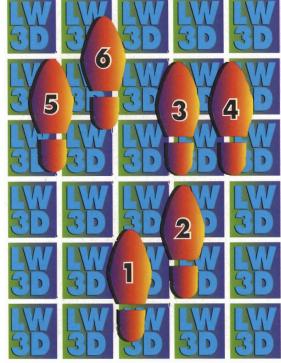
Though the geometry of an object is important, it is the surfaces that create the illusion of a physical object. A surface is a stretched skin between points of an object, and also serves as an abstraction.

The interaction between lights and a surface is a problem well studied in the past—and in the present—but there is a long way to go for photorealism. Creating realistic surfaces is serious business.

Any object with a surface that has microscopic undulations—micro facets—affects incident light in strange ways. Separate parts of the light get reflected on a surface, absorbed and transmitted. Some surfaces are shiny, and some are dull with an even glow. Modeling all these variations is far from trivial. LightWave approaches this problem by parameterizing different visual appearances in terms of eight controllable parameters and seven texture maps (Figure 5).

Since creating a synthetic surface model is tough, a surface image is captured by a camera and stretched over the object as a surface. This image—a clothed surface, in technical lingo—is said to be texture mapped. The texture maps can be procedural, algorithmic or a projection map. Depending on the way the image is projected, there are several ways to stretch an image over an object.

But texture or projection mapping is not precisely positionable in LightWave, and you do not have controls to align a



polygon to a specific part of the texture image.

As shown in Figure 6, there are five different projection maps and eight different procedural maps. They are all helpful tools and work predictably, which makes the creative process a lot easier.

Step 5: Switching the Lights

The final item of importance in creating a good scene is lights. We use lights every minute of our lives, yet they are not easily understood.

A light source behaves differently with distance, fog and surfaces. They create diffuse as well as sharp shadows. Sometimes they travel straight, and other times they bend around corners. They diffract and shower a rainbow to the viewer. Not all these properties can be modeled precisely.

LightWave offers a good, but limited choice of controls when it comes to creating a synthetic light source (Figure 7). A light can be a point,

spot or distant light. A distant light sends a parallel beam of light rays, while the other two types issue non-parallel beams of rays. Almost all the global aspects of a light source can be controlled. Lights can be shadow mapped for quick rendering without ray tracing.

You can also view through a light to make sure that it is being directed at the right spot of the object in the desired manner. The lens flare option is the one that catches attention immediately.

Step 6: Pushing the Envelope

LightWave is a synthetic graphic system that is dynamically controlled by numerous parameters. Most of these are normalized to take values between 0 and 100 percent. Since an animation consists of painting a sequence of frames, you may want to vary all these parameters as you go from one frame to another.

Since the parameter variations are smooth most of the time, it is worthwhile to create keys only at the valleys and peaks where you want to change the parameters abruptly. This is the idea behind the keyframe animation technique. The values

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between the keys are interpolated with spline functions. This idea and the parameters that can be keyed in this fashion are illustrated in Figure 8. You need to input only a few keys, and the system completes the rest of the data.

Objects, bones, camera and lights are also stored in the keyframe format. There is a motion editor to fine-tune the positions of any of the above four categories.

LightWave also supports scene scripting commands through an ARexx port. (ARexx is an interprocess control language that comes along with the Amiga 4000 computer.) With ARexx, you can

load scenes, objects and make complex data-dependent animations. They are great for creating data visualization animations.

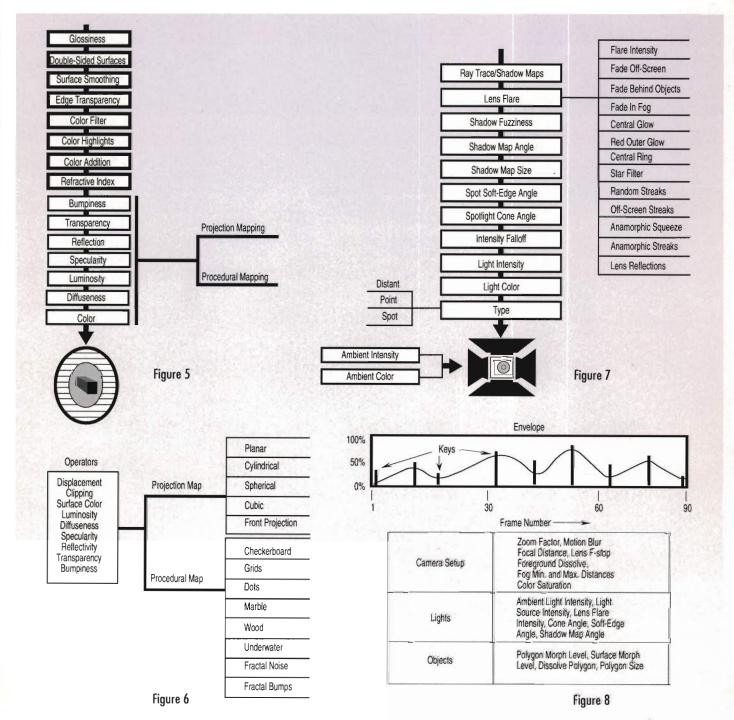
Following these six steps should provide a basic foundation from which you can build your LightWave knowledge and skills. Explore the program and experiment. Hands-on effort can't hurt; it can only help.

VTU

Victor Ramamoorthy bolds a Ph.D. in electrical engineering and has done research and development work in the area of video, speech, robotics, multimedia and networking for the past 10 years. He has published more than 50 technical papers in international journals and conferences.

Geetha Ramamoorthy holds a bachelor's degree in engineering and architecture. Her interests vary from form design, interior design, graphics and video walkthroughs.

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CYBERSPACE continued from page 42

investment. The Supra 14.4 fax modem and the U.S. Robotics 14.4 Sportster fax modem can both be purchased for under \$200, are very fast, and give you fax capability with additional software. Log onto the different BBS numbers you'll find in this column and download their file listings. The next time you need an object, look through your file listings, and when you find what's needed, get back on the BBS and download it. It's advisable to let them store the objects for you, as there are literally gigabytes of objects available. I can also recommend the Syndesis 3D-ROM if you have a CD-ROM player. It is wellorganized, and most of the objects are very good quality.

Follow-up

In my March 1994 column, I wrote about animation utilities and left out one of the best-MainActor by German programmer Markus Moenig. It offers multiformat conversion through load and save modules (it can load and save Anim 5,7, 8 FLC and FLI animation formats and load DL, PCX and GIF), has full Anim editing, Picasso II and Retina support, and lots of great batch-conversion capabilities. (It uses Art Department Professional and other image processors through its ARexx implementation.) Previous versions had no save feature, and it is my policy not to write about crippled software. The version I just received (1.21), however, now has the save feature fully implemented. It's a great shareware program and worth the effort to hunt down, as it is well-written and of definite use to those doing animation.

For the curious, short of time or currently modemless, I've placed everything I've talked about this month (including AmigaGuide, The Big Dummy's Guide to the Internet, PDial and the latest copies of the digital publications) on a disk, which you can have by sending \$5 to: Geoffrey Williams, Digital Information Disk, 1833 Verdugo Vista Dr., Glendale, CA 91208. You can also get a copy of MainActor from me for the same price, as it takes up an entire disk. You can ahvays drop me a line through Internet at GWilliamskajrc.

of cut, while on graphic EQs it may only be -12dB.

If that does the trick, try reducing the amount of reduction; instead of -24dB, try -18dB, -12 dB or -6dB. The less reduction used the better, because when you cut 60Hz you're probably also eliminating some desired bass frequencies in the original signal. This is especially true for music recordings.

If the hum has a buzzy quality, then eliminating 60Hz probably just removes a portion of the problem. When hum overloads an audio system, it creates clipping (a situation where the wave reaches a point of saturation, and the electrical signal can go no higher). As a result of this change in wave shape, harmonic frequencies are created. These are multiples of the original frequency: 120Hz (2x), 180Hz (3x), 240Hz (4x), 300Hz (5x), etc.

Filtering out the hum artifacts may require filtering all of these multiples, as well as the fundamental 60Hz pitch. If you have limited filtering capabilities available, note that the odd harmonics are often stronger than the even ones; if you've only got two filters, and one is already tuned to 60Hz, you might get better results setting the second to 180Hz (3x), rather than 120Hz (2x).

Finally, a basic rule of EO control is to accentuate the good and de-emphasize the bad. Besides eliminating objectionable hum, you should also try to find the dominant pitch in the desired signal (such as someone's voice) and set your equalizer to boost this pitch. This helps to improve the overall signal-to-noise ratio.

As you gain experience with the hum demon, you should be performing such fix-up operations with less frequency. Your recordings should be hum-free in the first place. When they're not, having some decent audio EQ gear on hand never hurts. VIII

Cliff Roth's new book, The Low Budget Video Bible, is available from Publishers Distribution by calling (800) 345-0096.

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SOUND REASONING continued from page 39

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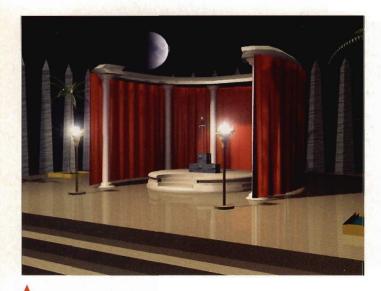
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435 S.E. 85th Suite D, Portland OR 97216

Please add \$3.75 for shipping and allow 7-10 days for de-livery. Rush shipping available. There is an ironclad 15day money-back guarantee.

TOASTER GALLERY



Sergio Parada

A senior at Comstock High School in Kalamazoo, Mich., Parada created *Gazebos* (right) with an Amiga 2500, an '040 accelerator and 16MB of RAM. The image took about 15 minutes to render and used about 10,000 polygons. *Altar* (above) includes 20 objects and nearly 20,000 polygons. Parada can be reached at (616) 388-3298.



Alan Chan

Glamour Shots was designed as part of a project for a national store chain specializing in high-fashion photography. The image, which features 40,000 polygons, was created on a dual-system Toaster 4000 and Toaster 3.1 and rendered in about 14 hours. Chan is the graphics/animation design director for Vision Video Systems, based in Norman, Okla. He can reached at (405) 447-0021.

Gallery Submissions

If your Gallery submission is published in *Video Toaster User*, we will extend your subscription for one year and send you a *Video Toaster User* T-shirt.

Send your submissions to: Avid Publications Attn: Toaster Gallery 273 N. Mathilda Ave. Sunnyvale, CA 94086



William R. Keller V

In 24-bit RGB format, *A Room with a View* uses more than 6,000 polygons and was rendered in nearly four hours. It was completed with an Amiga 4000, an '040 accelerator and 18MB of RAM. Keller is the proprietor of V.I.P. Video Productions in Bethlehem, Pa. He can be contacted at (215) 867-9793.





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OVERNIGHT AND RUSH SERVICE AVAILABLE

VIP (V-light, i-light, Pro-light) **VIDEO LIGHTING SYSTEM**

Lowel's VIP system of high-output, low-wattage lights takes full advantage of today's video cameras to help make high-quality, low-hudget shooting a reality. Designed specifically for the video industry, they are capable of 55 to 500 watts of power, can be powered Act Or Oc, camera or stand mountable. They are all convection cooled and some have adjustable light beam. They are the winners of the Gold Medal SMPTE Award and the AMPAS Technical Achievement Award

V-light

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

Extreme wide-angle multi-use halogen source

500 watt. AC powered light
Cam mount on stand, clamps, boom, wall, window or door-top.

i-light

The tiny, battery powered i-light provides essential fill light, eye-light, high-lights, and contrast control in news and documentary shooting without overwhelming available light.

• Multi-use halogen source

- Multi-use halogen source
 S5 or 100 watt, DC powered light
 DC power can be 12 or 14 volts.
 Includes cigarette lighter connector or optional 4-pin and 5-
- pin XLR connectors

 Optional light controls include expandable barndoors, scrims, diffuser, dichroic filter, snoot and umbrella, gelframe and flags. Pro-light

- The tiny-versatile Pro-light can be used as a low-level key or accent light. fill light (with diffusion), backlight or background light.

 Multi-use halogen focusing source 125 and 250 wath AC powered light or 190 watt at 12 volts, 200 watt at 30 volt DC powered light or 190 watt at 12 volts, 200 watt at 30 volt DC powered light or 190 watt at 12 volts, and 190 powered light or 190 power light controls include expandable barndoors, scrims, diffuser, dichroic filter, snoot and umbrella, gel-trame and flast. frame and flags.

 Optional cigarette, 4-pin and 5-pin XLR connectors.

Canon

HI-8 CAMCORDER WITH VL MOUNT FOR INTERCHANGEABLE LENSES, RC TIME CODE AND DIGITAL EFFECT FOR UNLIMITED CREATIVE FREEDOM.



- 1/2" CCD with 410,000 pixels delivers over 450 times of herizon. ***C. LOC With a U. Soar please declares over each after so interper at resolution. M. Mauril Spater allows used of a full rangeoff interchangeable lenses from extractific angle to supper felightotic plus, apticolar EDS-547, adopter allows meuning of severusis Camani EDS-537 and exhibitions in the source of the severusis of Camani EDS-547 adopter allows meuning of the severusis Records 807 inter-Code within shorting and can alex "stripe" RC.

- gillus, agetional ESS-342... adaption allows interining of exercise Common tedS. Schrimt Authoricus lenses.

 Records RC Time Code while boroting anchesin also: "stripe" RC Time Code to targers a lendar reconstraint or ether; equipment. With RC Time Code the L2 can be connected to an each controller with RC Time Code the L2 can be connected to an each controller with RC Time Code the L2 can be connected to an each controller with RC Time Code the L2 can be connected to an each controller with RC Time Code the L2 can be connected to an each controller with the Code to the Code

scense, Overlap - (dissable) Wipe - this effect slides the picture off the screen while simultaneously replacing it with a new scene. Frezze - these picture leaving sound recording uninterrupted, Ad Frezze - neonals your scenes as colorful paint-fike images. Strebe and Art playback modes - six-speed strebe playback can be combined with three levels of schartzation effects.

NRG

CAMPAK **Power Packs**

If you are fired of short camcorder run times and stacks of batteries try NRG's powerful solution - the Campak. The lightweight Campak attaches assily to your waistband, pocket, powerbelt or optional Campak belt and uses utha-nigh capacity nicad cells to deliver 3-5 hours of continu-ous camcorder run time.



CAMPAK 12-Volt

- 12 V DC (cigarette lighter) output, adapts to any camcorder.
 Ultra-light weight (only 38 oz.) and compact palm size.
 Highest-density Nicad cells provide 4 amps of power.
 2500 charged/discharge cycles for years of service.
 Spring steel clip securely fastens Campak on waistband,

- pocket or belt Includes soft case and charger.

CAMPAK PRO 12-Volt

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

CAMPAK PRO 13.2-Volt

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

PERPETUAL **POWER BELT SERIES**



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

880 Power-Pro +

- High capacity quick-charge capable 12-volt 10-amp sintered nicad power pack (removable). Power chassis with dual 3-pin XIR inputs allows for pack interchange without shutdown. 2500-cycle cell life provides iowest cost per cycle. Microprocessor-controlled 5-step multi-color power indicator display.
- indicator display.

 Belt with cellpack weighs only 4.9 lbs for all day com-
- For immediate registers of the state of the objects of the objects

970 Power-MAX

- POWER-NIAX
 Same features as 880 Power-Pro + Beit Plus
 Highest capacity quick-charge capable 12 Vott 14-AMP sintered nicad power pack (removable).

 Rugged high-grade, black leather beit case, chassis assembly with dual 3-pin XLR inputs for pack interchange without shuddown.

 Belt with cellipack weighs a comfortable 7.5 lbs.

 Includes Power-MAX bett and power chassis, 14-amp cell pack in 12V or 13.2 volt configuration, model 600 overnight charger, comprehensive owner's manual. Fits waist size 29'-44'

 Also available in 13.2-Volt 14-amp version. The 13.2-Volt version ofters 15-20% longer runtimes because industrial Volts shut of at higher voltage levels. By not shutting off the Power-MAX & allowed to fully discharge, thus the longer running time.

Power (Cell) Packs

Extra power packs provide peace of mind and ample power for long trips or day-long shoots. Modular design allows any pack to be attached to any beit, so any power requirement you may have can be fulfilled. Extra power packs provide



650-III Fast Charger

When power can't wait! The 650-III Cluick Charger provides a safe, full recharge in under 2 hours and up to 70% charge in as little as 45 minutes. Charge one pack while working with another. A custom system microprocessor chip samples hundred of pack parameters continuously to assure the fastest charge possible with no loss of cell life. When charge is complete, the oharger switches to condition mode and indicates amount of power replaced. And for world travelers, the 650-III includes 110-120V/220-240V voltage selection.

VERSALITE PRO Professional AC/DC On-Camera Light

The Versalite is a high effi-ciency AC/DC light at an affordable price. Proportioned for mid- to full-size cam-corders, the Versalite Pro

integrates many features into a package well-suited to the serious videographer.



VARI-LITE PRO

Professional DC On-Camera Light

Professional DC On-Camera Light
The revolutionary new NRG Vari-Lie Pro combines the
ruggedness, light efficiency and versatility of NRG's best
selling Versalight Pro (DC only though) with a sophisticated electronic light management system. Thanks to onboard control IC's using NRG's Light-Gate technology, light
intensity can be infinitely adjusted by the user within a
range of 10% to 100% of the lamp's rated power. Now
instantly adjust light or orbital in very
instantly adjust light or orbital in very
requirements. Sest of alt, the Vari-Light Pro virtually eliminates color shift and dramatically conserves precious battery power by using only the power required for the selected light level.

- only powers by song only the power required for the selectof light level.

 Accommodates bulbs from 20W to 100W DC.

 Prismatic dispersion grid provides smooth even light
 output and reduced glare without changing light intensity.
 Sturdy all-mate click tilt moutling bracket with ratchet
 action. Eliminates shake under action shooting conditions.
 Optionals bun doors enhance light control capabilities,
 without the bother of access.

 Rugget milded aluminum light head disperses heat and
 provides years of service under adverse conditions.

POWER STATION SERIES

Designed to replace expensive original-manufacture AC power supplies, the afterdable Power Stations deliver precises regulated 12 void 10 the power from AC sources work processed to the power from AC sources work processed to the processed power from AC sources work processed to the processed processed to the processed processed to the processed processe

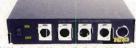


Available in different configurations

- The 12560 features a single cigarette or 4-pin output and up to 5 amps of output current. The 129100 features dual outputs in any combination of cigarette or 4-pin and 9 amps of output current capability. Features:
- High-current output Worldwide voltage selection Detachable worldwide cordset
- Detacnable worldwide cordset
 4-pin or cigarette lighter outputs
 Rugged steel case
 Lighted power switch

POWER STATION-2 SERIES

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



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

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
- integrated side 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

SAMSON

MR-1 Wireless System

- The MR-1 micro receiver is a professional VHF wireless receiver measuring less than 4" long and 2" wide
 FCC licensed in 14 charnels from 174 MHz to 213 MHz. Truly switchable balanced mic level (600 ohms) to
- unbalanced (-10 dBm) output.
 dbx noise reduction to simultaneously increase dynamic range and eliminate noise.
 Receiver squelch, level & headphone level output controls.
- Can be powered by a 9V battery for 10 hours SH-2 hand-held transmitter can be used with mic elements like Shure SM 58 dynamic mic or Audio
- elements like Shure SMI 30 dynamic line of Addio Technica Pro 4. ST-2 (L) hody pack transmitter can be used with leading lavalier mics like Soriy ECM-144 or Audio Technica 831.

Lavalier (clip mic) Systems

- ST-2(L)ECM-144 Transmitter with Sony mic &

- **Hand-Held Systems**
- SH-2/PR4 Audia Technica Dynamic mic element & MR-1 Receive.
 SH-2/58 Share SM58 Dynamic mic element &
- ...434.95

592 50 SUPER TD SERIES TRANSMITTERS

For the serious professional who wants true step-up quality features, Lavalier (clip mic) systems each include: MR-1 Micro Receiver

TX-3 Body-Pack Transmitter Lavalier Mic with Multi Pin Plug 544 50

MACKIE



Ultra-compact 12 channel a uno mixer tenuring the same spees and performance as the proved CR-1604. In less than I sq. n. of work space it growless 4 low-moise/high than 1 sq. ft. of work space it provides a tow-molecular headfroom mic imputs with a 489 priamtion power, 4 ball undar, more injours, 4 sterior imputs, 2 AUX service per channer, 2 sterior effects refunding, 4 ordered access likester, space incost, 2 band 60, freadghone monitor walking control, 12 LED pask where display, sweet planning as seed constroction and hunt- in power supply.

Sixteen-channel audio inixer designed to doliver excaption-al performance in a vide range of situations, including stu-dio recording. It've economic, like enusic PA systems. Producesting studies, and into quartily installed systems. Exclusive mix and l'enholicity detices 2X more froatroom feline and into makes, along with the liverse detection and inightest possible Sife ratio. Conventible design allows physi-cial format to be changed between labbidgo, jekks-fo-top and ratio mount with lark god rotated 99" to black. Rack mount brackets included.

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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. AB Holi Editing, tape logging, ED. Imanagement and ED. Import/export. The Editizer supports virtually every software for VCR control 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 WJMX-30, WJMX-30, Video Toaster and 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 Panasonie AG-1970 as 'A' source, Sony EVS-3000 as 'B' source and JVC BH-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-MXS0 switchers.

 MPC Audio and MIDI support for embedding sounds and MIDI sequences in your EDL.

 DPS TBC It & Ill support you can control two personal TBC cards and the Personal V-Scope from a serial port.

Software Features:

- 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 Loggling Molift-event search, copy directly into edit list, multiple log windows may be pened simultaneously, log files or selected events may be printed to a window.

 Time code generator in Drop/Non-Drop frame.

 Multi-event controller/can handle up to 16,000 events.
 Interactive graphical "Time Line" window. Split audio-detting, cut/copy/paste events. Preview, Perform, Review.
 Automatic and manual EDL ripple.
 Ootional suponor for
- Optional support for AutoDesk 3D Studio, Lightwave 3D

Sundance Technology Group Q-BASE Scene Logging Database

- Connects any Macintosk (MacPlus and up) to any source VCR with 8-422 9-pin interface. Cable and Software included.

 Machine control provided via the RS-232 serial port allows use of mouse, keyboard, or optional joy/shuttle device.

 Four easy keystrokes for each log entry. Simply mark Time Code IN, OUT, select the Comment Window (enter a comment of up to 32K of text per event), save your comment to the log.

 Job Information Window allows tracking of all pertinent job information via 18 user-definable fields; find all jobs matching the search criteria from multiple fields.

 Export and import logs to and from word processor and/or database programs.

 Create event lists of randomly ordered events by picking desired events Sort events by reel/timecode or by alphanumerics Events can be reordered with automatic renumbering by simply draggling and dropping.

 **Move or delete single, contiguous events.

 Print current and screen display: Log, Group or Event List

Q-CUT Cuts-Only Video Editing

- O-Cut Cuts-Only is a software only package. Connects any source VCR with an RS-422 9-pin interface to the RS-232 Serial Port and any editing VCR with RS-422 protocol to the printer port for a complete cuts-only ed RS-222 Serial Port and any odding VCR with RS-422 protocol to the printer port for a complete cuts-only edit system. Includes full integration of U-Base Scene Logger, You can import event lists from Q-Base to Q-Cut for instant access and auto-assembly. Generates CMX and Sony compatible EUL for import or export. Records single-frame animations from Toaster, LightWave 30 and many other popular 3-D software programs. Dynamic Motion Control of DMC capable sources. Time Code Math functions; add and subtract time code values from IN, OUT, or DURATION.

 Screen monitoring of VTIC, LTC, or Control Track for status (drop/non-drop and interpolated). Edit match, backtag, and "Hit" Point calculation.

 View "EDL" vertical timeling: drag and drop edits to reorder the list- with and without auto-ripple.

 EDL clean and trace with trace journal report. \$149950.

Q-CUT A/B Roll Video Editing

- O-Cut A/B Roll includes mini (Multi Machine Interface) hardware. The MMI allows machine control of up to 15 serial devices, has 8 GPI triggers and provides serial control of the Video Toaster as well as switchers using GVG 100 Protocol.
 Includes 0-Base and all features of 0-Cut Cuts Only includes all cables and connectors for A/B Roll editing.
 Software allows designation of any machine (from up to 15) to be the record VCR.
 Roll up to 6 sources in slave/sync mode.
 Double PlayDouble Record for recording and editing two camera ISO productions.

 299500

and eating two camera IsO productions.

Q-CUT VIDEO EDITING POWER FEATURES:

• Full integration of the Q-Base logging with 0-Cuts puts Sundance in a class by itself with the lastest, most efficient platform for editing and managing job information.

• O-Cut Cuts Only and AB Roll leature "Music Cuts". Transfer your music track to the record VCR, then just lat the Enter keys in time with the music to create an EDL with slots pre-marked for video scenes. Import select video scenes on top of the music cuts and auto-assemble.

SONYVISCA

CVD-1000 Vdeck Hi-8 Computer VCR The Vdeck is a computer-controlled Hi-8 player/recorder. You connect the Vdeck to the serial port of your computer and then, using software that incorporates Sony's VISCA Protocol you will enter a new age of machine control. With the Vdeck and VISCA software you can seamlessly integrate autile, video, text, and graphics to create polished in-house video for training, product demonstrations, and corporate communications.

- rig, product demonstrations, and corporate committicabons. Uses Hi-8 format which delivers over 400 lines of horizontal resolution in record and playback modes. Records Sony RC Time Code to any Brimin or Hi-8 tape plas It can dub RC Time Code to any existing tape. Not only does it read RC Time Code but also Sony Professional Brimin Time Code.

 With RC Time Code you can search for specific frames of wideo. The Veteck reads RC Time Code even in fast forward or reverse so you don't have to switch to playback mode to read the Time Code. This allows for even taster and more convenient search of seenes.

 Has ARM Hirf sterep bits a PRM digital audio track. You can use the PCM track to dub digital audio background mosts or high fieldity narration.
- can use the PLAN track to duo digital audio background nestic or high fidelity narration. Has 3 videa wiputs C-Vittleo, 2-composite) and 2 stereo audio inputs. The Vedeck has a built-in switcher for trans-parent integration of multiple audio and video sources. Built-in microphone minigack allows connection of a mic to the Vitexix letting you add marration to your presentations.
- Microphone/Audio Mixer the Vdeck lets you mix your audio and microphone sources onto the AFM and/or PCM audio and microphone sources onto the AFM and/or PCM tracks while recording. Built-in fader lets you fade audio, video or colors during the control of the control of the colors during the colors and the colors during the colors and the colors are control of the colors and the colors are colors are colors are colors are colors and the colors are colors are colors and the colors are colors are colors and the colors are colors are colors are colors are colors and the colors are colors.

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PC-Based VISCA Software

EzV2 is the powerful and easy to use VISCA network controller and editing program for Windows. Ezv2 others point and click ontrol of up to seven media devices on a VISCA network. You can build an AIB roll editing system using any switcher with a PI input. You can use an NTSC encoder and Windows graphics or presentation program for first generation tilling, graphics, and digital video recording. With a sound card and Ezv2, you can incorporate digitaced sound, Midi, and CD audio in your ideo. EzV2 provides the key to a complete desklop video production system for Wandows.

- your leav. Ezv2 provines the key to a complete desktol

 General

 A-B, B-A roll editing centrol with GPt trigger

 Keyboard controls with hot keys

 Adjustments for pre-roll and edit-out

 Optional Source Transport Edit in Play, Still, Slow,

 1, 2, Reverse, or Fast 1 modes

 Ethects Supports all fade in/out Vdeck effects with

 manual override

 2 trames accuracy

 System preferences file

Edit Control

- Edit Control

 Audio and video line input select

 Audio and video line input select

 Use with AV switchers, sound cards, video-in-a-window, NTSC encoders

 Triggers Windows applications during editing

- Auto Editor

 Records video clips from source decks to a record deck with manual and automatic logging of edits
 Assemble, AVI insert, video insert, from erecord (4 frames), or PCM audio insert recording
 AutoEdit Controls Single line, range and batch assembly of edit list file up to 999 entries with preview

Edit List File Management Scrollable EDL Nile up to 999 entries Delete, Insert, and Update edits Export, Insert, Print EDL text likes

- *export, finetr, Frint EUL text files
 *Red description and number fieldpause on reel change
 *Work print dub offset for A/B decks
 *Viewer for up to 20 edits; out, copy, and paste EDL entites; clip log fibrary
 *Clip length display, running fotal, total EOL length

Panasonic

Broadcast & Television Systems

AG-460

2-CCD S-VHS Camcorder

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



- Two 360,000-pixel CCD image sensors
 470 lines horizontal resolution & superb color reproduction
 Laminated amorphous video heads
 Hi-Fl audio with stere zoom microphone
 Two-speed 10x power zoom lens
 Piezo auto focus (TTL) with 3-step focus zone
 Sensitivity switch (0 db. + 18 db. AGC)
 Advanced auto-tracing withe balance with manual override
 Automatic iris with manual override
 Autionatic iris with manual override
 Autionatic insert editing and dubbing capabilities
 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 EdidS-pin Guit terminal/Edit switch
 Includes Panasonic metal system case



- 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
 Buttl-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
- and moving images

 Digital Still lets you freeze a particular scene for as
- bigital Still—less you neeze a particular science for as long as you like, without interrupting sound recording Digital Sain-Up delivers clear, distinct images in low-light levels, even down to 1 lix! Digital Strobe & Digital Wipe add professional effects

AG-455 2-Hour S-VHS Camcorder

- SaVHS system records and plays back over 400 lines horizontal resolution
- Laminated amorphous heads assure exceptional picture quality, high resolu-tion, superb color reproduction, and high signal-to-noise ratio
- 12:1 power zoom lens with continuously variable speed zoom
- Hi-fi stereo and linear track for recording. Also has "Audio Out" select switch for Hi-tu/Normal/Mix combinations
 High performance stereo zoom microphone features three different settings:
- Mide, Telephoto or automatic zoom.

 Built-in VITC (Vertical Interval Time Code) time code generator gives absolute address to each frame of video
- absolute aduress to each mante of video for frame accurate editing (with specific edit systems) Digital Mix for soft fade-over between memorized still and moving images Digital Tracer to add an after-image effect to moving subjects
- Bigital Tracer to add an after-image effect to moving subjects

 Bigital Still lets you freeze a particular scene for as long as you like, without interrupting sound recording

 Bigital Still lets you freeze a particular scene for as long as you like, without interrupting sound recording

 Bigital Strome Thanks to digital processing, you can enjoy shots with ultra-high magnifications of up to 100:1

 Bigital Strome & Bigital Wipe add professional effects to your shooting.

 Audio/Video Fade-In and Fade-Out for smooth, professional scene transitions

 Automatic ins plus manual control for fine adjustment

 Variable high-speed shutter from 1/50 to 1/8000 second.

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 violed heads which are clearly superior to that of conven-

- Uses Amorphous video heads which are clearly superior to that of commenlocal ferrite heads because the magnatizing strength of the amorphous
 thead is much preader. The Amorphous video heads deliver rich, vibrant color
 reproductions and a high SNI vatio.

 Digital filter helps to achieve even more accurate Y/C separation. Also a noise

 If the ris textubed in the discussion of the control of th Outputs the audio tracks deing search operations for owing and quick confurnation of audio recording.

 Outputs the audio track during search operations for owing and quick confurnation of audio recording.

 Advanced dual-hoading mechanism features a quick response time, exceptional lape protection, and remarkable tape control
- accuracy for outstanding editing precision and ease.

 Automatic head clearer removes dust and other particles from the heads to help maintain optimum performance.

 Digital Time Base Corrector eliminates jifter and distortion. Playback is high quality, stable and with natural colors

NJ-MX30 Digital A/V Mixer

The Panasionic WJ-MX30 AV Digital Mixer is designed for use in producing specia effect images by utilizing the built-in frame synchronizer and other digital processing circuits. In addition to the mix effect of the conventional digital A/V mixer, the WJcuscuss, in assembly to title that without of the conventional digital AV mittee MXSO offers such features as furnisance key function, digital effoct, dow key effect, wipe effect, fade control, memory and many more. With the V MXSO and your imagination, find or are many possible function combinate which are left to your creativity.

- which are left to your creativity.

 Dombination of 7 size keys can create 108 different wipe patierns.

 Who-charrier digital field synchronization allows special effects in each of the W-HMX30's A/B program basses.

 Whe should be button with subjectable transition rates.

 Whe should be button with subjectable transition rates.

 Whe should be button with subjectable transition rates.

 Plicture—in-plicture function allows the 8-but picture to be compressed in selectable 1/4, 1/8, 1/16 size of a full screen.

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 Plicture—in-plicture function advisors the 8-but picture to 8-button, negative/positive, paint, monochrome, and AV synchron.

 Double picture—in-plicture function compresses both A and 8 sources. Plus every mode can be trimmed with hard/soft edges borders, shadow, flador want border and be subjected to 8-button or moving vipe location.

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Fluid Heads & Tripods

The silky, smooth action of each Miller Fluid Head is the product of the finest quality cast and machined parts functioning together in a fluid environment. They are engineering masterpieces, built to operate even under extreme conditions. They are engineered to exceptionally fine tolerances and their mechanisms are protected effectively against ambient moisture and dust.



Miller 20 - Series II Fluid Head

- Continuously adjustable fluid drag control Sliding/Quick Release camera platform Weighs only 4 lbs. will handle cameras up to 22 lbs, Counterbalance system designed to compensate for nose heavy or tail heavy camera configurations, and permits fingertip control of the camera throughout the tilt range. Includes independent pan and tilt tocks, bubble level, dual pan handle carriers and integrated 75mm ball levelling.

#440 - Lightweight Tripod

- Weighs only 4.5 lbs., supports up to 30 lbs.
 Minimum height down to 24', maximum height to 57'.
 Extremely portable, folds down to 33'.
 Engineered from themoplastic moldings, diecast alloy and hard anodized tubular alloy.
 Fast one turn, captive leg locks.
 Includes 75mm (37) ball levelling bowl

#420 - 2-Stage Tripod

- Two extension sections on each leg. Operates at low levels as well as normal heights without the use of mini legs. Weights 6 6 6bs., supports 50 lbs. Very portable, folds to 27 lbs. Very portable, folds to 27 lbs. Very portable, folds to 10 mini legs. Weights 6 6 6 lbs. supports 50 lbs. Very portable, folds to 27 lbs. Very portable, folds to 27 lbs. Very portable, folds to 10 lbs. Very portable, folds to 27 lbs. Very portable, folds to 10 lbs. Very portable, folds to 27 lbs

System 20 Catalog #338

System 20 ENG Cat. #339

Miller 20 II fluid head • 420 2-stage tripod 410 tripod spreader with foot pads

Vinten Vision SD 12 and SD 22 Pan and Tilt Heads with Serial Drag

Pan and Tilt Heads with Serial Drag The Vision SD 12 and SD 22 are the first heads with the "Serial Drag" pan and till system. The system consists of a unique, permanently-sealed fluid drag and an advanced lubricated friction drag. So for the first time, one head gives you all the advantages of both fluid (viscous) and lubricate ad (LF) drag systems — and none of their disadvantages. Achieve the smoothers pans and tilts regardless of speed, drag setting and ambient temperature. Simple, easy-to-use external control for perfect balance. Patented spring-assisted counter-balance system permits perfect "hands-off" camera balance over full 180" of litt. Instant drag system breakaway and recovery overcome inertia and friction for excellent" whilp pans". Consistent drag levels in both pan and tilt axis. Flick on, flick oft pan and tilt caliger disc brakes. Flick on, flick oft pan and tilt caliger disc brakes. Flick on, tilck oft pan and tilt caliger disc brakes. Flick on, tilck oft pan so the strength of "both". Touch activated, time delayed illuminated level bubble. Working conditions from as low as -40" up to +60"C. SD 12 weighs 6.6 lbs and supports up to 55 lbs. SD 22 weighs 12.7 lbs and supports up to 53 lbs. SD 22 weighs 12.7 lbs and supports up to 53 lbs.

Vision Two Stage ENG and LT Carbon Fibre ENG Tripods

The ultimate in lightweight and innovative tripods, they are available with durable tubular alloy (Model #3513) or the stronger and fighter, access and spines and provided and stronger and fighter, access and the stronger of the stronger

Vision 12 Systems

All Vision 12 systems include #33643 SD 12 dual fluid and lubricated friction drag pan/fill head, single telescoping pan bar and clamp with 100mm ball base.

SD-12A System

- 3364-3 SD-12 Pan and tilt head
 3518-3 Single stage ENG tripod with 100mm bowl
 3363-3 Lightweight calibrated floor spreader.

SD-12D System

- 3364-3 SD-12 Pan and tilt head
 3513-3 Two-stage ENG tripod with 100mm bowl
 3314-3 Heavy-duty calibrated floor spreader

Vision 22 Systems

All Vision 22 systems include #3386-3 SD-22 dual fluid and lubricated friction drag pan and tilt head, single telescoping pan and clamp with dual 100mm/150mm ball base.

SD-22E System

- 3386-3 SD-22 Pan and tilt head
 3219-52 Second telescoping pan bar and clamp
 3516-3 Two-stage EFP tripod with 150mm bowl.
 3314-3 Heavy-duty calibrated floor spreader

SONY

EVW-300 Hi-8 3-CCD CAMCORDER

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:

- Features:

 Equipped with three high density 1/2" IT Hyper HAD image sensors. Has an excellent sensitivity of F8.0 at 2,000 lux, high S/N of 60 d8, and delivers over 700 lines of horizontal resolution.

 Provides high quality PCM digital stereo and single channel AFM Hi-Fi recording. Has XLR balanced audio connectors.

 Quick start 1.5" viewfinder with 550 lines of resolution plus Zebra pattern video level indicator and color bar generator.

 Quick-start recording—takes only 0.5 seconds to go from REC PAUSE to REC MODE for immediate recording in the field.

 Built-In Bram Time Code generator records absolute addresses. (Either non-drop frame ordow 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.
- Variety of automatic adjustment functions for different lighting conditions: ATW (Auto Trace White Balance) optimum Variety of automatic adjustment functions for different lighting conditions: ATW (Auto Trace White Balance) — optimizing 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. ABC (Automatic Gain Control) — in addition to manual Gain Up AGC provides linear gain up in the range of O dB to 18 dB. Intelligent Auto Iris — where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris — where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris — subject to lens ins for proper exposure.
 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) ergonomic design provides well balanced and extremely comfortable operation.



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
 law and new LOLUX mode lets you shoot with almost no light! Now you can
 shoot superb flootage with excellent color balanced at a mera 5 lux illumination

 Ouick Record Mode when turned on the camera is set to the audo (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 outdroors 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 balances of the filter wheel.
- ance 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.



KY-27UB

- 3-CCD Golor Video Camera

 New % CCDs with 380,000 pixels (360,000 effective) with advanced electronics delivers resolution of 730 horizontal lines and reduced smear.

 Special low reflection membrane for CCD shielding screen greatly reduces smear while minimizing light leakage.

 Sensitivity of 16.0 at 2000 bux, Min. Illumination 7.5 lux with 1/1.4 lens, +18dB. Together they provide -30dB without the noise and picture degradation normally associated with this much gain. Excellent color balance is maintained even down to 1.5 lux illumination.

 Auto Shooting Mode where you only have to zoom, locus and record. All other parameters are controlled automatically.

 Enhanced ALC (Automatic Level Control) mode for continuous shooting in all light levels. This allows continuous automatic shooting from dark intensit so bright outdoors. Also features an aperture priority mode. Manuallys set iris for desired depth of tocus, and ALC circuit automatically achieves correct video level.

 The Multi-Cone iris Weighting system gives preference to objects in the center and lower portions of the picture. The Automatic Peak/Average Detection (APB) provides intelligence to ignore unusual objects such as bright (jints.

 Auto Rhe circuitry extends a scene's light to dark dynamic range reproduction by up to five times without overexposure.

 Has large 1.5-inch viewfinder with 500 lines of resolution and SMPTE color bars. Status system provides audio levels, accumulated or remaining recording time and VTR operation. Also battery voltage and camera setup. Zebra pattern indication and safety ones with a center marker are also provided.

 Ferite activity by Acted Sc Score (Section 1) and SMPTE color bars. Status system provides audio levels, accumulated or remaining recording time and VTR operation. Also battery voltage and camera setup. Zebra pattern indication and safety ones with a center marker are also provided.

- safety zones with a center marker are also provided.

 Equipped with Variable Scan function. This allows flicker-free shooting of computer screens. Variable scan enables a precise
 shutter speed from 160.2 to 1/96.7 of a second in 256 increments to be set, matching a computers scan rate. Almost any computer display can be clearly recorded.
- computer display can be clearly recorded.

 Star filter creates dramatic 4-point star effects. Users can also select from a wide range of optional filters.

 Advanced Memory System (AMS) stores customizable settings for various shooting conditions.

 Camera head is designed for durability and light weight. Provides excellent resistance to vibration and impact, for enhanced reliability, Overall balance is perfect with all controls optimally located for ease of use.

 Uses just 12.4 watts of power with camera adapter and viewfinder, so battery time can be allocated to VTR operation.
- Easily adjustable pedestal and detail enhancement through the Camera Setup Menu.

 Docks directly to the JVC BR-S422U, BR-S411UB and BR-S420CU professional S-VHS recorders. Optional adapters available

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



- 3 % CCD chips mounted with spatial offset technology deliver resolution of 700 horizontal lines Low noise design provides extreme sensitivity of F8.0 at 2000 lux. Min. Illumination 7.5 lux with excellent color reproduction New UAR (own ones amplified) elekers a SM (signal-bonoles) elfoid of 2620 the highest achieved for this type of camera 26-pin connector outputs V/C or component video signal allowing hook up to a portable S-VHS, Mill or Betacam recorder and simultaneously record with High electric production of the control of the viewfinder needs no warm up time so you never miss a shot. Zebra pattern in the viewfinder alerts operator to excessive video levels.
- to excessive video levels.

 Genlock capability allows synchronization with other cameras. Also full calibration functions are built-in as well as color bar generator.

 Variable high speed shutter from 1/80 to 1/2000 second

 Built-in farm time code generator records an absolute address to every frame.

 High-performance back electret condenser mic records to all three audio tracks. Low cut filter eliminates wind noise.

 Very low power consumption. Draws only 16 watts per hour allowing 100 minutes of recording time with 1 NP-18 battery.

 Body made of magnesium alloy previously found only on broadcast cameras. Still only 13 lbs. in standard configuration.

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LEADER

Model 5850C

Vectorscope

An ideal companion for the 5860C Waveform Monitor, the 5850C adds simultaneous side-by-side waveform and vector monitoring, Featured is an electronically-generated vector scale that precludes the need for fussy centering adjustments and eases phase adjustments from relatively long viewing distances. Provision is made for selecting the phase reference from either (A or B) inputs or a separate external timing reference.

Model 5860C

Waveform Monitor

A two-input waveform monitor, the 5860C features 1H, 1V, 2H, 2V, 1 ps/div and 2V MAG time bases as well as vertical amplifier response choices of flat, IPE (low pass), shroma and DIF-STEP. The latter facilitates easy checks of luminance linearity using the staircase signal. A PIX MON output jack feeds observed (A or B) signals to a picture monitor, and the unit accepts an external sync reterence. Builth realibrator and on-off centrol of the DC restorer is also provided.



Model 5864A **Waveform Monitor**

A fully portable waveform monitor for field use, the Model 5864A is a two-channel unit that provides 2H and 2V sweeps with MAG, FLAT and IRE response, and normal and X4 gain.

Model 5854 Vectorscope

2-channel portable vectorscope is ideal for field use and features A and B phase reference, fixed and variable gain. Both units shown with optional battery holder and NP-1

MAGNI



MM-400

The MM-400 is a combination waveform and vector monitor especially configured for the cost-conscious producer. A low-cost alternative to CRT-based waveform monitoring the MM-400 produces a video picture of the input signal's waveform and displays it on any video monitor. It provides a simple, affordable and accurate way to set camera levels before a shoot, or to check time base correctors and color fidelity in editing. Problems like hue shift, smearing, muddy contrast and loss of detail are easily identified for correction.

- FEATURES:
 Converts waveform or vector display information into a standard video signal which can be displayed on a video monitor or routed around a video facility, no need for additional expensive monitors. Switch between pictures and waveforms at the push of a button.
 Incorporates an advanced SCH phase and color frame indicator that is a must for editing and post production. At a glance it tells you if a signal's subcarrier-to-horizontal phase is properly adjusted and if the signal's color frame matches the house black burst connected to the MM-400 external reference input.
 Works anywhere and with any analog video format—NTSC, PAL, Component or S-Video. It has automatic detection between NTSC and PAL formats.
 Three loop-through inputs can accept three composite signals or one component, or RGB signal.
 No complex displays or special test signals are required for component video monitoring.

- No complex displays or special test signals are required for component video monitoring interchannel timing and amplitude display make component analog monitoring easy, has color bar limit markings for Betacam, M-I and SMPTE formats.
 Waveform and vectorscope controls, including channels, sweep speed, position control, phase rotation are on easy-to-see dedicated pushbuttons.
 Besides instant toggling between picture and waveform, a mix mode combines waveform and picture displays for simultaneous viewing.
 The MM-400 can be readily used by even novice operators. It has easy-to- understand set-up menus for display color, interchannel timing, SCH phase alarm.
 Useble in any video facility of any size for displaying signals, its low cost makes it affordable by the smallest studio, while its features and performance make it ideal for monitoring in high-end facilities as well.

BR-S800U BR-S500U

S-VHS Player/ **S-VHS Editing Recorder**



SUPERB VIOEO PERFORMANCE - Incorporates latest picture improvement technologies for razor sharp images, with over 400 lines of horizontal resolution. Digital Y/C separation, along with a chroma noise reducer, chroma aperture correction and a 3-line cross-talk cancellation all combine to ofter outstanding image quality, even when dubling down multiple generations. OPEN ARCHITECTURE - Two plug-in slots that accept a variety of optional V/C expansion boards. One of these, the SA-K27UA board, provides an R8-232 interface for connection to computer-based editors. For use with more sophisticated edit controllers such as the V/C-BM-637U, there is the SA-K29UB S-422 Seaf interface for Computer of the SA-K28 DIA 45-pin Parallel Remote Card provides compatibility with JVC's 45-pin Parallel Edit Controllers like the RM-681U. There is also a plugi-in TBC card with DNR (logital Noise Reduction.)
VARIABLE-SPEED 32X SEARCH - Front-panel search dial provides fast and accurate viewing at up to 32x normal tape speed in forward and reverse.

VARIABLE-SPEED 32X SEARCH - Front-panel search dial provides fast and accurate viewing at up to 32x normal tape speed in forward and reverse.

4-TRACK AUDIO - Each has two Hi-Fi stereo channels with wide frequency response and a dynamic range of over 80 dB. In addition, they each have two linear tracks. The linear tracks of the 8H-S800U can be dubbed independent of each other and of the video. This is ideal for adding background music or sound effects to an existing audio track, or for more sophisticated editing. There are two audio level meters, switchable between the Hi-Fi and linear channels. Searate input and output (output only on the BR-S800U), ali channels have individual audio recording level controls.

CONTROL TRACK TIME CODE SYSTEM - Built-In time code reader (BR-S500U) and time code reader/generator (BR-S800U) utilize JVC's CTL (Control Track) Time Code System Which records absolute lape address information (hours: minutes: seconds: farmes) and the control track, and provided stat and accurate access to any farme on the video tape. Far superior to conventional control track counters that lose reference when the tape is removed from the machine. CTL Time Code can be added to the tape during the recording process or onto an existing recorded tape using the "post stripe" function, you don't have to give up an audio track. CTL Time Code is the easiest and most flexible time code available for professional VTIC and LTC time code operation there is the optional SA-RSOU VTICLTC Time Code Reader-flerenard card.

OTHER FEATURES

* Authorizing Features and the control of the superior to control.

- OTHER FEATURES

 Menu display and on-screen mode check
 Headaphone jack with adjustable level
 Audio monitor output
 External sync capability
 External sync capability
 External sync capability

SONY

PROFESSIONAL S-VHS SYSTEM

SVP-9000 **Player**



SVP-9600 Player/Recorder



The SVP-9000 S-VHS and SVO-9600 are designed as multi-purpose machines with the use of various optical interface boards. By selecting one or more of a particular board, they become dedicated machines for satellite recording, office viewing, video bizary, 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:

 Vising this 2-VHB format, they deliver superb picture playback and recording. With newly developed Digital V/C separator maintained picture quality even in composite.

 *Newly developed video cross talk canceller eliminates color blur providing hore accurate color and sharper images.

 *Four channel audio system Two H-B with a dynamic range of 900B and two linear channels with Dolly NR.

 *Two direct-drive real motors provide rapid response and smooth operations. Mode transitions such as TSP to P BCF, FAST FWD to PLAY, STOP to REWIND are instantaneous.

 *Picture search from -10 to -10 times normal speed.

 *SYNC IN for synchronizing with other video sources.

- · Automatic repeat and automatic rewind can be accomplished
- *Automatic repeat and automatic rewino can be accompussive with programmed operation.

 *There is a TIMER switch for either REC or PLAY (SVP-900 PLAY only) when selected automatically executes the selected mode when the power is turned on. This is very useful for unattended operation such as satellitle 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.

 *The SVD-9600 features sensor recording. When video signals are input, it automatically starts recording.

nals are input, it automatically starts recording. • 19" EIA rack mountable plus adjustable front controls

Optional Interface Cards:

- Uptional Interface Lards:

 *SYBK-100 33-pin interface board allows remote control of basic VTR functions.

 *SYBK-120 RS-232 Interface board allows for machine control from a computer.

 *SYBK-140 RS-422 Interface board allows either machine to be configured into any professional system.

 *SYBK-140 RS-422 Interface board allows either machine to be configured into any professional system.

 *SYBK-160 RSMPTE Time Code interface board (can only be used with SVBK-140 board).

EVO-9720 Hi8 Dual Desktop Editing Machine

BUILT-IN EDITING CAPABILITIES

plied RM-E 9720: Quick-East

plied RM-E 9720:

- Quick-Edit - By simply pressing the EDIT button at the desired point on the source tape, pressing END at the outpoint and repeating the process, a program is easily assembled, segment-by-segment on the master tape.

- Program Edit - assemble video segments that are not adjacent to one another on the original source tape. The EVO-9720 can memorize up to 99 program events and realizes automatic sequential editing of pre-assigned scenes. The editing list of the programmed time code data can be stored in the data area of the original source tape. The data can also be precalled. original source tape. The data can also be recalled, to, inserted or deleted as desired.

- of the original source tape. The data can also be recalled, added to, inserted or deleted as desired.

 Insert Editing Provides separate editing video and audio.

 Lising the video insertion function, video and AFM audio segments can be edited into an existing PCM (Pulse Code Modification) digital sound track. Samulated edit can be monitored by pressing the PREVIEW butted.

 Allows audio dubbing on the PCM tracks. Background music or commentary can be added or inserted into the PCM sound track. During editing, audio from an external microphone can be mixed with the original audio from allower or from LINE in and recorded on both the PCM and AFM audio tracks. Incorporates a digital field memory, allowing noiseless 1/5 normal speed slow motion pictures and a clear freeze picture to be played back during editing. This makes it possible to create a program with special effects. Built-in famm time code generator and reader. When using a tape without time code, you can easily stripe time code by simply pressing the Time Code Write button. (Post striping of 8mm time code will not affect any of the video and audio signals) Can also read RC (Re-writable Consumer) time code.



SUPERIOR PICTURE QUALITY

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

A/B ROLL EXPANSION CAPABILITY

A/B ROLL EXPANSION CAPABILITY
When you've outprown the customy functionality of the machine, the EVG-9720 lends itself to A/B roll expansion capability. Both the player and recorder have R8-232 serial ports that allow for external control. They can be directly connected as Source A and B to an external computer and/or the Sony FXE-100 Viceo Editing System. To further allow configuration into an A/B roll system there are external sync input terminals for both the player and recorder. When the external sync mode is set to Auto, the EVG-9720 synchronizes itself with the incoming reference signal.

- synchronizes itself with the incoming reference signal.

 ADDITIONAL FEATURES
 To provide for smoother transitions from scene to scene, the EVO-9720 has a video fader. Black or white fading can be selected as well as a duration time of 0.5 or 2 seconds. There is a GPI (General Purpose Interface) output with Itming adjustment for controlling external devices. External devices Exte

Quick-Draw Professional FOR CAMCORDERS OR STAND ALONE CAMERAS



- Designed for working from the back of a van or the trunk of your car. The top loading case has a wide open fold back top that stays neatly out of the way. It's lighter and more compact than shipping cases, thus saving valuable storage space. With other equipment crowded around it the sturdy built-in frame provides added protection. Heavy duty shoulder strap & comfortable leather hand grip. Carry it in crowds crush proof aluminum guard protects viewfirdner.
- viewfinder.

 Fits into back seat and fastens securely with seat belt.
- Holds camera with on-board battery attached.
 Lid closes with Velcro for quick-opening or secure with
- full-length zippers.

 Two trim exterior pockets and clip board pocket.

 Dual purpose rear pouch is an expandable battery chamber or all-purpose pocket.

SONY

COLOR MONITORS PVM-8041Q

- AC and DC operation (with NP-1A or 1B batteries)
 Underscan, Pulse Cross, Blue only mode
 Comb filter improves luminance/chrominance separation
 Analog R6B inputs plus component input
 NTSC/PAL/SECAM/NTSC 4.43 multi system playback
- External sync input also sync on green
 S-video input minimizes cross color/dot interference
 Built-in speaker for sound monitoring
- High durability and rack mountable
 Features built-in carrying handle

- PVM-1390 (13")

 Fine pitch picture tube; 0.37mm aperture grill for superla-
- tive resolution.
 Equipped with a fine pitch Trinitron CRT, it delivers sharp,
- *Equipped with a line pitch initinition (NT), it delivers sharp, clear pictures with precise details. It provides outstanding resolution of 450 horizontal lines.
 *Also displays 2000 characters (80 lines x.25 columns) accurately without missing a line or a character.
 *S-Video input separates luminance and chrominance video signals eliminating cross color and dot interference.
 *Equipped with comb filter which extracts maximum picture detail and eliminates color said.

- Equipped with comb filter which extracts maximum picture detail and eliminates color spill.
 Accepts both analog and digital RGB signals, allowing it to be used as a CGA display monitor (640 x 200 pixels).
 Sleek cabinet with angled screen for desktop monitoring.
 Built-in speaker provides for audio monitoring.
 Features multiple inputs, including BNC composite video, S-Video, 8-pin VTR, and 25-pin computer input.

S-Video, 8-pin VTR, and 25-pin computer input. PVM—1350 (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 inputs. • Better than 450 lines horizontal resolution • Switchable color temperature - 6500" K for broadcast standard, 9300 K for the most pleasing picture • Blue only mode switch for ultra-precise color adjustment • Built-in speaker for audio monitoring (4 audio inputs) • Standard EIA 19" rack mount capability. PVM-1351 (13")

Similar to PVM-1340 with beam current feedback circuit, color temperature selection, blue only mode, comb filter, dark tint CRT. Same audio/video inputs *Plus* –

- oars tim CNT. Same autonoviceo inputs Plus –
 Underscan Shrinks the scanned area of the picture tube approximately 5% enabling your to review the entire image area.

 H/Y delay or "pulse cross" displays horizontal and vertical blanking interval information, sync timing and skew error.

 Choice of internal or external sync via front panel switch

 Accepts digital RGB with D-sub 9-pin input

PVM-1354 Q (13") Has all the features of the PVM-1341 Plus -

- · Super Fine Pitch delivers over 600 lines horizontal resolution via video inputs, better than 900 x 200 pixels
- SMPTE Type C color phosphors permitting the most
- critical evaluation of any color subject.

 Accepts PAL, SECAM, NTSC and HTSC 4.43 video signals automatically senses and adjusts for each color system.

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- · Compatible with S-VHS, Hi-8 and U-Matic SP equipment

- Companies with S-VIS. h.H-8 and U-Manic SP equipment frame synchrotization with full trame memory synchronizes outside satellite, microwave and feeds with studio signals 4 times sub-carrier sampling. 4-bit resolution Adjustable horizontal and vertical blanking Proc-amp controls are presettable. Each control has a maximum differential persistent programment of the maximum differential persistent programment of the select differential persistent programment of select differential persistent programment programment persistent persiste
- select different operational modes.
 Optional pixel by pixel DOC (Drop-out compensator)

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

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

I.OEN IVI-7

DIGITAL TBC/FRAME SYNCHRONIZER

- Util The Late Cyrhams Synchrounizer
 Will time base correct a transcode inputs from Hi-8, S-VHS, VHS-DUB, 3/4", 3/4" VCR-DUB and composite video
 Use as a frame synchronizer, synchronizing outside
 3-5 dB chrominance and luminance noise reduction
 Full Price amp controls, drop out compensator
 Y/C delay adjustments, field and frame freeze
 Wide 5.5 MHz requency response offers 450 lines of resolution, Full 8-bit professing and a 58 dB S/N ratio
 Built-in RS-Tr0 sync generator with genlock
 input and black burst output.

The Kitchen Sync

Dual Channel TBC

- Two complete infinite window time base correctors on one IBM AT/Amiga compatible card Plugs into any Amiga or PC compatible
 Use more than one Kitchen Sync linked together to synchronize even more channels.
 S-VHS and Hi-8 compatible. Has S-video input with

- S-VHS and Hi-B compatible. Has S-video input with option for S-video out
 Complete 100% accurate sync generator built-in. Totally regenerates all sync and blanking signals.
 Absolute 100% broadcast quality output
 Built-in Proc amp with Hue. Saturation, Contrast and Brightness adjustments
 Complete digital design no pot adjustments necessary. The kitchen Sync is completely microprocessor controlled Advanced sync output useful with any VCR gaable of taking an Advanced Sync in.

RGB COMPUTER

AMELINE CIP

with Amilink VT-4000 Software

with Amilink VT-4000 Software Amilink CIP is an Amiga-based AVB roll edit controller. It is a combination of hardware and software (VT-4000) that provides flawless control of three VCRs. It is also the most complete personal video editor for the Video Toaster. It controls low-cost industrial VCRs like the Panasonic AS-1900 and AG-1970 machines with RS-232 Control (AG-700. CVD-1000 Vdeck), and machines with the Sony Control I. Protocol like the Sony EVS-3000 and SU-V-1000. You can use three of the same or in any combination. Best of all, Amilink CIP is upgradeable for professional machine control. To upgrade, you buy an upgrade kild that includes new software and professional level control cards. The system includes a new version of Amilink software designed especially for the Toaster 4000. With the new Amilink VT-4000 software, the Video Toaster is seamlessly integrated into your editing suite.

- Machine Control

 Choice of joystick, mouse, keyboard and trackball, plus an optional joy/shuttle editing keyboard
 Industry standard keyboard layout (CMX/GVG)

 Auto calculated GPI, plus 48 additional GPI triggers per

- edit with optional hardware

 Controls industry standard audio mixers

- Edit List Management
 Sophisticated search list by edit comment, content or Sophistrated sealings - 9
 Import/Export of CMX 3600 edit list on MS-DOS and Amiga-DOS
 Automatic edit list back-up
 Edit tail cleaning, list rippling, multi-field sorting
 Optimized edit list auto assembly with special integration

- Editing Control

 Preview, Perform, Review and Auto review functions

 Multi-set, Multi-trim

 Reverse play and auto review

 Pre-Roll, Post-Roll and Preview select

- Edit Modes
 Provides for multiple audio/video splits per edit event

- Provious for muliple authorized spints per educe event
 Open ended immediate/deayed transition edits
 Performs all edit modes plus "Music Video Mode" for
 easily synchronizing edits to music.
 Integrate graphics, animation and character generation
 Scene-based editing with advanced park and perform features
 Cut and Paste EDL management

- Toaster Control

 AmiLink/VT gives you total control over the Video Toaster
- as a fully integrated post-production switcher.

 Amil.ink/VT remembers all of the Frame Stores, CG Titles, and DVSs used for your production in the AmilLink edit list. You never lose any of the information you need to research to the Toddelfor.
- isst. To thever use any of the imministration used to recreate your production.

 All of the Video Tosater post-production functions are assity accessed from the Amil, ink-VT interface screen. Tosater Digital Effects, Character Generator pages of the Digital Video Frame Stores, as well as standard wipes and dissolves, can all be called up aufornatically during edits, and are stored in the edit list for later auto-assembly.

SUNRIZE INDUSTRIES AD 516 and Studio 16 The Complete Digital Audio Solution



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

Play up to 8 simultaneous tracks off one or multiple hard disks in real time.

- Optional Video Toaster Handler expansion module lets you play audio during many of the Toaster's digital video effects
- disks in real time.
 Use a mouse to slice up and rearrange sound quickly
 Mix tracks with no generation loss
 Synchronize background music with your productions
 Fade, cross fade, or eliminate sections of audio
 Create unlimited

- Single-Frame Animation Controller eliminates the need for separate or computer plug-in animation controllers. Uses industry-standard protocols, making it compatible with most popular graphic and animation software packages.

 SMPTE Time Code Generator and Reader with Built-in Drop and Non-Prop Frame Read/Write is fully programmable from an external computer and resettable from the front panel.

 Video and Audio Switcher with Two independent Video and Audio Channels. Each video channel contains both composite and S-Video inputs. Each audio channel contains two linear and two Hi-H inputs Switching can be performed either manually, or under R5232 or R5422 control. Video and audio channels are switched independently giving the GVR-S950 the ability to perform break-away edits.

 Auto-Sensing Single R5422/R5232 Input eliminates the need for optional external interfaces: Interface requirements are automatically sensed and adjusted within the recorder. Input and Psyback Video Processing allows adjustments to the video level of the incoming signal.

DEO TOASTER 4000



Production Switcher

The Video Toaster Switcher is a broadcast quality production switcher which lets you perform cuts, fades, dissolves, advanced digital effects, 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.

Additional Features:

- 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

 256 level adjustable luminance key

 Automatic or manual (T-bar) control of transitions

 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.

The Video Toaster's integrated turniance key technology gives you the ability to superimpose a weatherman over a map, five video or still graphics. Luminance key technology gives you the ability to superimpose a weatherman over a map, five 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 Toaster'CG uses built-in automatic keying to deliver titles crisply rendered over any video source, even with transparent drop shadows.

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 30' 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 second: from hard drive. These frames can also be used as inputs to the switcher for transitions and dipital effects.

ChromaFX Color Processor

ChromaZY 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 or night, sept lone, monochrome, solarization, posterization, color vignettes, and other totally unique effects such as Nuke, Chroma, Gold. Zebra, and more. ChromaZY also gives you the power to create your own customs color effects from subtle lighting changes or tinst 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. There are effects for wedding birthdays, sales, music videos, public affair messages, etc. There are even sound effects. Among the effects which are

cluded wi	in the video	oaster are:	
age Peel	Tumble Smoke	Zoom	Cube Mapping Sphere Mappin
ush Off lide	Push On Shatter	Slats Puzzle	Trajectories
issolve	Mirrors	Mosaic Tiles	Analog Trails Digital Trails

Character Generator

Toaster/CG creates YiQ-encoded, 35ns (nanoseconds) higholution titles. Toaster/CG makes adding text to your present
ions simple. Among the many powerful tools included are:

- Giant library of more than 250 PostScript fonts

- Can size fonts from 10 lines to 400 lines tail

- Variable outline and shadows

- Variable-speed crawling and scrolling of text

- Easily adjust color, shadow type, outline style and font
selection on a line, word, or character-by-character bas

- Toaster Paint

- Eventhism you make to scale to the color improse. econds) high-res-

Everything you need to create or after frue-color images tailor-made for your presentations is included in an uncluttered friendly interface. ToasterPaint makes importing and modifying flies from the CG and frame grabber easy, it also gives you the capability to merge images captured in the Toaster's high qualify 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.

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 to the most sophisticated effects seen on broadcast televation are now on your deskipp.

DPS VT-2600 Personal TBC IV

- DPS VT-2600 Personal TBC IV

 Component diglati transcoding provides s-video input and output. Digital 4:2:2 processing ensures the cleanest possible picture. Composite video signal is also enhanced by a newly developed chrominance comb filter.

 It interfaces virtually any camcorder, VCR or laser disk player to production switchers or computer video systems like the Video Toaster.

 Special features include Rock Solid Freeze (both field and frame), GPI Freeze, Variable Strobe, Forced Monochrome and Advanced Sync.

 Film Effect Strobe Mode Simules the 3-2 pull down conversion technique from a 24 trame per second tilm standard, to a 30 frame per second video standard.

 Can be installed in any Amiga or PC-compatible computers. Includes Amiga and MS-DOS software.

 Exclusive feature of the TBC IV is the 50-pin CVE (Component Video Exchange) port. When this port is connected to a DPS Personal Animation Recorder you can capture and record real-time video on the animator's can capture and record real-time video on the animator's dedicated hard drive. This combination is ideal for roto-
- scoping and other video capture processes.
 Fully compatible with TBC II, II! and Personal V-Scope. The TBC IV is operated via software, or by using an optional DPS RC-2000 multi-channel desktop controller.

DPS DR-2150 Personal Animation Recorder

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

- Combines custom ICs and a proprietary implementation of the LSI chip set enabling component 4:2:2 digital recording to a dedicated hard drive.
 Variable speed playback lets you play back 24-bit (16.7 million colors) animation in real-time 30 frames per second, or you can choose a lower frame rate to play back animation in residence of the play back animation in residence of the play back animations in slow motion.
- ond, or you can choose a lower frame rate to play back animations in slow motion.

 Has composite, S-Video and component (Betacaru/Mil) outputs. Also has a genlock input enabling it to be easily integrated with virtually any video production system.

 Supports direct rendering of all common image formats including 24-bil IFF and Video Toaster frame store files and is fully compatible with all popular animation packages including Morph Plus, Lightwave 3-D, Fractle Pro, Imagline, Vista Pro, and Cinemorph.

 Real-time video capture for rolo-scoping and other video capture applications is possible when used in combination with a DPS TBC IV card.

nova **NovaBlox** VIDEO PROCESSING SYSTEM

The NovaBlox Video Processing System is comprised of individual function modules called NovaCard of. The range of NovaCard modules includes time base correctors, frame synchronizers, sync generators, encoders, decoders, transcorders, distribution amplifiers and routing switcher NovaCards have the flexibility of plugging into either a computer or one of four NovaChards have the flexibility of plugging into either a computer or one of four NovaChards have the flexibility to the control of the contr modules. NovaCards fit into an IBM or compatible expansion slot including Amiga. Most of the NovaCards utilize RS-232 serial date for operational control and include DOS, Windows, and Amiga software. For desktop and portable applications, the C-2B chassis hold two cards. There is also the C-4 single rackmount chassis that accommodates up to four NovaCards and the three rack C-15 NovaFrame, which features 15 slots. To provide operational control when using one of the NovaChassis there are two NovaTrel Serial Control Units to choose from They provide LCD status dis play with four button operation or the NovaTrol/2 which has enhanced operation with dedicated function controls and



NOVAMATE TBC/Frame Synchronizer

One of the NovaCard modules of the NovaBlox system, the NovaNate is a unique TBC/Frame Synchronizer that satis-ties a wide range of VCR signal correction and video inter-face requirements from desktop video to satellite systems. NovaMate plugs directly into a computer or one of several chassis configurations. Control is performed either by soft-ware or NovaTrol control units. The flexibility of its modular design and microprocessor control plus its superior quality make NovaMate the ideal alternative to stand-alone and

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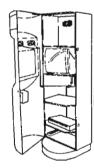


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Bill Sharer 6629 Paxton Rd. Rockville, MD 20852-3659 Voice/Fax (301) 230-2847 BIX: bsharer Compuserve: 76426.112

The Amiga Video Graphic Society

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

Pittsburgh Commodore Group No. 346

Robert W. Peach P.O. Box 16126 Pittsburgh, PA 15242 BBS: (412) 396-5483 Meets on the third Sunday of each month at Duquesne University's Mellon Hall (except July and August).

Amuse

151 First Ave.,Ste. 182 New York, NY 10003 (212) 460-8067 Fax (212) 290-6747 BBS: (718) 539-3338 Meets on the first Tuesday of the month at: NYU Main Building 32 Waverly PL, 8 p.m.

Fine Art Productions User Group Society Network

Richie Suraci
Fine Art Production
67 Maple St.
Newburgh, NY 12550
Voice/Fax (914) 561-5866
Call for information.

MicroWave User Group

Art Baldwin 3670 Delaware Ave. Buffalo, NY 14217 (716) 873-1856 BBS: (716) 873-9262 Meets on the first Wednesday of the month 7-9 p.m.

Suffolk Video Club

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

Toasterholics Anonymous Armato's Pro Video Chris Hendrick 6716 Myrtle Ave

Glendale, NY 11385

(718) 628-6800 Meets on the second Thursday of the month, 7 p.m.

LightWave User Group System Eyes Computer Store 650 Amherst St. Nashua, NH 03063 (603) 889-1234 Meets on the second Tuesday of the month, 7 p.m.

South

Vision VT Users Group Vision Communications Interactive Sam Young 4000 Piedmont Pkwy, Ste. 131 High Point, NC 27265 (910) 841-6988 Meets every six to eight weeks for five hours on

Saturday mornings.

VA Toaster Forum
Tidewater (Norfolk, Virginia
Beach, Hampton)
George Triolet
902 Tabb Lakes Dr.
Yorktown, VA 23693
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Wednesdays of the month
7 p.m.

WV Video Toaster Users Group

Destiny Images
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Charleston, WV 25364
(304) 925-4741
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of the month at Computers
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A-TUG Border States Amiga Group

Micro-Tronix 1614 Towson Ave. Fort Smith, AR 72901 (501) 782-4048 Meets on the second Saturday of the month, 9 a.m.

Arkansas Toaster Users Group David Settlemoir

David Settlemoir AG&FC Video Productions 2 Natural Resources Dr. Little Rock, AR 72205 (501) 223-6352 BBS: (501) 223-2516 Meets on the second Thursday of the month, 6 p.m.

West Tennessee Video Toaster Users Group Brian Churchill

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

Club Toaster

St.Petershurg/Clearwater Tampa Jeff Asbury, Allen. M. Drulia 9125 U.S. 19 North Pinellas Park, FL 34666 (813) 576-5242 BBS: 813-527-1722 Meets on the last Thursday of the month, 7 p.m.

Toast 'n Jam Debby Willis Computers Plus 1808 W. Int'l Speedway Blvd. #304

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VLS Graphics Users

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Southwest Florida Toaster Users Group

Jim Franke 944 Country Club Blvd. Cape Coral, FL 33990 (813) 574- 8999 Fax (813) 574-2469 Call for information.

Midwest

Channel Z Toaster User Forum

Brian Plante 492 Sheridan Rd. Evanston, IL 60202 (708) 332-1710

DMAAUG

Des Moines Amiga Group Arthur Szczygielski 4046 Bubbell Ave., Ste. 155 Des Moines, IA 50317-4434 (515) 266-5098 Eax (515) 266-1012 Meets on the last Tuesday of every month at the Christ Church, Ashworth and 74th Street, 7:30 p.m.

Discover-Ring Video Toaster

Ring Video Systems Daniel Ablart 3250 S. Harlem Ave. Riverside, IL 60546 (708) 442-5009 Fax (708) 442-5290

Digital Arts Toaster User Forum 122 W. 6th St. Bloomington, IN 47404 (812) 330-0124 Meets the second Saturday of the month, 4 p.m.

Toast of Tulsa

Computer Consultants, Inc P.O. Box 691810 Tulsa, OK 74169 (800) TOAST-OK Meets the second Saturday of the month at 2:30 p.m. at Hardesty S. Regional Library, 6737 S. 85th E. Ave.

TUGSM

Toaster Users Group of Southeastern Michigan Michael A. Greer 25109 Greenbrooke Park Southfield, MI 48034 (313) 355-5916

Video and Graphics SIG Charles Meier P.O. Box 811 Bridgeton, MO 63044 (314) 739-5181 Meets last Wednesday of the month. Call for details.

Mid-West ToastMeisters Great Plains Motion Picture Company Brent Malnack 11011 Q St.Studio 105 C Omaha, NE 68137

Rocky Mountain Amiga Users Toasters Sig Don James

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Englewood, CO 80112

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Dahlia St., Denver, 7-9 p.m.

West

Inland Empire Toaster Users

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

LA Video Toaster Group

Mark Stross 10330 La Tima Canyon Rd. Sun Valley, CA 91352 (818) 552-5024 Fax (818) 552-5025 Meets on the second Saturday of the month from noon to 5 p.m. at 10844 Acarna St., No. Hollywood.

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

Sacramento Video Toaster Society

Glen Cornish
Applied Computer Systems
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North Highlands, CA 95660
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(916) 338-2000
BBS:(916) 338-2543
Meets on the third
Wednesday of the month
6:30 p.m.

San Diego Video Toaster Users Group Mike Amron

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

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

Amiga LightWave User Group MG Software & Video Mark Miller 6660 Reservoir Ln. San Diego, CA 92115 (619) 463-0545 Call for information.

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N.A.G. Desktop Video SIG Scott Wehba Infinite Solutions

Infinite Solutions 14780 SW Osprey Dr., Suite 240 Beaserton, OR 97007 (503) 579-5799 Meets on the fourth Thursday of the month 7 p.m.

Amiga Video Association, Inc. Forrest McKinney PO Box 550248 Dallas, TX 75355-0248 (214) 826-5113

Professional Video Toaster Forum

Onmi International Trading Monte Strohl 316 Westlake Ave. N. Seattle, WA 98109 (206) 628-2925 Fax (206) 628-4324 Meets on the second Wednesday of the month 7 p.m. T.U.G. 98XXX

Larry Simpson
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Washington Area User Group Wade Nelson Spectral Multi-Media 131 106th Ave. N.E. Bellevue, WA 98004 (206) 451-4075 Meets on the first Saturday of the month, 11:00 a.m.

Canada

B.C. Professional Video Toaster Forum

Anthony Alvaro
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Video Makers of Calgary

David Lundquist The Computer Shop 3515 18 St. SW Calgary, Alberta T2T 4T9 Canada (403) 243-4356 Meets first Wednesday of the month, 7 p.m.

Video Toaster Group

Jean-Francois Boisclair
Maison du Logiciel
Softwarehouse
2466 Jean-Talon Est,
Montreal, Quebec H2E (W2
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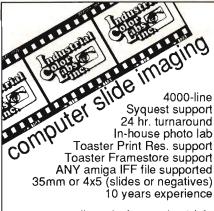


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DR. VIDEO continued from page 52

action when you finally see someone cashing in on your work big time.

On the technical front, there is good and bad news. The trick is to insert something into the signal that causes a videotape recorder to have difficulty making a good recording. thus protecting yourself against piracy. The bad news is that whatever you insert has to trip up only recorders, not players, monitors or TVs.

You can purchase copy-protection equipment or request that your dub house use it. However, the copy-protection technique is a protected process, and you have to pay royalties for its use. (It is no good trying to pirate the antipiracy system.)

Another way to protect your work is that once an image is set on videotape, it isn't much use for anything besides video. Second-generation VHS tapes look pretty bad, so most copying is self-limiting and probably can be thought of as a few sales lost rather than as inventory stolen. But any facility capable of making high-enough quality dubs to be a market threat will probably be able to get past the guard signals in short order.

Video Health Note:

Tektronix, of Beaverton, Ore., makes a really neat pair of videotapes on reading waveform monitors and vectorscopes. Both of these tapes contain important information, and it is straight from the source. (Tektronix is one of the oldest and most reliable monitoring equipment companies in the business.) Best of all, they are free. To keep from overloading the shipping clerks (and to get your request to the right person), simply drop the doctor a note at the address below with your name, address and phone number. I will pass your request to Tektronix. Allow about six weeks for delivery.

Send your questions and comments to: Dr. Video, c/o Video Toaster User, 273 Mathilda Ave., Sunnyvale, CA 94086.

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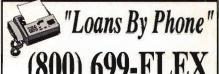
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LAST WORD

The Dream Studio

Stranahan's Strategy for Pleasant Slumber



hy Lee Stranahan



've spent a large amount of time in the past few years working out a little mental puzzle. It's a brain diversion that I never seem to finish—I'm constantly trying to figure out my dream studio. I'll let you in on a little personal trivia: When some people lie down at night to go sleep, they count sheep. I figure out what equipment I want to buy and how I'd hook it up. It never fails to put me to sleep with a

smile on my face.

I realize how sad that is, by the way.

At any rate, it's a fun way to pass time, and I don't seem to be the only one who thinks about this kind of thing. I have some rules for my game. First, I try to get as much bang for the buck as possible. Versatility is very important—the days of the dedicated box are over. That's why PC-based solutions make sense.

Second, I'm trying to put together a realistic studio, capable of producing a lot of money-making program-



On the road to building a dream studio

ming, from talk shows to sitcoms on the video side. I'd also like the studio to be flexible enough to produce books, music CD-ROMs and other media.

Third, it's got to be really cool.

One other note before we get underway. This is my fantasy, so none of the gear I mention is the "right" stuff to use. It's just what I like. You might pick other gear and more power to you. So let's play a round of dream studio.

The thing to realize about my ideal working studio is that I wouldn't be the only one working there. It takes many professionals to put a TV show together, although I don't believe it requires nearly as many people as Hollywood producers hire for projects. Not all the work

involves video production either—scripts need to be written, print materials created and office work done.

I'd put a Macintosh on everyone's desk, from the receptionist in the lobby to the graphics studio in the back. (More on that next month.) I like the Mac quite a bit as a business computer, and they are quite easy to network, which allows the lifeline of the business—information and images—to flow easily between departments.

The Mac also has a bunch of software that I use. ClarisWorks is a powerful, integrated suite of software that includes word processing, drawing, spreadsheet and database functions. (Every word you've ever read of mine was written in ClarisWorks.) I also use Aldus' TouchBase and DataBook to keep track of phone numbers and my schedule. Finally, QuickMail is a strong electronic mail system to keep the information flowing freely. (One other note: I can be found on America Online. Look for me under the screen name STRANAHAN.)

A working video studio can actually end up producing as much paper as video, especially for the creation of items such as video cassette box sleeves and promotional materials. I'm not alone when it comes to appreciating Adobe Photoshop and Fractal Painter X2. These are powerful image processing and paint programs, and it's no wonder they've become industry standards. (I also use Photoshop occasionally with a scanner for LightWave image maps.)

An area where Mac software really helps is scriptwriting. Writing for movies or TV can be very little fun because of the strict formatting rules. That's why I use a program called Final Draft. It does all the formatting automatically, including inserting page breaks and creating revised pages. Final Draft even lets people put helpful little script notes into the manuscript, making editing easier.

Another important organizational tool for video production is a stack of index cards. People use them to plan segments and shows, and writers rely on them to hash out the beats of a story. Mac Toolkit, the company that makes Final Draft, also produces a program called Corkboard that replaces those index cards with... well, something more expensive.

Corkboard offers much more flexibility than those 3x5 cards ever did, allowing you to have cards with text, pictures or even Quicktime movies. And you can stack those cards in a variety of handy ways. When I learned scriptwriting, I learned to think on index cards.

That's the front office. Next month, we'll visit the back rooms and talk about my dream studio's audio and video setups.



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