

VIDEO TOASTER USER

an audio publications magazine

APRIL/MAY 1993 • \$4.00 US/ \$5.00 CAN

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New Special F/X Column

Review: Sony's 3-Chip Camera

Survey: Video Toaster Fonts

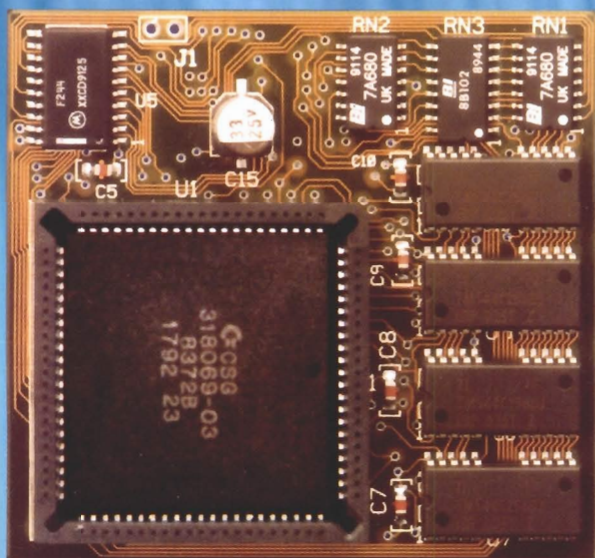
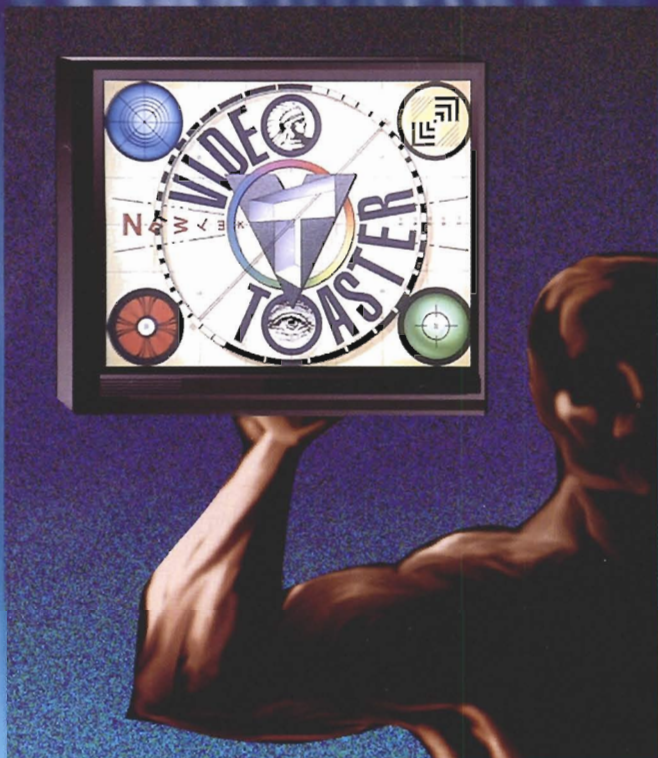


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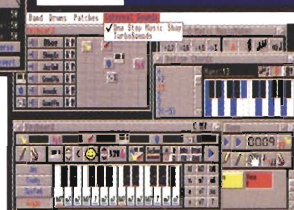
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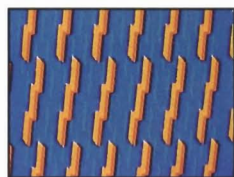


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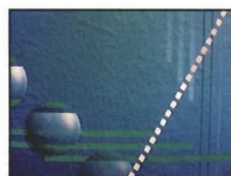
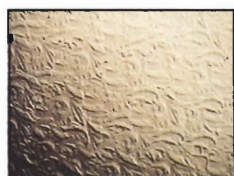
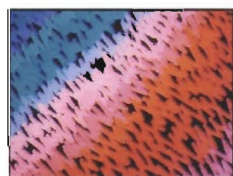
AMERICA'S BEST ANIMATIONS



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- STATIC BACKGROUNDS
- ANIMATED BACKGROUNDS
- "MUSIC" BACKGROUNDS
- LIVE-ACTION "STOCK" ELEMENTS



OVER 60 OUTSTANDING
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■ "The backgrounds are more than good looking, they're stunning, . . . such as those you might see on Cinemax or CNBC." *Frank Kelly, Author/Producer, San Jose, CA.*

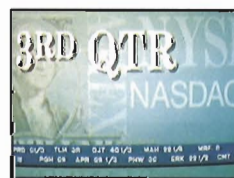
■ "... Network quality stuff!" *Mark Bindrim, Townhouse Post Prod., Washington, DC.*



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- FLAG ANIMATIONS
- GOV'T AND ELECTION ANIMATIONS
- BUSINESS AND FINANCIAL ANIMATIONS
- "BONUS" ANIMATIONS
- OVER 80 2-D AND 3-D ANIMATIONS



• MANY WITH SOUND EFFECTS



■ "After 2 commercial productions, the time I saved more than paid for all four packages." *Tom Warren, WDCA-TV, Bethesda, MD.*

■ "One of the best investments that I made all year!" *Marq Anderson Speck, SCM Studios, Detroit, MI.*

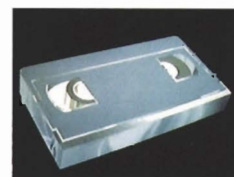
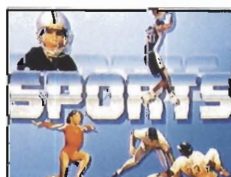


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• MANY WITH SOUND EFFECTS



■ "Not only do they improve production quality but they are outstanding sales tools" *Frank Kelly, Author/Producer, San Jose, CA.*

■ "We've used the holiday animations for the past three years and doubled our business every year." *Gary Warren, Storer Cable, Woodbury, NJ.*

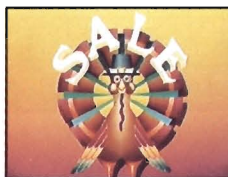


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- NEW YEAR'S DAY
- PRESIDENTS DAY
- VALENTINES DAY
- ST. PATRICK'S DAY
- MOTHER'S DAY
- FATHER'S DAY
- AND OVER 75 CHRISTMAS ANIMATIONS
- EASTER
- MEMORIAL DAY
- 4TH OF JULY
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• MANY WITH SOUND EFFECTS



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- ANIMATED FIGHT SEQUENCE
- ANIMATED ROMAN "ANIMATED" SCENES
- ANIMATED RUNNING HORSE
- FLYING "DAYS OF THE WEEK BANNERS"
- AND MORE...

• MANY WITH SOUNDEFFECTS



■ "The objects were animated over 'black' which meant that I could use the toasters luminance keyer to play these animations over my client's footage . . . I impressed the pants off my client." *Frank Kelly, Producer, Spot Productions, San Jose, CA.*

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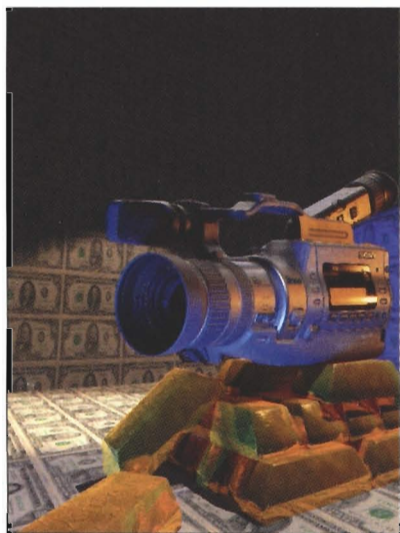
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APRIL/MAY 1993 ISSUE NUMBER 11



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SUBSCRIBER UPDATE

In the last issue of Video Toaster User, I hinted at some important NewTek announcements that would be made at National Association of Broadcasters (NAB) in April. While I can't go into any details as to what those announcements might be, I *can* offer some very compelling reasons why you should make every effort to get to Las Vegas between April 19-22.

Since the last issue of VTU, we've set up our own special Toaster event within the larger NAB show. This event, which will be held in NAB's Multimedia World, is called the Video Toaster User Pavilion. The VTU Pavilion consists of two 30' x 40' spaces with a 30' x 30' NewTek booth between them. The two 30' x 40' spaces have been subdivided into 36 booths that will be occupied by the best third-party Toaster product and service providers. The 30' x 30' NewTek booth will be used by NewTek to demonstrate the latest Toaster technology.

At this writing, almost 20 companies have reserved 26 booths in the VTU Pavilion. These companies include Alpha Video, NewTek, Unili Graphics, Byrd's Eye Software, ASDG, Avid Publications, Axiom Software, Blue Ribbon Soundworks, Y/C Plus, Visual Surface Technology, Nucleus Engineering, RealSoft, RGB Computer & Video, Texture City, Videomedia, Champion Productions, Rave Video, PreVue Technology, Positron Publishing and there are more to come.

Normally, a ticket for the NAB exhibition costs \$125. However, we have a very limited number of special "exhibits only" passes for just \$10 per ticket. This pass is good for all four days of the NAB exhibition. If you'd like to receive one of these passes, send a check for \$10, made payable to: Avid Publications, 21611 Stevens Creek Blvd., Cupertino, CA 95014. Call 1-408-252-0508 to check on ticket availability. If you'd like to check on hotel availability, call NAB Housing at (800) 424-5250.

The Video Toaster User Pavilion at NAB will be the most exciting Toaster event ever produced. Come to see the latest third-party Video Toaster products, as well as the latest Toaster technology from NewTek. I'm looking forward to seeing you there.

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Editor/Publisher

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QUESTIONS AND TIPS

Direct your Toaster-specific questions to John Gross. Direct your general video questions to Rick Lehtinen.

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If you are interested in writing an article for Video Toaster User, send a written request for our writer's guidelines (include your telephone number and subjects that you are prepared to write about) and include a self-addressed stamped envelope. Direct your inquiries to Writer's Guidelines.

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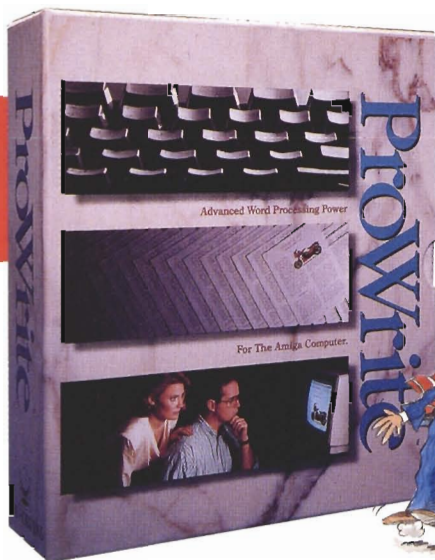
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TOASTER TALK

As you can probably tell by the front cover of this issue, I'm intrigued by the financial opportunities that are being created by the desktop video revolution. In my last Toaster Talk column, I discussed the recent erosion of economic and technical barriers that have long prevented "real" people from communicating via audio-visual media. In response, I got a number of calls from folks who had been nursing video project ideas for a long time, but just didn't know how to get started. They were all particularly interested in producing special-interest videos that they could sell directly to the public, and while they felt very strongly about the marketability of their video, they were unsure about how to get the marketing ball rolling. Oh, by the way, none of them had much money.

Because of the direct sales approach and the lack of extensive funding, these folks were all prime candidates to participate in a process that is commonly known as guerilla video marketing (GVM). GVM is tailor-made for people who want to make money by selling information on videotape. To illustrate how it works, I will outline a hypothetical video project that takes us step-by-step through the GVM process.

Step one in the GVM process is pretty obvious: You need to have a subject for your video. Fortunately, ideas are easy; however, the trick is to come up with the *right* idea. Your idea can't be too popular, as most of those have already been done by people who have bigger budgets than you. You have to pick a not-so-popular subject that still has the potential to sell enough copies to make a tidy profit.

OK, you have a good idea. You're ready to go into production, right? Wrong! This is where a lot of videographers get ahead of themselves and end up losing money. Before you tape a single scene, run your idea through a simple filter to see if it has any profit potential. Ask yourself this important question: Is there a low-cost/cost-effective method of letting potential customers know that your tape exists for their viewing pleasure?

There are two key components to that question. The first relates to the cost. Remember, you don't have much money. The other key component is: Can you reach the right people?

Do your potential customers have clubs or associations? Do they have newsletters? Are there magazines on the subject? How do people who are interested in your video subject get information now? Is it possible to promote your video there? Before you go any further, you must know if there is a cost-effective way to reach people interested in your video. If it's not cost effective, go back to step one and pick a new idea.

Now you're ready to go into production, right? Wrong again, Bucko. Production is actually one of the last phases of the GVM process. Basically, you want to defer any activities that actually cost money as far into the project as possible. At this point, the only thing you're out is the time spent in research.

Let's say our subject is fish cleaning and you've discovered that your target audience has a national association, say Fish Cleaners of America. They even have a quarterly newsletter, the Fish Cleaning Gazette, and you found out that they would be delighted to run a small ad for a modest fee. In talking to the association representative you also learned that a lot of the members read a specific magazine. You follow up this info and get a rate card from the magazine's advertising department. Their regular ads are too expensive, but the classified section prices are not too stratospheric.

While researching, you've also come up with an outline for a script. From this outline, you can extract a few highlights and make a very simple classified ad. It reads something like:

SECRETS OF THE PROS. Learn how to clean fish without getting any smell on you. 1-hour videotape. Send check or money order for \$29.95 to P.O. Box 1010, Anytown, USA 99999.

While the traditional wisdom for running a small classified is to have people send for free information, which you would follow up with an elaborate letter or brochure, etc., I believe it is better to ask for the money up front. Real money from real customers is, in my opinion, the quickest and best way to evaluate the sales potential for your tape. If your mailbox fills up with checks, then you know you have the right idea and you waste no time going into production. If, however, you get very little or no response, you send the checks back with a note explaining that you've decided not to produce the tape and head back to the drawing board. All you lose is a few hundred bucks (or less) for the cost of

By Jim Plant



the classified or newsletter ad. Following these steps, with a \$1,000 marketing budget, you get four or five cracks at coming up with a good video idea.

It is also smart to do some advance preparations that will allow you to go into production immediately, if appropriate. There are a variety of postal rules and regulations that outline your obligations to folks who have sent you money by mail.

So just how much money can you make using the guerilla video methods outlined above? Let's do a little math and find out. Your video turns out to be a modest seller and you sell 600 copies at \$29.95 a piece before sales start to wind down. With this scenario, you end up with figures like those to the left (see box).

Ten thousand pre-tax bucks isn't bad for one video project, and your profit could easily be a whole lot more. What if you sold 2,000 tapes? Run the numbers and see what you get. You could pay for your entire Video Toaster system with one project. The real beauty of the GVM process is that it doesn't take a whole lot of capital up front to get started. If you have the right idea, the first checks that arrive pay for your production, duplication, packaging, and shipping charges. The rest is profit. You can plow it into more effective advertising space or a direct-mail campaign to increase tape sales. Or you can just put the money in your pocket and start over with a fresh idea.

Just do me one favor, would you? Send me a letter and a copy of your tape so that we can put your success story in Toaster ProFiles.

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Classified Ad	250.00
Cost of Production	1,500.00
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WHY? Because only GVP:

- ▶ Has a proven 5 year history of the best product performance and support.

- ▶ Gives you the choice of state-of-the-art 68030 or 68040 CPU Power at blazing speeds of 25, 33, 40 or 50MHZ. No matter what your budget or speed requirements, GVP has the right solution for you.

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- On-board SCSI-II compatible DMA Hard Drive Controller
- Up to 16MB of high speed 32 Bit-Wide Memory expansion (up to 64MB with 16MB SIMMS available late 1992)
- Ability to transform your accelerator into the ultimate hardcard with GVP's new improved snap on Hard Disk mount kit
- On-board future expansion possibilities with the GVP exclusive 32-Bit expansion bus (including GVP's EGS 110/24). This feature alone literally obsoletes ALL other accelerator products.
- ▶ Backs ALL GVP accelerators with a full 2-year warranty and upgrade program.

Choose GVP's newest, fastest and feature filled accelerator... the A2000 G-FORCE040

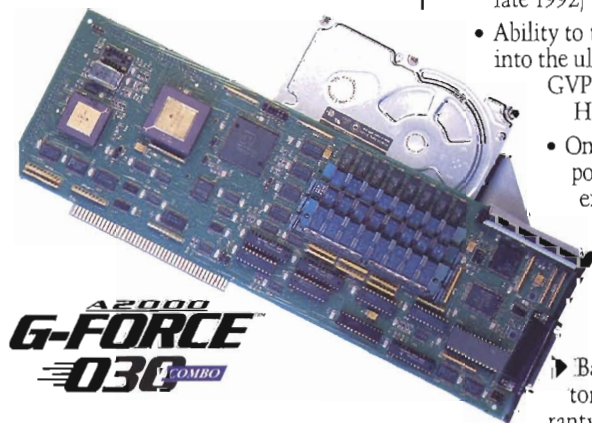
It's the fastest accelerator — bar none:

- ▶ 68040 CPU running at up to a blazing 33MHZ clockspeed, outperforms even high end workstations costing thousands more.

It's the most highly integrated — bar none:

- ▶ High performance onboard SCSI/SCSI II compatible hard drive controller.
- ▶ On-board serial port with speeds up to 625 Kbps and two 16 byte hardware buffers (1 read/ 1 write) to prevent data loss. Ideal for adding additional modems, printers etc.
- ▶ On-board user configurable parallel port for Amiga/PC compatibility.
- ▶ Future expansion via GVP's exclusive GVP compatible 32-Bit expansion bus.

**CALL YOUR GVP DEALER AND ORDER
A GVP G-FORCE 030 or G-FORCE 040 TODAY!**



**A2000
G-FORCE
030 COMBO**



GREAT VALLEY PRODUCTS, INC.
660 CLARK AVENUE
KING OF PRUSSIA, PA 19406
U.S.A.

PHONE 215•337•8770
FAX 215•337•9922

For more information or your nearest GVP Dealer,
call 215-337-8770. Dealer inquiries welcome.
For technical support call 215-354-9495.

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NEW PRODUCTS

TRexx Goes Pro

Top Amiga software publisher ASDG is getting into the Toaster support business! Actually, their Art Department Professional image processing and conversion software has long been a staple in Toaster-based studios. With their new program, *TRexx Professional*, you can generate Switcher scripts, custom wipes and projects and much more. Perhaps most exceptionally, *TRexx Professional* offers the first standalone high-quality conversion between NewTek's Framestore format and the Amiga-standard IFF24—no more loading Switcher and then ToasterPaint just to convert a framestore. Also unique is that you can generate a single script that controls a number of different applications in concert. Supported programs, each with its own point-and-click command panel for script generation, include: SunRize's Studio 16 and their great audio boards; Toaster's Switcher, LightWave, TPaint and Genlock; and edit and single-frame controllers including Amilink, MediaPhile, BCD 2000A, Nucleus' Personal SFC, DQ Taco and Sony V-Box. Of course, you can edit the command buttons as well as create your own. While the scripts created are in ARexx, the program displays an English-language equivalent for easy understanding, and provides most standard word-processing commands for editing your script. There's much more to *TRexx Pro*'s seven modules—watch VTU for a full review coming soon.

ASDG

925 Stewart St.
Madison, WI 53713
(608) 273-6585

No More Toaster Envy for Mac Users

The price/performance barrier for broadcast-quality Macintosh video has been smashed with the arrival of *ToasterLink*—the desktop video gateway between NewTek's Video Toaster and the Apple Macintosh.

ToasterLink is a hardware/software solution that offers high-speed SCSI connectivity between the Video Toaster and Macintosh with a proprietary interface card installed in the Toaster. It allows

Macintosh-generated graphics to be output to broadcast-quality video through the Toaster, and frame-grabbed video images from the Toaster to be brought into the Macintosh environment to create powerful graphics—giving Mac graphic artists and video producers all the Toaster benefits in a familiar working environment.

The \$595 package features a wide selection of 192 effects—including the most popular dissolves, wipes and digital effects—that can be activated by



clicking on screen icons using a mouse; Organic and Warp effects; plus 3D animation using LightWave.

NewTek Sales
900 East 79th
Bloomington, MN 55420
(800) 368-5441
(Call (800) 765-3406 for a free video about the Toaster.)

Real-Time Animation Playback

Amiga animators who want to record high-quality animations on videotape at full speed often feel compelled to consider purchasing a frame-accurate VTR. Alas, this solution is often too costly for the animator working within a tight budget.

Now, with Asimware Innovation's *AsimVTR*, a slate of images and a hard drive, a user can effortlessly play an animation at 60 frames per second.

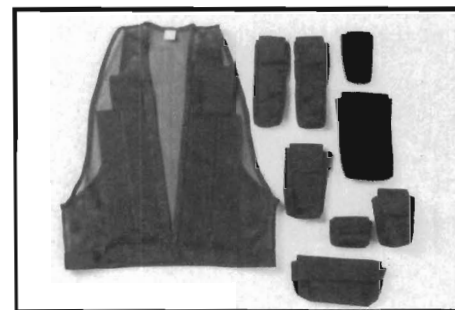
AsimVTR supports all Amiga screen modes, including HAM, EHB and overscan, and supports both DCTV and HAM-E. Playback speed and length

is only limited by the hard drive and controller. The software features extensive commands for loading, saving, and moving frames, as well as full ARexx support.

Asimware Innovations
101 Country Club Drive
Hamilton, OT 18K 5W4
Canada
(416) 578-4916

A Vested Interest in Video

Tired of lugging around heavy accessory bags and spare tapes? Are your pockets overflowing with batteries and video bric-a-brac? Perhaps you should



take a look at ControlTrack Productions' new *Video Vest*.

Designed from a super lightweight web-mesh light enough to wear under a suit coat, the *VideoVest* features roomy detachable pockets that can be connected to the *VideoVest* via Velcro fasteners—wearers can find their own comfortable and efficient design.

The *VideoVest* comes with ten pockets (two of which are permanently attached), designed to hold the most popular camcorder batteries and accessories. The *VideoVest* comes with a lifetime guarantee.

Kevin Campbell
ControlTrack Productions
275 N. Broadway, Suite 303
Wichita, KS 67202
(316) 265-3769

Fax/Voice Mail

New from GVP is *PhonePak VFX*—a breakthrough system for fax and voice communications on your Amiga. Designed for use in homes and small businesses, *PhonePak VFX* permits full privacy of incoming messages, remote retrieval of stored messages and combined fax/voice mail messages. Now you can afford to add a virtual message center to your Toaster-based business.

Great Valley Products, Inc.
600 Clark Avenue
King of Prussia, PA 19406
(215) 337-8770
(215) 337-9922 FAX

... Continued on Page 12



A 2000

A 3000

A 4000



MUSEUM PIECES

Attain a new status of computer communications while enhancing the value of your Amiga® 2000/3000/4000.

Standalone telecommunications devices are ancient history, because ...

PHONEPAK™ VFX

PhonePak VFX™ handles all the calls

PhonePak VFX™ by GVP turns your Amiga into a professional telecommunications center with integrated voice mail, answering machine and fax messaging options. Think of the possibilities when you can:

- Customize individualized greetings and private user mailboxes.
- Automatically receive and store high-resolution faxes on your hard disk for on-screen viewing or plain paper printing.
- View a fax while you simultaneously listen to voice "cover sheet" messages from any standard fax/phone machine.
- Record and play outgoing **PhonePak™** voice messages in digital standard IFF audio format.
- Manage contacts with built-in database retrieval of names, addresses, phone and fax numbers.

- Throw out (or recycle) that low quality, costly, curly, nasty thermal paper. You won't need it any more!
- Capitalize on outgoing fax polling and delay functions, using **PhonePak's** intuitive, built-in scheduler.
- Configure all dialing and other telephone line control functions with ARexx or **PhonePak's** exclusive Operator™ scripting language.

PhonePak VFX™ won't hold up the works

The GVP logo on the box means the most comprehensive manuals and most knowledgeable tech support in the business.

PhonePak uses GVP's powerful multi-tasking DMA chip technology.

PhonePak frees your serial port for modem or TBC connections.



PhonePak intelligently transfers incoming calls over Centrex® or other compatible phone networks and ...

PhonePak offers privacy for incoming and outgoing faxes!

No other computer-based messaging device packs such utility on any one board, at any price. Integrated, affordable fax, answering machine and voice mail features mean that other telecommunications systems are history.

*The future belongs to **PhonePak!***

For more information or your nearest GVP dealer phone 215-337-8770

For technical information, phone 215-354-9495



GREAT VALLEY PRODUCTS, INC. • 600 CLARK AVENUE, KING OF PRUSSIA, PA 19406 USA
PHONE 215-337-8770 • FAX 215-337-9922

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COMPUTE Releases Amiga Answer Book

Included free with your Toaster system is a powerful multitasking personal computer called the Amiga. The more you learn about the Amiga, the better equipped you'll be to deal with any unexpected dilemmas. Whether you're adding a CD-ROM drive, getting the best performance from a graphics program, or transferring data between the Amiga and another computer, Denny Atkin's *Best Amiga Tips and Secrets* has the answers to your questions. This 250-page volume contains a veritable cornucopia of useful ideas for all Amiga-using videographers.

Compute Publications
324 West Wendover Ave.
Greensboro, NC 27408
(919) 275-9809

New TBC on a Board

Prime Image has introduced *TBC/PCB*, a plug-in board for use with Amiga and IBM PC systems.

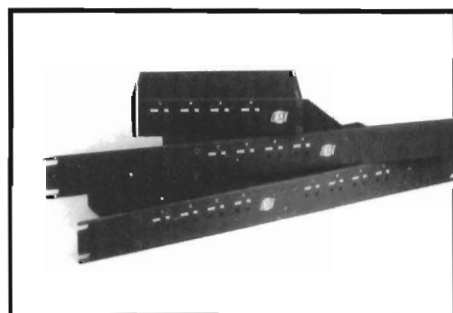
Claiming to be the smallest on the market, this new board features full digital operation to eliminate drift; the ability to accept and provide required timing for all VCRs (including consumer models); zero internal alignment adjustments; and composite and Y/C in and out.

The *TBC/PCB* lets you control proc amp video output with a video remote panel, as well as through a host computer terminal. Adjustments include video level, chroma level, set-up, hue, field or freeze frame, H and subcarrier system timing and signal enhancement.

Bobbie Hendershot
19943 Via Escuela
Saratoga, CA 95070
(408) 867-6519
Fax (408) 926-7294

Eliminate Cable Congestion

Tired of tripping over cables? With ESE's *ES-*



2011x4 video distribution amplifier, you can potentially save thousands of dollars in cable cost. The broadcast-quality ES-201, with separate gain and equalization controls for each of the four outputs,

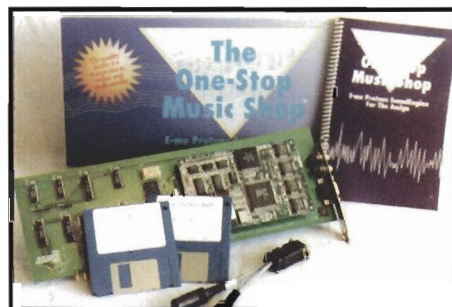
can compensate for up to 1,000 feet of RG-59 cable. Each of the four video outputs are independently adjustable via separate (recessed) front panel controls. A loop-thru input and four isolated outputs are accessible via rear panel-mounted BNC connectors.

ESE
142 Sierra Street
El Segundo, CA 90245
(310) 322-2136

Band in a Box

What's video without audio? Blue Ribbons Soundworks' *One-Stop Music Shop*, based on the E-Mu Proteus sound module, promises to make this a mute—make that moot—question.

The sound engine is a CD-quality stereo sound-



card compatible with all Amiga platforms, including the new 4000. It features hundreds of 16-bit CD-quality digital samples, each professionally recorded, looped and edited to optimize the quality and variety of recorded sounds. Sonic options include piano, piccolo, tambourine, xylophone and even Sousaphone.

One-Stop Music Shop also includes an extra MIDI interface which lets you use your serial port for genlocks, controllers, modems or SMPTE hardware instead of tying it up with MIDI. Their exclusive signal-processing ASIC chip can handle 32 channels of digital decoding and reconstruction in real-time with minimal artifacts.

The special editing software allows you to design custom instruments, mix samples, do cross-fades and to change the envelope and delay as well as allowing you to modulate each sound with a variety of sources. The sound engine is also compatible with other BlueRibbon software packages such as the popular Bar&Pipes Professional.

Blue Ribbon Soundworks, Ltd.
North Highland Station
P.O. Box 8689
Atlanta, GA 30306
(404) 315-0212
Fax (404) 312-0213

Animate 3D Text

Unili Graphics, best known for their Broadcast Fonts 3D series, announces the release of *Wave Writer*—a revolutionary program for creation and animation of text phrases in LightWave 3D.

Product features include: Workbench 2.0 inter-

face with keyboard control for all functions; visual display of current font and phrase; color and material selection by name from preset lists; automatic positioning of front and back light sources; six new 3D fonts featuring full international character support and a new space-saving format; automatic kerning support for all Broadcast Fonts 3D for LightWave; and proprietary AQPoint Extrusion routines that allow creation of custom bevels, serpentine extrudes, or flat characters. Suggested retail price: \$129.95

Unili Graphics
143 Lorraine Ave.
Pittsburg, CA 94565
(510) 439-1580

Steady as She Goes

Videographers looking for a portable, high-performance camcorder will find an easy-to-operate, cost-effective camcorder in the Sony *EVO-150TR* Handycam camcorder.

The *EVO-150TR* is a 1/3" CCD chip (410,000 pixels) Hi8 camcorder that produces 400 TV lines of resolution in a lightweight package (2lbs., 12 ozs.) The camera's Steady Shot Optical Stabilization System dramatically reduces image jostling while maintaining image size and resolution.

The *EVO-150TR* has a stereo zoom microphone; color LCD viewfinder; AV and S-Video connecting cable; wireless remote control and much more.

Contact your regional Sony sales office, or call:
(800) 523-SONY for product information.

Check the Archives

Looking to build an archival system? Mitsubishi Electronics America has introduced the *DX-2000U*, a unique high-resolution analog video recorder that stores images obtained from any composite, S-Video or RGB source, in a digital format on standard Digital Audio Tape (DAT) cassettes.

The *DX-2000U* stores and retrieves high-resolu-



tion images from medical, graphics, and surveillance systems, as well as educational records. It can store up to 1,290 color images or 2,000 monochrome images on a single 120-minute DAT cassette. The images have a resolution greater than 500 lines when displayed on a monochrome or analog RGB display. With its high-sampling frequency and broad video bandwidth, the *DX-2000U* reproduces high-resolution color and monochrome images that

are remarkably true to the originals.

Mitsubishi Professional Electronics Division
Russell Novy/Cheryll Phillips
(800) 733-8439

Amiga Accelerator

Although the Amiga has been around for eight years, until now there's been no hard-disk caching software for it. Silicon Prairie Software introduces *HyperCache Professional 1.01*—the high-performance filesystem and device accelerator for the Amiga.

HyperCache Pro improves the performance of not only hard and floppy disks, but also CD-ROMs, optical floppies and tape sub-systems, and fully supports CDTV and the new A4000 IDE controller. Working at a very abstract level, HyperCache Pro can cache any AmigaDOS-compatible block-accessible device. A special version is also included to take advantage of the full 32-bit architecture of the Amiga 3000 and 4000.

Silicon Prairie Software
2326 Francis St.
Regina, SK S4N 2P7 Canada
(306) 352-0358
or, in the U.S.:
Micro-PACE
(800) 362-9653

Non-linear Editing

Digital Micronics, Inc. has released the *Digital EditMaster* board—a digital non-linear editing system for the Amiga computer that allows users to record from a video camera or VCR directly to the hard disk drive. The compression board digitizes, compresses and stores video segments onto the hard drive in real time. The video segments can then be edited, modified and played back to tape. Animation frames can be compressed and stored to the hard drive on a frame-by-frame basis and then played back in real time directly to tape (without the need for an expensive frame-by-frame recorder). Video clips and computer animations can be easily combined for a final production.

Digital EditMaster works in full-screen, real-time NTSC (30 frames per second), PAL (25 fps) or S-VHS. Full motion video compression and decompression ratios are user selectable—the ratios vary from 3:1 to 100:1. From video enthusiasts to video professionals, this new system has something to offer to everyone.

Digital Micronics, Inc.
2075 Corte del Nogal
Suite N
Carlsbad, CA 92009
(619) 931-8554
Fax (619) 931-8516

Attack of the Humanoids

From the designer of MotionMan and CycleMan comes an exquisite new set of 3D human models for

use with NewTek, Amiga, and PC rendering software. *Humanoid* takes animation and rendering of the human form to a new level of sophistication and realism.

Available in LightWave 3D and Imagine (and other formats soon), each kit includes four figures—a man, muscular man, woman and child—with the following features.

Hierarchical: expertly designed motion cycles for walking and running; pre-assembled hierarchies that permit motion design; articulations in all limbs; and movable eyes and eyelids.

Morphing: library of facial expressions to simulate speaking, smiling, frowning, surprise, etc.; fully-morphable object construction; morphable hand poses to create various gestures without using complex finger joints.

And more: two levels of detail for each figure; designed to real-world scale; Imagine format kit is compatible with NTSC and PAL (available on both Amiga and PC-DOS disks); and a manual with special instructions on morphing and hierarchical features.

Crestline Software Publishing
P.O. Box 4691
Crestline, CA 92325
(909) 338-1786

RABical Dude!

RAB-BYTE 3D Professional Series tapes offer the same quality 3D animations, music and titles seen everyday on sports shows, network identifications and movie introductions. Produced by RAB-BYTE Computer Graphics, Inc., the 3D Professional Series provides easy-to-use instructions that let you incorporate animations, music and titles into your video productions, whether you're an experienced videographer or home camcorder user.

Volume One offers themes such as: Happy Birthday, Happy New Year, Easter, St. Patrick's Day, Happy Anniversary, Mother's and Father's Day, Happy Hanukkah and Merry Christmas. Also included are wedding titles and a bridal album with pages that open up to different wedding events (each page turns into keyable black for easy transition to live video).

Each animation and graphic is unique and original. All the bumps, reflections, metals, texture mapping and transparencies available to the big production houses are now at your fingertips.

RAB-BYTE Computer Graphics
452 Wilson Ave.
Lindenwold, NJ 08021
(609) 627-1010
Fax (609) 627-6492

Finnish 3D Fun

Realsoft KY of Finland announces the release of *REAL 3D V2*—a full-featured 3D animation, modeling, and rendering program for Amiga users. *REAL 3D V2* brings features to the desktop platform previously available only on high-end workstations, like: particle animation, collision detection, inverse kinematics, skeletal control, CSG and cubic spline objects.

What does this mean? Using your desktop PC, *REAL 3D V2* lets you create seemingly complex 3D animations. Objects can have their own "intelligence" and react as if in a real-world environment. For example:

- Put a ball on a tabletop, tilt the table and watch the ball roll off.
- Throw snowflakes into simulated wind and watch them blow around.
- Create a bowling alley, throw the bowling ball, watch how it spins because of friction with the alley floor, and see the pins knocked by the ball and collide with each other.
- Create an object which gradually changes material from say, wood to marble, to glass, then to shiny gold.

REAL 3D V2 also features an innovative interface; an extensive collection of modeling tools; an advanced and very flexible material/texture editor; and a comprehensive lineup of rendering features.

Programs Plus & Video
544 Queen St.
Chatham, Ontario N7M 2J6 Canada
(519) 436-0988
Fax (519) 351-1334

Tiling Textures

Quite a few 24-bit texture libraries are available for Toaster users, but good seamless textures are hard to find. *TexTiles Volume II* is a 40-image set of mostly abstract images with names like Bigskin, Dudes, Pablum and Stuckko. Each 256 x 256-pixel 24-bit tile is created mathematically to be perfectly seamless (stackable in 1D and 2D arrays without a noticeable join), making it ideal for tiled surface coloring with LightWave and other Amiga 3D and 2D graphics programs. They work equally well as textures for bump, transparency, specular and diffuse mapping. The two-disk set includes software that installs the JPEG-compressed image files, optionally expanding them while doing so. Also included is a small manual with miniature color representations of all 40 images.

Mannikin Sceptre Graphics
3208-C E. Colonial Dr., Ste. 285
Orlando, FL 32803
(407) 644-9547

Batching It

Need to batch-process animation frames? Tired of hassling with ARExx scripts? ASA Publishing Company announces the release of *ADP Tools 1.1*. Users of Art Department can now apply multiple operators to entire animations without generating cumbersome ARExx scripts. This product was created by animators for animators and is ideal for cross-platform applications. Other features include macro creation and execution and fast real-time previews of 24-bit animations.

ASA Publishing Company
281 Green Lea Place
Thousand Oaks, CA 91361
(805) 379-3816

SO WE'VE GOT 'EM ALL IN A ROW.



Talk to anyone who knows. They'll tell you Alpha Video is one of the magical spots on this planet where all the proverbial ducks are in a proverbial row. Are we bragging? No. Just reporting the facts. So, "Big Deal," you say. "What Does this Mean to Me?"

IT MEANS THE HOT PRODUCTS.

Does it matter that we had the Video Toaster in our hot little hands about the day after NewTek did? Well, actually, yes, if one wants to be the biggest, best Toaster Dealer in the Nation. And we are. We are also the place to call for JVC, Panasonic, and all the other big brands. If you need it for your Toaster, we have the goodies.

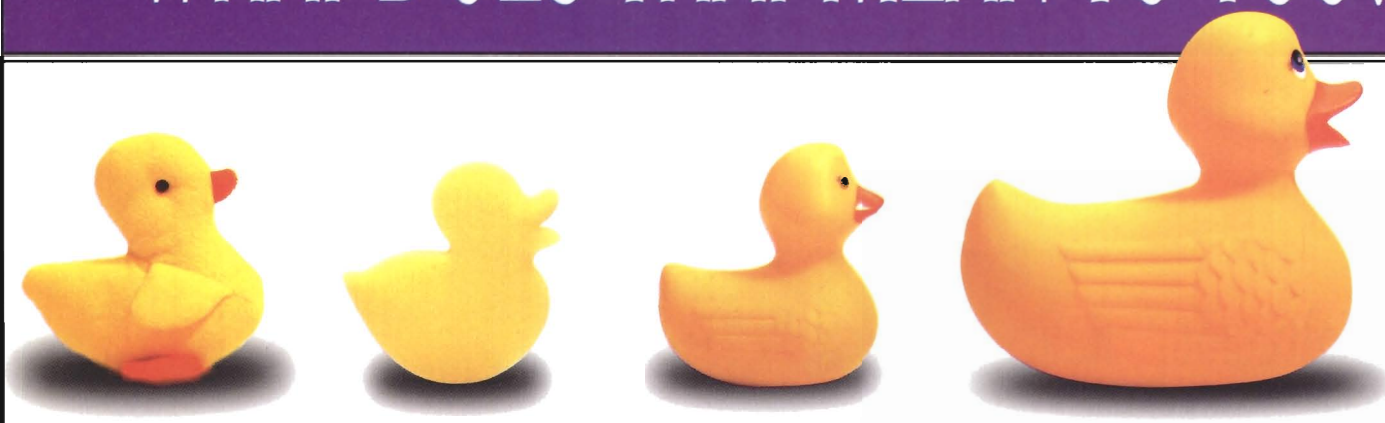
IT MEANS UNFAILING SERVICE.

What good are all the electronic marvels of our time if you can't get them fixed when they produce nothing but "snow?" Our service people not only know how things work, they know why they don't. And they have the doo-dads to fix them. No standing in line for an urgent part transplant.

IT MEANS HIGH-TECH SUPPORT.

Have a question that's not covered in the owners manual? Call us at (612) 881-2055. We can fill in the missing pieces. We've been doing this longer than just about anyone else. Put our experience to work for you.

WHAT DOES THAT MEAN TO YOU?



IT MEANS INNOVATIVE TRAINING.

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

IT MEANS THE TOP VIDEO PEOPLE.

If you're looking for people who know more about video than Alpha Video people, you're in for a long search. You have a better chance that Ed McMahon will be dropping ten million dollars on your door step. We're always adding to our group, too, so if you have a résumé flambé along with a scorching demo reel, give some thought to sending it to us. We'll review it and get back to you. Send it to Jay Critzer's attention.



7836 Second Avenue South
Bloomington, MN 55420
PHONE: (612) 881-2055
FAX: (612) 881-4835

PANASONIC • JVC • GVP • RGB AMILINK • FUJI VIDEO TAPE

Video Toaster and LightWave 3D are registered trademarks of NewTek, Inc.

Hollywood, New York Ltd.

Emmy nominee and MTV award winner Paul Goldberg, founder and president of Hollywood, New York Ltd., has been working with images from an early age. "I got my first camera when I was 13 years old. I'll never forget," he says, "I won my first big award with my 35mm Nikon." Goldberg won the Kodak Scholastic Award for *Exultation* (a still photograph of a friend taken one day while they were skipping school).

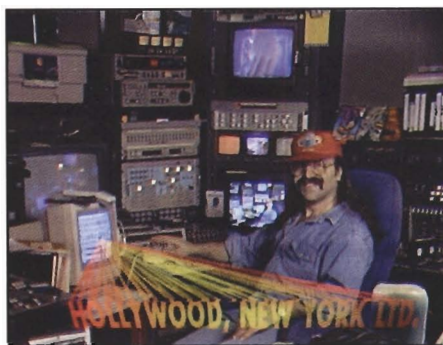
"Moving pictures piqued my interest when the technology became available to regular guys like me," Goldberg states. After graduating from college in the '70s, Goldberg planned to take a position with one of the networks but quickly found that all three networks were going through vast automation complete with massive layoffs. "Talk about bad timing!" As usual, Goldberg made the best of a difficult situation. "I took the extra time and shot film constantly," he says. "My philosophy still is—no matter what—shoot. Film is cheap. The more you shoot, the more you learn, the better you get. And most importantly, you'll have a ready-made demo reel."

His theory paid off. "Half of the footage I shot 'for free,' I used to get jobs. The first few assignments were with ad agencies, then industrial and government training videos." From there, Goldberg went on to shoot commercials and finally, movies. Some of his high-profile work includes shooting promos for Steven Spielberg's *Batteries Not Included* and video sequences for *Presumed Innocent* with Harrison Ford.

In 1988, Goldberg became involved with *MuscleSport, USA*, a television show that quickly rose to "must-see" status in the health and fitness world. "*MuscleSport, USA* combines all aspects of the body-building lifestyle, from contest highlights to nutritional guidelines," he says. "I was in my second year with *MuscleSport, USA* when I heard about the Video Toaster. From what I read, I felt it was right on the money—literally." In fact, Goldberg ordered his Toaster sight unseen. "My Toaster arrived in December of '91," he recalls. "It was amazing. I didn't have to peer over an engineer's shoulder, telling him when to do a transition. Nor did I have to wait while he stopped the tape, pre-rolled, and programmed the machine to execute. I could edit on the fly! I never before thought I could be a video artist. Now I am."

After a week or two of learning, Goldberg decided to take his Toaster with him to on-line sessions. "A guy using a high-end Mirage switcher saw what I was doing with the Toaster and was blown away. I remember him saying, 'That Video Toaster is doing things that I can't do!' Boy, did that make me feel great."

Meanwhile, Goldberg continued to add to his own editing facility at home. "Finally, when I had a suite that could do the job, I decided to take *MuscleSport, USA* in-house," he says. "By editing the



Grant Boucher Productions

Grant Boucher is a freelance Video Toaster consultant/animator based in Orlando, Florida. "My first experience with computerized graphics came when I was in the 10th grade and signed up for a computer class," Boucher recalls. He found he had little fun unless graphics were involved. In those days, Boucher's computer of choice was the Apple IIe. "Programming was boring to me without moving colors and shapes around," he says. Boucher quickly learned just about everything there was to know about BASIC programming and graphics.

When asked how he became interested in the Amiga he explains, "By 1985 I had an Apple IIe of my own at home. I was looking to upgrade to the newly released Apple IIGS, but I couldn't find it anywhere." Frustrated, Boucher found a dealer that told him about a new computer called the Amiga. "Seeing the DeluxePaint demo fly colors around the screen amazed me. I was sold," he remembers. Boucher

show myself, I was able to save \$15,000 each month. I used the extra money to improve my suite at home." Currently, Goldberg's suite houses several videotape machines—a portable one-inch, a RecamYIQ and a BetaSP; his Video Toaster System; and a wide assortment of Toaster-related software, including his personal favorite, ToasterVision by Byrd's Eye Software. "With it, I can automate all of the Toaster effects, CG pages, etc. I love it."

In addition to *MuscleSport, USA*, Goldberg continues to work on commercials. Most recently, he produced a spot for Goldfinger, an exotic dance club in New York. A controversy soon rose around the piece because Time-Warner, owner of the local cable company, decided that the commercial was too explicit and not suitable for airing. Ironically, Time-Warner published Madonna's *Erotica*. Internationally syndicated *A Current Affair* learned of the seemingly con-

purchased an Amiga 1000 on the spot.

Boucher was so convinced of the Amiga's future, that he took a job selling them. It was then that he discovered the Video Toaster. "I was working in an Amiga dealership and had heard of a new invention—NewTek's soon-to-ship Video Toaster," Boucher says. "Fortunately, since I was the main graphics expert, my job required that I learn anything and everything about the Toaster." Boucher's appetite for computer graphics production grew with each new skill he mastered. It wasn't long before he was an independent animator. His project list contains a number of local productions involving morphing, title work and custom video transitions.

Boucher specializes in human modeling and creating special effects in LightWave 3D. Some of his more organic creations include realistic fire, multi-layered explosions, flowing water and animated clouds. "Through trial-and-error I've come up with my first major special effect, the plasma sphere in my video *The Sorcerer's Familiar*. My inspiration is Ray Harryhausen, the special effects genius behind all the *Sinbad* movies," Boucher explains. "My animations reflect my background in hard science, science fiction and fantasy."

In addition to his animation work, Boucher is also an accomplished games designer, photographer and sci-fi/fantasy author. He has completed several projects under the *Star Wars*/LucasFilm Ltd. license, TSR's *Dungeons and Dragons* and Interplay's *Lord of the Rings*.

During the evenings, Boucher commutes his expertise through a rapidly expanding adult graphics production course at Orlando's WVC Information Technology Center ([407] 292-8696). "Everyone from complete computer novices to local producers attends my classes," he comments.

"My ultimate goal is to write, direct, and animate my own films," Boucher reflects. "I intend to use LightWave 3D to take computer graphics in general into a never-before seen realm of character based storylines for film."

Grant Boucher
Grant Boucher Productions
Orlando, Florida
(407) 281-4096

tradictory rulings and picked up the story. *A Current Affair* not only interviewed Goldberg and his client, they also aired the controversial spot five or six times within the context of the show. After all the dust settled, Goldberg promptly picked up a deal to shoot the forthcoming *Girls of Goldfinger* video. An interesting sidebar: The teaser for that episode of *A Current Affair* was produced using the Toaster.

Goldberg has a full slate of projects to shoot and produce, including *MuscleSport, USA* which has been signed for another year. Goldberg concludes that, "If the Video Toaster hadn't come along, I wouldn't have the freedom to choose my projects and make the money I'm making."

Paul Goldberg
Hollywood, New York Ltd.
(718) 224-3333



Toaster Marmalade

Marc Stross is president and founder of Toaster Marmalade, a full-service production facility in Los Angeles, California. "I named my production facility 'Toaster Marmalade' because I wanted people to know what platform I chose to work on. I wanted to put my 'mouth where my money was'."

"As far back as I can remember, I've been into computers in one way or another," Stross notes. "When I was at boarding school, I would sneak into the room where the teletype stations were. I figured out how to tap into the local Navy base and played computer games with the teletype operators there. So that no one would notice the missing paper, I used rolls of paper towels from the bathrooms."

"After finishing high school, I decided to pursue a degree in design," he says. "I went to the Art Center College of Design in Pasadena." There, Stross earned his degree in film and computer graphics. "By the end of school, I had worked on everything: IBMs, Macs, you name it. But I found that I preferred the Amiga because it was faster, cheaper, and had the best quality for video," he comments.

Stross's first personal computer was an Amiga 1000 with NewTek's Digi-Paint software. While at a trade show, he heard of the development of a "black box" that could move video around. "I was

tremendously excited. When I found out that it was NewTek's 'black box,' I was even more excited because I was so impressed with Digi-Paint," he remembers.

"When I saw the Toaster formally unveiled at an AmiExpo in the summer of 1990, I decided right then to go all out putting together Toaster Marmalade," Stross says. When the Video Toaster shipped in October of 1990, Stross was one of the first to configure a Toaster-based graphics workstation.

He landed his first Toaster job within a week of setting up. At the time, Stross had neither a frame-accurate deck nor a single-frame controller. He rendered his fledgling animation through DCTV. "My client was so pleased that on top of my fee, he gave me a \$500 bonus. I was flabbergasted," Stross recalls.

From there, Toaster Marmalade garnered bigger and better projects. Stross's work may be seen on NBC, HBO and BET. However, Toaster Marmalade's most recent and challenging project is the production of the Sci-Fi Channel's *Mysteries from Beyond the Other Dominion*. Broadcast Saturday mornings, *Other Dominion* has quickly risen to the top of the cable channel's originally-produced shows. "With 26 episodes already completed, we've been approached to produce another year's worth of programming," Stross says.

Stross's activities are not limited to Toaster Marmalade, however. He also serves as president of the Los Angeles Toaster Users' Group, originally founded by Video Toaster guru (and VTU Editorial Consultant) Lee Stranahan. LATUG meets once a month at CBS studios with 50 to 100 attendees. They have a total of 500+ registered members.

Toaster Marmalade has expanded from a one-man operation to an eight-person production team with a wide range of projects on the horizon. "At a time when cost-cutting (while maintaining high quality) has become crucial to the industry, I feel Toaster Marmalade is ready with an effective, low-price solution to video graphics."

"My dad predicted, 'The future is not going to be on big screens. It will be in the hundreds of upcoming cable channels. If you're smart, you'll get into the service industry that supports those channels.' Following my father's advice enabled me to exceed my ultimate goals."

Marc Stross
Toaster Marmalade
(213) 259-9033

UPDATE

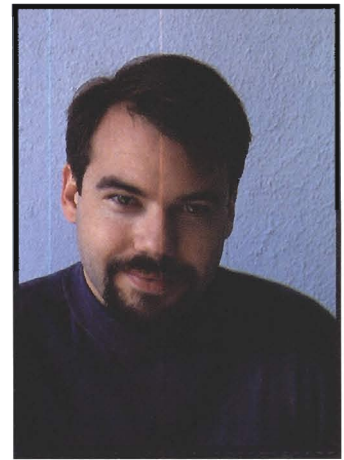
Joel Tessler (see *ProFiles*, October/November 1992 VTU) and Jim Mixon have collaborated to form a new bulletin board system called Toaster Universe. Toaster Universe can be found on the existing Media Zone BBS. It focuses on desktop video and LightWave 3D applications. There are several sub-sections, including "Objectivity" for objects, "Gallery" for scene files and animations, "VT Underground" for behind-the-scenes looks at Video Toaster industry development and finally, a section devoted to video called *ToasterWired*.

Joel Tessler
(305) 944-5656
Toaster Universe BBS
(305) 821-0455

If you or someone you know has an interesting or unusual Toaster application, please send information to: VTU Profiles, 21611 Stevens Creek Blvd., Cupertino, CA 95014

Q&A DEAR JOHN

By John Gross



T There's lots of Dear John mail this month so let's get right to it:

Q: What is a good time code solution for a Toaster desktop entrepreneur? Is NewTek planning time code capabilities in a future release? With all the capabilities for video in the Toaster, why not build in time code, edit decision lists, etc. Why can't it be an edit control system?

Keith Rose
Waipahu, Hawaii

A: Since the Toaster's initial release, NewTek has said that the current system is not the final product. The plan has always been to offer *total* video capabilities with the Toaster. It seems to me that this means the Toaster will eventually offer editing capabilities and more features that we can't even begin to imagine right now (those NewTek folks are pretty resourceful).

But until then, edit control must be external. Before recommending a solution, I need to know what you plan on doing, what capabilities you desire, what type of decks you have and how much you want to spend. There is no one correct answer as pretty much any edit controller will work with the Toaster to some degree.

Basic cuts-only manual edit controllers can start at around \$1,000, but they don't offer any Toaster control; the Toaster just acts as a standard switcher (which is fine). If you want the edit controller to control your Toaster you need to look at one of the computerized controllers. The Amiga platform has the AmiLink controller, which provides total control of the Toaster's Switcher and can operate with either parallel or serial decks. On the Mac side, consider the Sundance system, which can control serial decks. And finally, on the IBM side there is the TAO Editizer, which works with most any deck. Each of these systems has advantages, so you need to determine which you are comfortable with. Talk to your dealer about prices, as they vary depending on the type of equipment you have and what kind of editing you wish to perform.

Q: I am interested in making educational videos on topics ranging from Native American storytelling to geological and archeological video animations and documentaries. I believe that the capabilities offered by NewTek's

Toaster and the Amiga platform for video and animation can begin to tap into this vast educational market as never before.

These videos will require the integrated use of software with 2D and 3D graphic animation capabilities. LightWave 3D is by far the most generally sophisticated and easy-to-use 3D program I have ever worked with—Kudos to NewTek! ToasterPaint, however, lacks features found in most standard paint programs, such as airbrush and masking, nor does it have animation capability. Deluxe Paint IV has some of these capabilities, but I understand that there is no way to make DPaint or any other Amiga software work within the Toaster environment.

I'm also aware of scenery software that can use U.S.G.S. data to create geologically accurate landscapes. These models, I've been told, cannot be imported into LightWave. Since all of the pieces seem to be available on one platform, I find it hard to believe that they cannot work together. I have worked with developers enough to know that often there is a way around obstacles, although they are not generally known because of the complexity of the solution.

Is there a way around this set of problems? If not, do you know if NewTek will be upgrading ToasterPaint into a more sophisticated package that includes animation? What about an import feature for LightWave that will work with other program's models?

Any advice, information or suggestions that you can give would be greatly appreciated, and if I've really missed the boat somewhere, please tell me!

Theresa Breznau
Living Earth Studios
Bluff, Utah

A: The videos you mention are a perfect application for the Toaster and a few other software packages on the Amiga.

Actually, it's not true that other Amiga software doesn't work within the Toaster environment. I am constantly using other programs while my Toaster is running and performing tasks. This is called multi-tasking, and it's built into the Amiga.

Deluxe Paint works well with the Toaster. Any image you save from DPaint and most other Amiga paint programs can be loaded into ToasterPaint. DPaint animations, however, cannot be loaded into ToasterPaint. Depending on how much memory you

...Continued on Page 20

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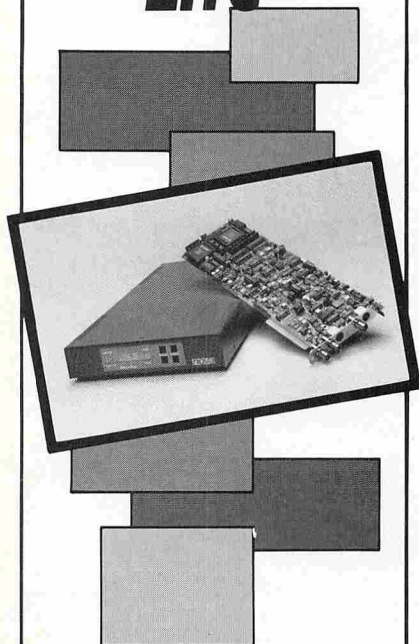
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Dear John Continued from Page 18

have, you may not be able to run the Toaster and DPaint at the same time, but you can certainly run them separately.

Currently, there are no 24-bit paint programs that can perform real-time animation. 24-bit images contain too much information to allow fast, easy movement on the screen. But it's only a matter of time, however, until technology allows us to do this.

Pixel 3D Professional (Axiom Software) and InterChange Plus (Syndesis Corp.) are two great programs that allow easy conversion of objects between different data formats. [Editor's note: Both are reviewed in this issue.] Both let you load Vista Pro and Scenery Animator objects and convert them into LightWave objects. LightWave itself allows you to directly load 3D Studio, Wavefront, Swivel 3D, Sculpt 3D/4D, and AutoCAD DXF objects and convert them on the fly. Syndesis Corp. also sells TIO modules (Toaster Input/Output) that permit loading of other non-standard formats directly into LightWave.

Finally, if you prefer using Macintosh paint programs, you may want to think of investing in NewTek's ToasterLink. This lets you connect your Mac to your Toaster and quickly send files back and forth while converting them on the fly. This is a great option if you don't like using ToasterPaint. You can use any paint program on the Mac, then send the file over to the Toaster.

Q: Is there a way to render frames from LightWave directly onto a SCSI-driven tape drive device?

The tape drive in question is a MaxStream 150, made by Maynard, whose tech support denies the fact that the drive can be used with an Amiga in the first place! I keep thinking there must be a way, but my lack of technical knowledge and experience prevents me from diving in, simply because I don't quite know where to begin. Help me, Obi Wan Kenobi, you are my only hope.

Christopher O' Neil
Austin, Texas

A: Unfortunately, I don't think even Obi Wan could help you with this one. I once tried to get a Maxstream tape drive to work with an Amiga and had no luck whatsoever. Most Amiga tape drives are used for backup purposes only. When the manual states that LightWave frames can be rendered to a storage device, it is primarily referring to hard drives, optical drives or removable hard drives. There are some high-end tape devices that also work with the Amiga, but I don't think you will have any luck trying to get the MaxStream to work. Sometimes SCSI protocols aren't entirely compatible across different computer platforms.

Q: I've been using LightWave to recreate special effects used in science fiction shows based in outer space. I'm trying to create the spectacular halo effects that occur around a sun or star, which usually include rays of light expanding outward from the object's perimeter. The other effect I would like to create is the "photon" used in almost every *Star Trek* episode and movie. This type of object has the following attributes: it includes some sparkling, dancing rays of light and periods of hot and cold spots from within the object's luminous body (like a flame). Any suggestions for creating these effects? I've tried different values of trans-

parency, specularly, diffusion and refraction on a sphere in conjunction with different light sources, but to no avail.

Mell J. Boretsky
New Berlin, Wisconsin

A: If you load the planet object that comes with LightWave 2.0, you will see a good example of a halo effect in the atmosphere surface. Basically, halos around stars are just larger transparent spheres with a few specific settings. Make sure you turn Luminous on as this causes it to "glow." Also, it is very important to use transparent edges, which makes the sphere's edges "disappear" into the atmosphere. I generally use a fractal noise pattern as a Transparency texture to cause a random transparency in the object (use slightly different values for the Transparency and the fractal noise Texture Value settings). For the rays of light shooting out from the stars, you need to actually model them and make them transparent. It also helps to use transparency falloff.

A great trick for this is to use the Grid texture in Transparency. For example, let's say you have a "ray" that is 10 meters long (on the Y axis). If the origin (pivot point) of the ray is set at either end of the ray, you can set the Transparency level to 100% and then click on the Texture button (still in Transparency) and choose Grid as the texture. Set the Texture Size Y value to 10 and make the Texture Size 10 as well. Also, make sure Texture Center is set to 0 on Y (assuming that's where the end of the ray was designed). If you set Texture Value to 0, that means that at the center of the texture (0 on Y), there will be 0% transparency. Now, setting the texture Falloff allows the texture to fade to the original transparency value, which was set to 100%. If you set a value of 10% for Falloff, that means that every meter away from the texture's center, the object fades an additional 10%. Therefore at 5 meters away from the "center", the object is 50% transparent, and at 10 meters from the center, the object is totally transparent. Of course, these values are assuming we started with a texture value of 0%. Adjustments would have to be made if we started with a different value. Of course, once the new LightWave is released, all this won't be necessary, as you can just click on the Lens Flare button to see starlight complete with all the little streaks of light (see my preview in *Video Toaster User*, February/March 1993).

The new LightWave will also make creating photons much easier, but for now, I recommend using some of the techniques listed above with a fractal noise velocity pattern to simulate the flames. If the photons are moving, you can use world coordinates instead of velocity. It's also a good idea to use several different photon objects with different transparencies and surface values nested inside one another, to give the photon a convincing look.

VTU

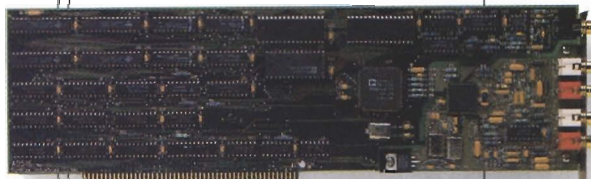
John Gross is a Video Toaster graphic artist primarily using LightWave 3D. He conducts seminars on Toaster use and is currently working as an animator on the upcoming Steven Spielberg television series, *SeaQuest*.

Questions can be sent to him at:

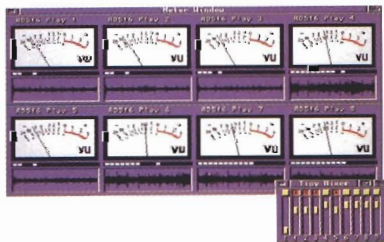
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Video Production

The Video Toaster goes a long way towards solving your video problems. But what about sound? Do you want to do ADR or voice-overs? Do you need to synchronize background music with your productions? How do you add foot-

steps, door knocks, and other sound effects to your video or animation? Do you need to fade, cross fade, or eliminate sections of audio? Can you edit your audio, or are you stuck with the first take?

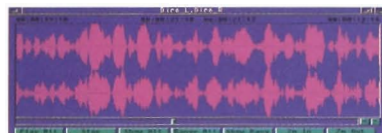
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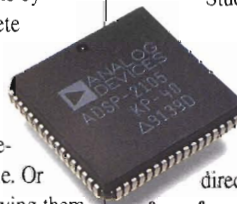


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S L I C E S

Slices is the column with valuable suggestions and tips for Toaster users. Our first look at the Switcher (*Video Toaster User*, October/November 1992) covered the Video Toaster's digital channel and how it was used when performing special effects and edits. Last time (*VTU*, December 1992/January 1993), we looked a bit more closely at the framebuffers DV1 and DV2, and how they were employed to create special-effects "looks." In this issue, we continue with the third installment.

We'll look at the Switcher's ability to freeze and grab a frame of video. We'll also learn how to process the grab so that it is rock-steady, and investigate some interesting framebuffer quirks that you may find some uses for. While you may not see an immediate need nor have an urgent use for some of these items, your awareness could fuel unexpected creative fires. Besides, the Toaster is fun to fool around with. You may even discover new combinations of effects.

Frame Grabbing

The advertising for freeze-frame devices often contains a great deal of ballyhoo. Understanding what the advertising mavens *mean* can be an exercise not unlike learning a foreign language. However, if you understand the nature of the video signal (i.e., how real-life images are converted into an electronic signal), you'll have no difficulty comprehending The Grabbed Frame. For purposes of clarity, I'm going to treat this topic in a mighty simple manner. If you're technical by nature, grit your teeth or drop down past the next few paragraphs. We'll catch up with you in a moment.

Essentially, the video signal is made up of a sequence of still pictures displayed one after another, very quickly. These pictures are called *frames*. To enhance the illusion of smooth, uninterrupted movement, each frame is further divided into a set of odd and even numbered lines, which are shown in alternating pairs, even more quickly. These subdivided frames (one odd, one even) are called *fields*.

Time base correctors, thanks to the internal memory they use to correct timing errors in the video signal, work with these discrete elements called frames and fields. They have the ability to grab a single field out of the multitude that are passing through on their way to your television monitor. Since a field is the smallest full-screen element that goes into the video signal, it is a completely stable image. Once grabbed, it is steady and solid. However, since a field consists of

only *one-half* of a complete frame, diagonal and near-horizontal lines will appear somewhat jaggy. In other words, you lack the resolution of a full frame.

You can improve the field grab by freezing an entire frame of video. Two fields, an odd and an even, are captured in sequence. Together they comprise a frame, a full-screen element with all the resolution of the two fields combined. Hey, no more jaggies. However, since this pair of sequential fields was recorded by the video equipment at a rate of 60 fields per second, it is possible that something in the camera's field of view was moving too fast to be fully captured in the same position by two successive fields. An object in one position on the first field may be in another position by the time the second field was recorded. The result, when the two fields are displayed as one frame: the odd and even lines of the moving object don't match up. It's a jittery frame grab. You might notice this in the form of a subtle flicker, or a much larger shake, on moving objects in the picture.

Due to the quirky nature of the encoded video signal, however, the Toaster goes even further when it grabs video. An element of the video signal not yet discussed is called color phase. It is encoded into the signal in such a manner that it shifts its orientation by 90 degrees with every passing field. In order to capture the full color information within the video signal, the Toaster grabs *four* sequential fields when you click the Freeze button. This allows the color subcarrier to rotate a full 360 degrees so that the Toaster can be sure it has captured all of the proper color information available. The result is what appears to be a more jittery freeze frame of video. When you click on the Toaster's Freeze button to grab a frame, you're seeing four sequential fields of video being displayed simultaneously in each framebuffer. This is a color frame. The Toaster grabs it to give you all the image quality it can.

Of course it looks jittery. Things were *moving* during those four fields.

So, how can you grab freeze frames, and how can you eliminate unwanted jitter? Let's answer that by grabbing some video first, and then we'll see where we can go from there.

Freezing Video with the Toaster

If the steps you're about to take are unfamiliar, or you're pretty uncertain about the Toaster's framebuffers, DV1 and DV2, I recommend you read last issue's Slices column before continuing. The rest of you, buckle up.

By James Hebert



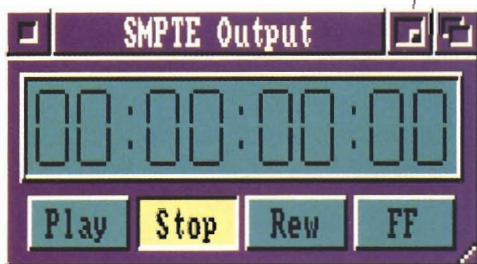
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You're going to need a video source connected to the Toaster. I'll use input 1 for this session.

Reminder: the Freeze button and the DV1 and DV2 buttons let you in on what's happening with the framebuffers.

- With the Freeze button pushed in, there is a freeze-frame image in one (or both) of the buffers.
- With the Freeze button out, the buffers will act in tandem—either both are in (when you select one, both will activate) or both are out. If they're in, the buffers are processing live digital video. If they are out, the digital channel is available but not active.

Now we're going to grab a frame. There are actually several ways to control the Toaster Switcher while you grab a frame. In fact, it is possible to grab a frame of video from any source on the Preview bus while any source is passing through the Program bus, uninterrupted by your framegrabbing actions. But first, let's capture a frame.

Step One—Setting up for the Grab

- Select input 1 on both the Program bus and the Preview bus. We'll discuss the reason for selecting both buses later.
- Check the Freeze button. If it's pushed in, click on it once to release it. If it's not pushed in, leave it as is.
- Click DV1 or DV2 to engage the framebuffers and activate the digital channel. You should have input 1, DV1, and DV2 all depressed on the Program bus.

Step Two—Grabbing the Frame

- Click the Freeze button when you see the scene you want to grab.

You have just captured a color frame of video. Four fields now reside in DV1 and in DV2. Select each buffer to see the four fields of video. Unless there was

little or no movement at the moment you froze the shot, it's likely you're seeing some jitter among those four fields.

Step Three—Choosing a Framebuffer to Process

Typically, one framebuffer is able to capture a better-looking color frame. Compare DV1 to DV2. One will appear to have a slightly clearer, sharper set of fields. This is important, *because you can decide which framebuffer the Switcher uses to create a stable image.*

- Select the framebuffer with the better color frame on the Program bus.
- Select the framebuffer you want to be rewritten with the motion-removed image on Preview bus. (This can be the same buffer, if you prefer. The color frame will be over-written by the processed frame.)

When you activate motion removal in the next step, the Toaster will look at the framebuffer selected on the Program bus, process the field data and write the new image into the framebuffer selected on the Preview bus.

(If you're unsure which framebuffer's color frame will give you better results, select DV1 on *both* Program and Preview, then run motion removal. In a moment you'll see the results in DV1. If the results are not to your liking, select DV2 on both Program and Preview and run motion removal. In another moment you'll see the results in DV2. Choose the buffer containing the better image and save it to disk.)

Step Four—Removing Unwanted Motion

Based on the amount of motion or jitter you see in the framebuffer, you have two choices.

- If there is an average amount of jitter, press Alt-f on the keyboard. This processes the four fields down to a

two-field image (a video frame). Most of the time this will be sufficient.

- If there is a *lot* of jitter, press Alt-d on the keyboard. This processes the four fields down to a single field. Remember, a single field is more jaggy, but it may be necessary to remove all unwanted motion.

Step Five—Saving the Frame You Want

The Toaster always saves the image that is selected on the Preview bus. This is important to know!

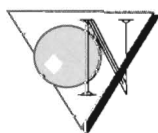
- Select the framebuffer you wish to save on the Preview bus. (To be certain, I always tend to select the same buffer on both buses before saving. That way I know that the image I see is the image I save.)
- Select the Save Frame button.
- Press the period key (.) on the numeric keypad to locate an unused Framestore number.
- Enter a name for the image and press Return on the keyboard.
- Press Enter on the numeric keypad.
- A menu asks if you wish to save one or four fields. Select four. The frame will be saved to disk.

Because of the manner in which the Toaster operates, there are other ways of setting up the Switcher to grab frames. The method we just covered actually interrupts the program output because it grabs video and then displays the grab instantly. You can grab a frame into DV1 and DV2 on the Preview bus, leaving the Program bus unchanged. This is useful for grabbing a quick freeze frame during a live production (when you can't interrupt the program output). Here's how.

Alternate Step One—Setting up for the Offline Grab

- The framebuffers need to be inactive. Make sure that

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neither DV1 nor DV2 is selected on program.

- The Freeze button must be out. If it is not, after checking that DV1 and DV2 are unused on the Program bus, click on it to release it.
- The program source is either input 1, 2, 3 or 4. (BKG will also work.)
- On the Preview bus, select the input you wish to grab.
- On the Preview bus, click DV1 or DV2 to engage the framebuffers and activate the digital channel. You should have input 1, DV1, and DV2 all depressed on the Preview bus.

At this point, when you click the Freeze button, you'll grab an image into DV1 and DV2, one of which will depress on the Preview row to show you the grabbed image, *but you will not affect the Program bus*. The Program bus will remain on the selected source, passing video.

I refer to this as an offline grab because it doesn't interfere in any way with the Program bus and the Toaster's output. You may question its usefulness, since you can neither perform motion removal on the grab nor save the grabbed frame to disk without interrupting the Program bus after all. (These operations cause the Toaster's output to flash, similar to the Toaster's flashing during startup.) Well, I have found it useful, in two instances especially.

In the first place, in a live situation you can capture a stable image—one without motion—by grabbing a shot when nothing significant is in motion. This provides you with a stable freeze-frame image to cut to, dissolve to, or utilize as another source momentarily.

In the second place, a lot of Toaster owners use time base correctors. Many TBCs can grab a single

field or a video frame. You can use the TBC to grab a stable image, then offline grab it from the TBC to the Preview bus. The Toaster will cleanly grab the stable image coming from the TBC, which you can unfreeze and return to normal processing. This too provides you with a stable freeze frame image to cut to, dissolve to or use as another source momentarily. Using still images grabbed from a live shoot adds a nice touch.

Try these framegrabbing tricks and expand your arsenal of Toaster techniques.

Just for Fun

Here are some undocumented effects you can do with the framebuffers. You may find uses for them.

A couple of the Toaster's digital effects can be processed with motion removal while half-transitioned across the screen. The result is that the half-transitioned image is grabbed and processed into one of the buffers. Try this with the default System 2.0 project. Select effect D26 or D27. Use the mouse to engage the effect, but only bring it part way onto the screen. You'll see the framebuffers cycling through repeating video, with your source somewhere near center. While this jittery image sits in the buffers, press Alt-f on the keyboard. After a moment, you'll see a framegrabbed, motion-removed image of the cycling effect.

For further wackiness, you can change sources in the middle of these two effects when they are half-complete. After you drag the mouse halfway (or anywhere between the beginning and ending points for the effect), let go of the mouse button. The Switcher screen returns. Your source and the framebuffers will be depressed on the Program row. Pick another source on Program and the innermost image will switch to your selected source. Now press Alt-f to see

the results. You can also try to save a frame while the effect is showing. The result is much the same. As I said, these *are* special-use discoveries!

You may find a few other effects that can be used in this manner. I'm not sure how many may be affected in this way. (Ok, F24 works too.) Just make sure that *both* framebuffers are used by the effect in order to process it. Who knows what you may find?

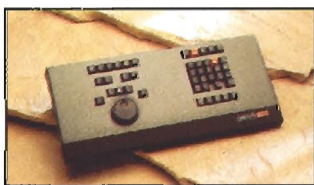
Another funky effect you may wish to use is the eight-field framegrab. This kind of grab employs *both* framebuffers in sequence, so that when you click Freeze, all eight fields are shown by the framebuffers (rather than the four fields shown by either buffer). You can force an eight-field grab by selecting effect F41, F42, F43 or F44, then clicking Freeze. The Toaster will grab and display all eight fields in sequence. The result is a two-second framegrab with a smooth sort of looping motion. If you desire, you can save all eight fields too. Whenever you save a frame while F41, F42, F43, or F44 is the selected effect, the contents of *both* framebuffers get saved as two successive Framestore images. They can be recalled as an eight-field image when these effects are selected as well.

Finally, here's an interesting thing I noticed. If the framebuffers are clear when you enter the ChromaFX slice, the Switcher framegrabs the current source into DV1 and DV2. If you have an image already in DV1, then the Switcher framegrabs the current source into DV2 only. I thought it fascinating that you could use this as a way to hold one image in a framebuffer, and grab one into the other without having to use both buffers. Make of it what you will.

VII

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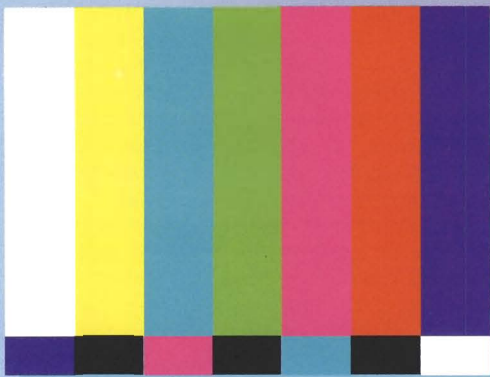


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Dr. VIDEO

W

elcome back to Dr. Video's Q and A session. Each month the doctor answers general questions on all topics related to general video production. Whether it's lighting, equipment, electronics or what-have-you, Dr. Video's

mission is to find solutions to any problems confounding you or mysteries befuddling you. Don't worry if your question seems too simple or too advanced—Dr. Video will take on all comers.

This month we begin with a prescription:

Rx=

A couple of issues ago, the Doctor mentioned a handy device for sharing one TBC by two VTRs, called an A/B switch. If there was enough reader response, I said I'd hunt up a blueprint so readers could build A/B switches of their own. While not exactly overwhelming (the Dr. got one letter), it is a rule of thumb that for every reader who writes in, a hundred more are also interested. Here is some more information about A/B switches for TBCs.

First, realize that several signals interconnect most TBCs and VCRs. There are timing references, signal lines and drop-out compensation signals. (These are defined more thoroughly below.) The general role of the A/B switch is to allow two or more decks to share these signals (see Figure 1).

Early A/B switches were designed using mechanical relays to switch the signals. These worked fairly well, but they tended to gum up a lot, resulting in intermittent switching. In these days of integrated circuits, it's more fashionable to use popular video and audio multiplexer chips for the same purpose.

Q:

There are strange wires coming out of my new TBC that I do not know how to use. One of them is labeled DOC. Does that mean you know what it's for? K.L., Phoenix, AZ.

Rx=

Thanks for the compliment, but that wire was already a fixture in TBCs while I was still a video intern.

Some of the signals coming out of TBCs have strange names, indeed. There is no substitute for

the instruction booklet. It should explain each signal's name and function, as well as alert you to DIP switch settings or jumpers that must be installed. Be aware that each manufacturer uses slightly different nomenclature.

Some of the terms that may be of interest include:

Video out, Program out: This is the processed video. Use this signal to feed into your Toaster.

Advanced sync, Advanced video: This is the reference video input for the tape machine *from the TBC*. If your VCR doesn't have a specially labeled input for this signal, connect it to the VCR's video input connector.

Video Reference, System Timing input: This is the reference signal to the TBC from the video system to which it is connected. Connect the same reference signal you feed to your cameras to this TBC input. (In some systems, it is conceivable that the TBC itself will be the timing reference for the rest of the system. In that case,

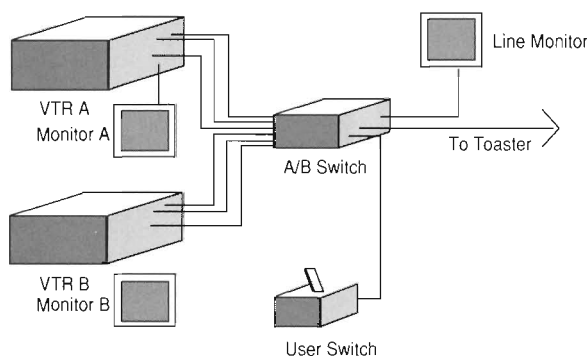


Figure 1: A typical video A/B switch configured to share a TBC between two VCRs

leave this input unconnected.)

Audio input/output: To simplify facility wiring (and generate extra sales), some VCR manufacturers connect the VCR to a matching TBC via a jumbo connector. Users can pick up and feed the deck's audio at this point. A less popular use is to add an audio TBC to the system. This delays the VTR's audio output to match the delay caused by the TBC.

Dropout compensator (DOC)/Tape RF sensor: This signal usually tells the TBC whether or not a signal is present at the video heads. If a tape dropout makes the signal go away for an instant, the TBC can often fake it by borrowing video from a previous line until the dropout clears. The DOC line is usually a TTL signal that changes state when a dropout occurs.

by Rick Lehtinen



...Continued on Page 28

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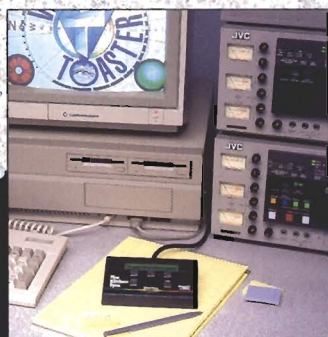
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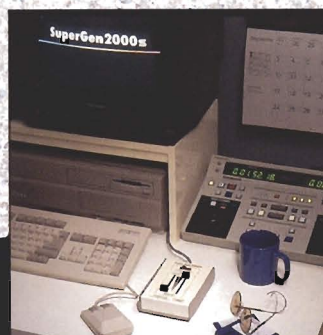


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DIGITAL

CREATIONS

Dithered subcarrier: Some TBCs have the ability to synthesize the color subcarrier required to play back a tape, and then to pre-distort, or *dither* it, so that by the time it gets into the VTR and comes back out the video output, the video signal will be more easily correctable by the rest of the TBC.

Composite: A way of describing normal NTSC (or PAL) video.

Y/C, Y/C 3.58, Y/C-688, Y/C-629: The extra numbers after the C describe the frequency of the color subcarrier. C-3.58 is normal Y/C. The color subcarrier is at 3.58MHz. C-688 (kHz) is the color subcarrier used in U-matic (3/4-inch). Y-629 is the color subcarrier frequency used in some industrial decks. These numbers are displayed to enable you to easily insert the TBC into your system. They are meaningless for most applications using the Video Toaster, which operates in composite only. They may be of interest if you have Y/C Plus on your Toaster. You will need to set the Y/C switches or jumpers just once, and then forget them.

Q: Where do I get the satellite equipment I need to hook up to a cable TV public access channel like *Wayne's World*? D.D., Southampton, NY.

Rx: If this is your intent, better check around first. Most transportable satellite uplinks cost about as much as a good-sized house. Even the microwave equipment that many TV and cable facilities use to beam signals from a remote pickup point to a studio can cost big bucks—more than a roomful of Toasters.

So how do you get your signals into the access chan-

nel? Typically, it is a job for videotape. You take your edited master down to the cable system, and they play it back at the appointed time.

This assumes, however, that they will appoint a time, and that they have an operator standing by to roll the tape. Most cable systems are small—25,000 to 30,000 homes or less. This doesn't allow a lavish operations budget. Check with your local cable company to make sure you can do *Wayne's World* in your neighborhood.

Q: When I shoot video inside the office where I work, the people seem to change color from shot to shot. I first noticed this when I tried to edit together footage of my supervisor giving a tour of the facility. What can I do? P.M., San Mateo, CA.

Rx: To cure this problem, you must look upward. The problem is one of enlightenment. Specifically, the fluorescent lighting that is used in many offices today. Whereas the yellow tinge of older incandescent lighting (light bulbs) tends to make people look warmer, the greenish fluorescent light makes flesh tones appear pale and harsh.

The problem is compounded if your facility has a warehouse or workshop area. These areas are often illuminated by mercury- or sodium-vapor lamps, each of which has different color characteristics. Sunlight itself has a unique color, as well.

To make your shoots look more alike, carry a known white object, such as a large piece of posterboard, from room to room with you. Before you start shooting in each location, hold up the posterboard in the position your subject will be standing, and touch the White Balance button on your camera. Now cap the camera,

and do a black balance if your camera has one. Now open up on the card again and do another white balance. Do this in each new location and chances are your colors will be greatly improved. [Editor's note: For more information on lighting, see "Lighting Tips for the Entry-level Professional" by George Avgerakis, in this issue.]

Q: My dealer says I need to buy monitors to look at the output of my VTRs. I say that two TVs will do just fine. I watch movies all the time, and I have never needed any expensive monitors. Who is right? J.D., Helper, SD.

Rx: Most likely your dealer is right, although you might have the last laugh. A TV will only work as a monitor if it is fed a modulated signal, such as the channel 3 or 4 signal that comes out of most VCRs and video games. Many editing decks do not have such modulators built in, because the process of modulation degrades the video quality. Without a modulated signal to drive it, the TV's tuner has nothing to decode. Hence, there is no picture.

Now, some TVs have video inputs. These bypass the set's tuner portion, and feed the video input signals straight to the video circuitry. These sets work just fine as monitors.

VTU

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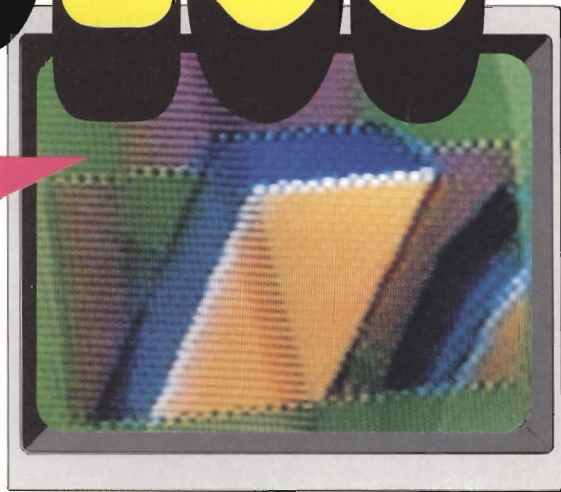
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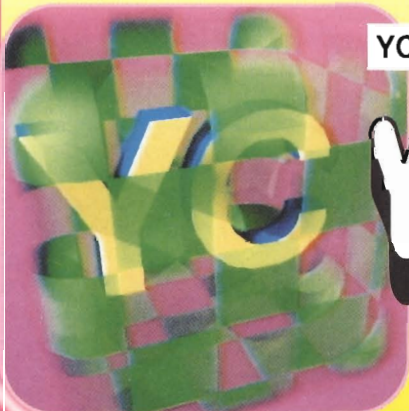
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SPECIAL F/X SECRETS

Welcome to Special F/X Secrets. My name is Robert E. McCarthy, special effects director, writer and inventor. I have several books on the market, including *Secrets of Hollywood Special Effects* and *The Special Effects Source Book*. I'll be writing this column for *Video Toaster User* magazine on a regular basis to show you ways to create special effects with various instructions, designs and drawings. Also, there will be some anecdotal stories of my days with *The Jackie Gleason Show*, *Saturday Night Live*, *Candid Camera*, and *Twin Peaks*; various films I have worked on, such as *The Fisher King*, *Ninja Kids* and *Return of the Living Dead*; and about rock groups I have worked with, such as Hammer, Bon Jovi, Kiss and Earth, Wind, and Fire; and many stories about my escapades with Walt Disney as lead special effects designer for Epcot Center. Hope you enjoy the articles. If there is any question you'd like answered about special effects, you can fax me at (818) 360-1462. I'll be glad to answer any questions you might have. Of course, when I answer your questions, naturally I'll reverse the charges to you. Now, on to the column.

The field of special effects (F/X), which can be financially, emotionally, and artistically rewarding, is also the most demanding and exhausting of all the artistic crafts in the entertainment industry. No other work requires such a thorough technical knowledge in so many areas. In most businesses, when you're a jack-of-all-trades, you're a master of none. But when it comes to special effects, being a jack-of-all-trades makes you a master of one: special effects.

To everyone except the F/X person, movies are make-believe. For only the F/X person is directly responsible for other people's lives. During the last 30 years, many professionals, myself included, have argued for the most stringent safety requirements. Gratifyingly, the codes are being upgraded constantly. With newer and improved chemicals, hardware, and techniques, F/X has become safer than ever.

There is and probably will always be, however, an element of danger in special effects. There are unavoidable accidents. Special effects require a higher standard of accountability to ensure that accidents are not the result of incompetence or inattention.

Someone once said, "Being tired is being in show business." I've been on productions for 50 or 60 straight hours, and eight hours later (after a snack

and shower) I was back on the set. I mention this for only one reason: When you're tired, you can make mistakes. Don't let exhaustion lead you into an avoidable error. Leave nothing to chance. Plan ahead. Don't give accidents an opportunity to occur. If you remember but a single word from this article, let that word be *safety*.

Enjoy and study the information contained in this column. Remember, however, that the special effects described here are of a professional caliber and should not be attempted by individuals unfamiliar with the materials, processes and safety techniques involved.

Mirror And Reflection Effects

During my career, I've probably heard one phrase a thousand times: "They must do it with mirrors." Well, that's not too far from the truth, because I've often used mirrors and reflecting devices when performing as a magician or doing special effects for television, motion pictures and at Disney's Epcot Center.

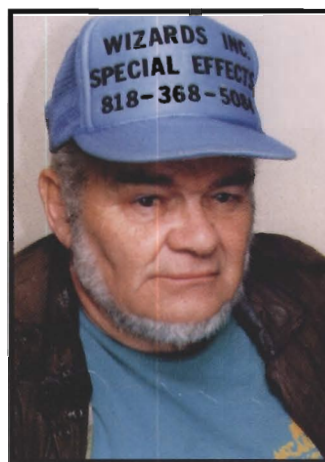
The oldest system is the image splitter (sometimes referred to as the Schuffton shot, after the inventor who popularized the process in the 1880s), which affords an effective method of creating composite shots. The image splitter is a four-cornered box, open on three sides. A 20% front-silvered mirror is mounted rigidly inside. The mirrored surface must be maintained at a perfectly plumb 90 degrees vertically; horizontally it is positioned on a 45-degree plane to the optical axis of the camera lens. This mirror is commonly referred to as a two-way mirror. It is semitransparent and serves to both transmit and reflect light.

Once these procedures have been followed, the camera is locked down and shoots through the mirror, photographing the actor positioned on its opposite side while simultaneously recording objects or activities positioned at a 90-degree angle to one side or the other of the camera and whose images are simultaneously overlaid in camera with maximum optical quality.

An example of this technique can be found in a scene requiring a person to be standing unprotected in a burning room. In actuality, he or she is placed in an empty room and the fire is some distance away at a 90-degree angle to the camera. These two separate images are combined in camera and give the appearance of being one (see Figure 1).

Clear glass (mounted and angled identically as the silvered mirror) is used to overlay or superimpose apparitions such as ghosts, floating heads and so on.

by Robert E. McCarthy



By increasing and decreasing light levels on the "spirit," these apparitions can be made to appear or disappear, slowly or quickly, as images are reflected off the mirror and into the lens.

There are two vital elements to be considered when using an image splitter. First, both the primary subject behind the mirror and the reflected secondary object must maintain the exact identical distance in relation to the focal plane of the camera. In other words, if the primary object is 15 feet from the focal plane, the secondary object must be, too. Neither subject nor object can deviate from the relationship of 90-degree angles from each other or the camera.

Secondly, a light loss occurs due to the 20% front-silvered mirror. The difference between the darker subject and brighter reflected object requires an exposure compensation of 3.5 to 4 stops. Make sure that the camera operator takes this into account.

Changing a Woman Into a Gorilla

For many years, magicians have used mirrors and

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- Watch snowflakes get blown around by simulated wind.
- Build a robot arm, pull on one finger and see how the whole arm will straighten.
- Create an animation of a pot of water gradually coming to a boil on a stove. Watch the bubbles develop at the bottom, grow as they rise to the top and disappear into the air. Watch as more and more bubbles form until the water appears to be truly boiling.
- See when a glass is dropped how it can automatically detect the floor and explode into pieces.



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REAL 3D V2

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Reggie the Weatherman, a.k.a. Jackie Gleason, forecasts sunny skies (left photo), when a hurricane-force wind attacks the TV studio (right photo), taking Gleason and the props offstage.

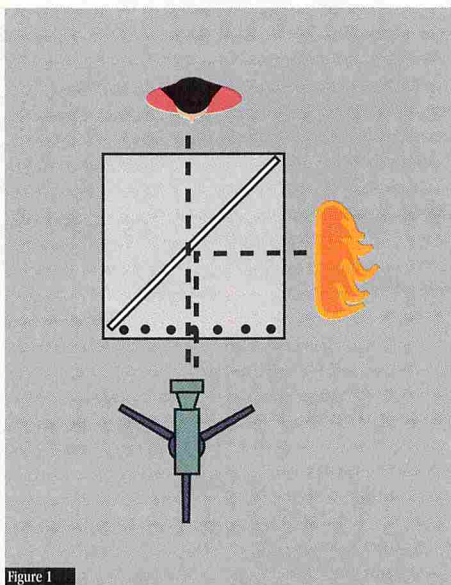


Figure 1

glass devices in their illusions. Among the most famous of these tricks is the transformation of a woman into a gorilla.

For this illusion, a magician chains a woman into a box. As the lights dim onstage, the woman begins to struggle frantically. Gradually, there is a faintly perceptible metamorphosis as she fights against her restraints. Hair begins to grow from her body, her face assumes the visage of an ape, arms elongate and legs stiffen and shrink until this beautiful woman has been transfigured into the daughter of Kong. When this illusion was first performed, audiences ran screaming from the theater, not realizing that what they had seen was the effective and imaginative use of an image splitter (see Figure 2).

Prompting And Image Splitters

Years ago, television employed cue cards. While they served their purpose, it was readily apparent to viewers that the performers' eyes were moving back and forth or that their heads tilted slightly in the direction of the cards held by the prompter.

Today, teleprompters are used. When they were first developed, they had to be placed above or below the camera lens in order to be useful, thus causing the eye line (i.e., eye contact or focus) to be broken from the lens. The problem was solved using an image splitter. Made from a simple piece of plate glass, it is angled to reflect the actor's or broadcaster's lines directly onto the lens. Because of the optics involved, the text is invisible to the lens and therefore not seen by the viewers.

On The Jackie Gleason Show, we often used the famous "Busby Berkeley overhead shot." The June Taylor Dancers executed formations while lying on the floor and created an endless variety of designs with their arms and legs. It appeared to the viewer that the camera was mounted in the flies (a storage space above the stage) shooting directly down on the performers, though it was not. In fact, the camera was attached to a pipe mounted on a platform with the lens shooting through a 100%

front-surfaced silvered mirror. This mirror was adjustable and could be angled to conform to the directed shot.

The Gleason Years

My 12 years of working with Jackie Gleason were probably some of the most rewarding and artistically liberating in my career. The hours were always outrageously long and the time to invent and perfect the effects ridiculously short, but the pure excitement of doing a one-hour live show every week with a great gentleman and talent has never been equaled.

One of my favorite Gleason characters was Reggie Van Gleason III, the outrageous playboy and imbibor who was always willing to take on any of life's challenges as long as it was preposterous. More often than not, these skits were blackouts, or one-joke skits, as opposed to fully-developed scenes, and so rarely required a great deal of development or integration into a main-show storyline. One that I particularly remember was The Weatherman.

Reggie the Weatherman

Reggie, as The Weatherman, appears onstage with map, pointer, globe and so on. During his report, he describes how beautiful the weather is and since it is Florida, it will continue to be so. Suddenly the wind starts to blow at hurricane force and everything, including Gleason, is blown off the stage (see photos).

For this effect, I had to construct a special machine consisting of a six-by-six-foot fan driven by a 40 hp motor. Until this time, I'd always somewhat cynically assumed that manufacturers tend to overrate their products. In this instance, I was proved wrong. The blower not only cleaned the stage of props and Gleason, but also raised the scenery a foot and a half off the floor with the updraft it created. Ironically, a real hurricane hit Miami less than 48 hours later, wreaking havoc throughout the city and forcing us to rent massive electrical generators in order to do the following week's show.

Do-It-Yourself Variety

While the previous F/X examples are of Hollywood quality and budget, you can look forward to future columns describing do-it-yourself special effects. I'll show you how to create big-time F/X at small-shop costs without sacrificing your reputation. Stay tuned.

VTU

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

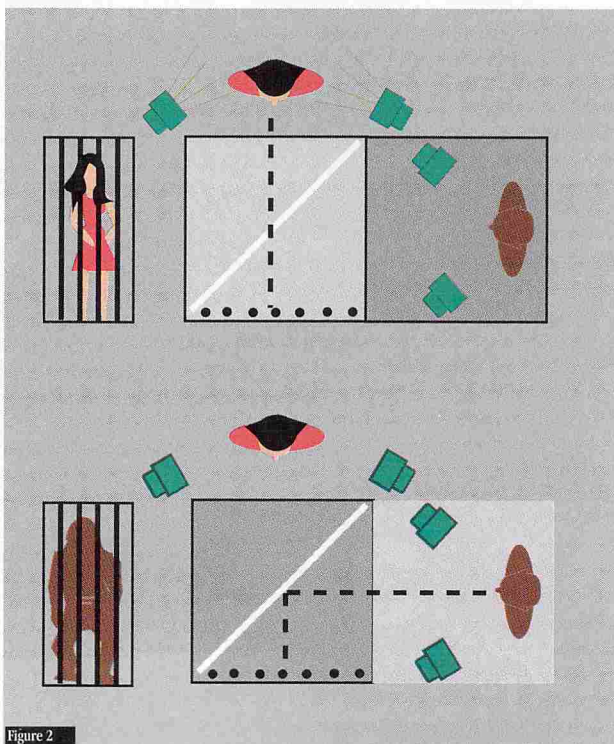


Figure 2

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abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
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EEEEIIII^ÎNO^ÓOO^ÔUU^ÙYY^ÿÆ0123456789...!?"'ES¥
abcdefghijklmnopqrstuvwxyzaa^àaa^áaa^âaa^ãaa^äaa^åæéëïíîñóôöøÿæœ

FOREIGN NEWS
ABCDEFGHIJKLMNOPQRSTUVWXYZAA^ÀAA^ÁAA^ÂAA^ÃAA^ÄAA^Å
EEEEIIII^ÎNO^ÓOO^ÔUU^ÙYY^ÿÆ0123456789...!?"'ES¥
abcdefghijklmnopqrstuvwxyzaa^àaa^áaa^âaa^ãaa^äaa^åæéëïíîñóôöøÿæœ

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Vietnamese

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AA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYAA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYDA^ÀEE^ÊOO^ÔUU^Ù
ABCDEF^{GHIJ}KLMNOPQRSTUVWXYZ
aa^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ù
aa^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùda^àee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ù
0123456789!#\$%&'()*+,-:;<=>?@,./

VIETNEWS
AA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYAA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYAA^ÀAA^ÁEE^ÊOO^ÔUU^ÙY
AA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYAA^ÀAA^ÁEE^ÊOO^ÔUU^ÙYDA^ÀEE^ÊOO^ÔUU^Ù
ABCDEF^{GHIJ}KLMNOPQRSTUVWXYZ
aa^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ù
aa^àaa^áee^êoo^ôuu^ùda^àee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ùya^àaa^áee^êoo^ôuu^ù
0123456789!#\$%&'()*+,-:;<=>?@,./

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abcdefghijklmnopqrstuvwxyzaa^àaa^áaa^âaa^ãaa^äaa^åæéëïíîñóôöøÿæœ

Foreign Bristle
ABCDEFGHIJKLMNOPQRSTUVWXYZAA^ÀAA^ÁAA^ÂAA^ÃAA^ÄAA^Å
EEEEIIII^ÎNO^ÓOO^ÔUU^ÙYY^ÿÆ0123456789...!?"'ES¥
abcdefghijklmnopqrstuvwxyzaa^àaa^áaa^âaa^ãaa^äaa^åæéëïíîñóôöøÿæœ

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...!?"'[]@#%&*()-/+<=>/

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abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

CREOPY
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

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...!?"'[]@#%&*()-/+<=>/

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

BENJI BOLD
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

QUADRA
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

QUADRA BOLD
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

ITALIAN
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

ITALIAN BOLD
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...!?"'[]@#%&*()-/+<=>/

AMERICA
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

AMERICA BOLD
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

BOOK
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789
...!?"'[]@#%&*()-/+<=>/

BOOK BOLD
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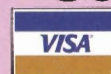
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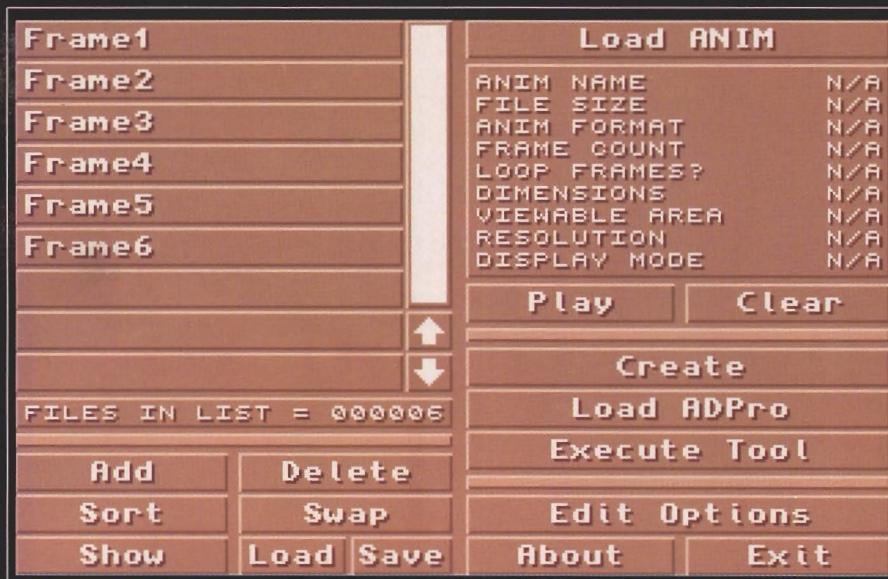
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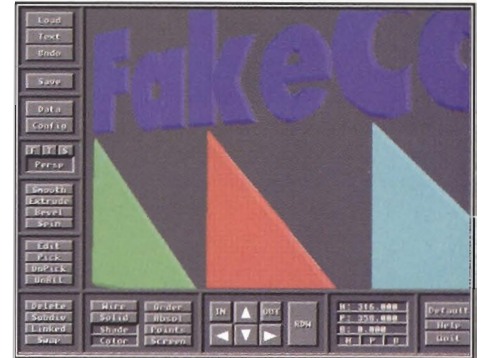
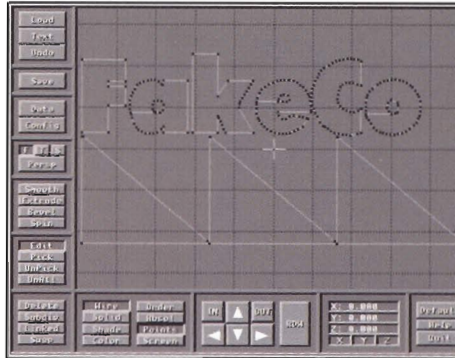
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TAMING THE WAVE

Welcome back to another installment of Taming The Wave, the column that dares to expose the tricks of the LightWave trade. As you may know, I've had a little contest boiling away here for a while. The challenge was to create a realistic waterfall using our favorite 3D system. At any rate, the deadline for entries was February 1st, (if you haven't entered yet, you missed out). I'd like to thank all of you who entered (a truly stunning number, I might add), and wish you all the best of luck. Due to deadline conflicts, the winner will be announced in the next issue of Video Toaster User.

So now that all of that excitement is out of the way, let's move into our exploration of LightWave. At a recent Toaster user group meeting, I displayed a project I had just finished that involved a lot of text. The vast majority of it was really just that—text—the likes of which any self-respecting character generator would be expected to supply. But this project was a little different because the text was expected to perform all sorts of little tricks as the video behind it progressed. One of the tricks I had to pull off was a line of text that would "wave" across the screen. You can see a similar sequence of frames in Figures 1, 2 and 3. After the meeting, I was surrounded by folks asking how I managed to make the text move like that. "Aha!" I said. "Sounds like the makings of a tutorial for Taming The Wave."

Getting Started

We'll begin by deciding what our text line should say. For the sake of brevity, let's use a word we can all relate to—LightWave. Make sure there is no data hanging out in LightWave so nothing unexpected occurs. Choose Clear Scene from LightWave's Scene menu to start fresh.

The key to this trick is building the text in LightWave rather than putting the letters together in Modeler. If you were to build text in Modeler, you would be unable to move each letter as a separate item. Follow along and you'll see what I mean.

From LightWave's Objects control panel, choose Load Object. In the root of your Objects directory should be a file called Null Object. This little guy, although highly useful, is probably one of the least appreciated tools in LightWave. Null Object is simply a point in space. Of course, LightWave doesn't go for the idea of lone points wandering around, so it is actually a one-point polygon. If, for some reason, you

don't have this object, here's how to make a new one:

How to Create a Null Object

Go into Modeler and click on Polygon at the top of the screen. Choose Point Select mode, then click the Points button within the Polygon options. Place the pointer at the dead center of any of the three views and make sure that the coordinates in the bottom left corner of the screen are 0 (you'll only see two). Click the right mouse button to create a point at the origin, the center of LightWave's world. Now, press the p key on your keyboard to make that single point (which is now selected since you just made it) into a polygon. Next, save the little guy as Null Object and load it into LightWave.

You may be asking yourself: "What do we need a null object for? I thought we were working with text!" Ah, but we are, grasshopper. Null Object will serve as the parent for our various letters so that, while each can move on its own accord, it can also move in concert with the others. Don't worry, you'll see in a moment.

Loading Letters

Get used to repetitive actions because you'll find yourself repeating them constantly (grin). Now load in all the letters needed to spell LightWave. But wait! Pay close attention because there's a cool little trick coming up. Click Load Object nine times. That's right, nine times, ignoring the fact that the requester has already appeared. You've just told LightWave that you want to load nine objects.

Point the requester to the Fonts drawer in your Objects directory. Enter the Common directory and you'll find all of the characters that make up LightWave's Common Font. Click on Common.Cap.L and then click OK. Poof! The requester is back! Now click on Common.Cap.I and click OK. Poof! Since we clicked the Load Object button nine times, the requester will appear a total of nine times. Pretty slick, eh?

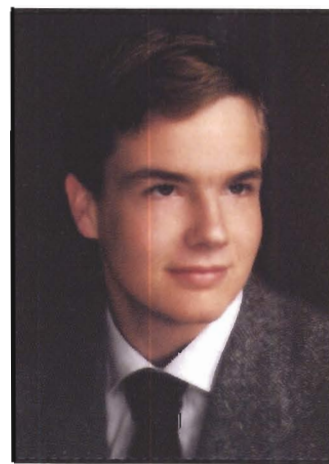
Continue loading each of the letters to spell LightWave, but make sure that you use all capital letters. This is just for purpose of matching this tutorial and not a rule, although bouncing upper and lower case letters looks odd to my eye.

Once all of the letters are loaded, go into LightWave's Layout area. Using Camera View mode, you should see all of the letters piled on top of one another. This is normal since each letter is actually designed at position X:0, Y:0, Z:0 (the origin).

Parenting Letters

First, let's attach all of these letters to the Null

By David Hopkins





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Object. Set the Edit Item to Object and, using the arrows to the right of the selected Item field beneath the 3D view, find the Common.Cap.L object. The object should appear as a white outline in the view. Click Set Parent (under the view again) and use the arrows to find Null Object, then click OK.

Set the Selected Item to Common.Cap.L and set its parent to Null Object. Do this for each of the letters, but make sure not to get so absorbed in the process that you accidentally parent the Null Object to itself—it can happen! When finished, we need to position the letters so that they are a word rather than a hopeless mass of polygons.

Text Layout

We want to have the word centered on the Null Object for this example, so we need to figure out which letter should be the true center of the word. This would be the letter T. All of the positioning

entire word in the camera view. Let's fix that now. Change the Edit Item to Camera, and make sure Mouse Function is set to Move. Below the Mouse Function options on the left side of the screen are three buttons labeled X, Y and Z. These are your axes of movement. When one of these buttons is pushed in, you can move the selected item along the indicated axis. Push in the Z button and pop out X and Y. We don't want to move the camera on either of those axes, only pull it back to see the whole word, so we'll only move on the Z axis.

Place your pointer in the 3D view, press and hold the left mouse button and drag the mouse toward you. You should see more and more of the word as the camera moves back along the Z axis to match your movement. Take the Camera back to a Z position of -10. You could do this as you are now, by dragging the mouse, or click Numeric Input and simply enter

to remember not to adjust the T's position since it is our official center.

If you'd rather not try to position them manually, just use the following settings:

Common.Cap.L	X: -3.14
Common.Cap.I	X: -2.52
Common.Cap.G	X: -1.84
Common.Cap.H	X: -0.905
Common.Cap.T	X: 0
Common.Cap.W	X: 1.130
Common.Cap.A	X: 2.240
Common.Cap.V	X: 3.170
Common.Cap.E	X: 4.090

These values are based on my own repositioning. You'll notice that the letters W, A, and V have a little more space between them than the others. You'll see why in a moment.

Set your Selected Item to Null Object. Make sure



Figure 1

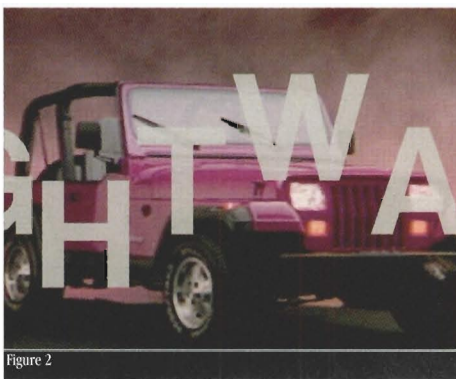


Figure 2

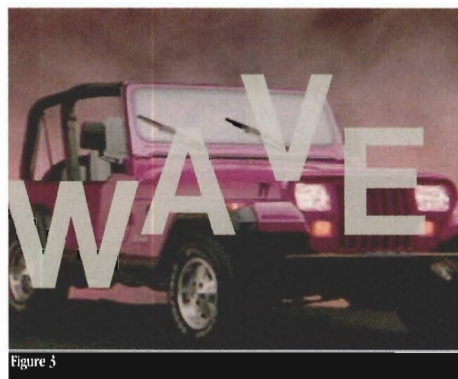


Figure 3

work we do to the rest of the letters should be in relation to that T. Advance the Selected Item to Common.Cap.H. Since this is the letter immediately before the T, whose position doesn't change, we'll start here. To simplify the process, we'll place each letter one meter from the next. This distance may seem large, but the Common font is designed to that scale. When you try this technique with your own letters, you'll probably want to adjust their distance more carefully.

Click on Numeric Input and set the H's X position to -1. This means that the object is stationed one meter to the left of the origin of its parent (the Null Object). Leave the Y and Z settings at 0 and click OK. Next, create a key for the H in frame 0 by clicking Create Key and pressing the Return key.

Step the Selected Item back to Common.Cap.G. Using Numeric Input, set its X position to -2. Create a key. Step to Common.Cap.I, place it at X: -3 and create a key. Common.Cap.L should be at -4. See how this works? As we worked back through the word, we moved each letter one meter farther to the left. Now we need to do the other half.

Step to Common.Cap.W. This, of course, is the first letter to the right of our stationary T. Set its position to X: 1. You should know by now to create the key after each move, so I won't repeat it. Move the A to X: 2, the V to X: 3, and the E to X: 4. There, that wasn't so difficult, was it? Now we've got a complete word with moveable letters. Let's make them do something.

Moving Letters

The first problem we encounter is we can't see the

-10 into the Z field. Now all of the text is visible.

Unfortunately, the spacing between letters is uneven. This is because some letters, such as the W,

Table 1

Object	Frame 0	5	10	15	20	End
L	.5	0	-.5	0	.5	Repeat
I	0	.5	0	-.5	0	Repeat
G	-.5	0	.5	0	-.5	Repeat
H	0	-.5	0	.5	0	Repeat
T	.5	0	-.5	0	.5	Repeat
W	0	.5	0	-.5	0	Repeat
A	-.5	0	.5	0	-.5	Repeat
V	0	-.5	0	.5	0	Repeat
E	.5	0	-.5	0	.5	Repeat

are wider than others, such as the I. You could adjust each of these letters manually by changing the Edit Item back to Object, setting the axis controls so that only X is selected, then moving them left or right. Try

that only the X axis button is pushed in, and use the left mouse button to drag the Null Object left and right. Notice that all of the letters move right along with it. Now we want to give the letters some motion of their own.

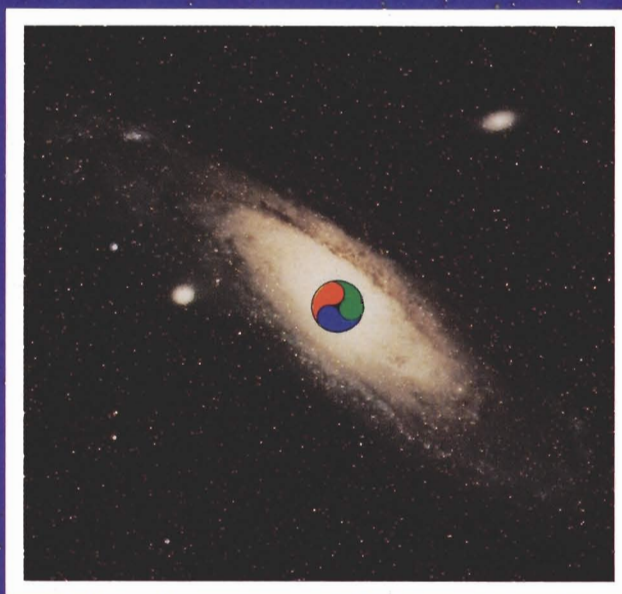
Make Common.Cap.L your Selected Item. This time, pop out the X axis button and push in the Y only. This limits your movements to up and down.

Move the L up until the coordinate readout shows Y: .5. (You could use Numeric Entry to type this in, of course.) Create a key at frame 0. Now, move the L back down to Y: 0. Click on Create Key, but don't do anything else! Change the "0" in the field to "5" and then hit return. Move the L down to Y: -.5 and create a key at frame 10 in the same way. Move the L back up to Y: 0 and create a key at 15, then move it back up to .5 and create a key at 20. Finally, exit Layout and go to the Objects panel. Set Current Object to common.Cap.L, then click on Object Motion. Set the End Behavior to Repeat, and you're finished.

Well, almost. You've just told LightWave that the letter L is going to move from above the rest of the letters to below them, and then back above them in the span of 20 frames. By setting the End Behavior to repeat, you cause the object to start its path all over again upon reaching its final key frame. Set the Last Frame to 60 in the Scene panel, go back into Layout and make a preview (bounding box or wireframe, it doesn't matter) When you play the preview, notice that the L keeps bouncing up and down throughout the entire animation. This is the result we want.

Guess what—it's time for more repetition. You need to create keys for each of the letters at the same

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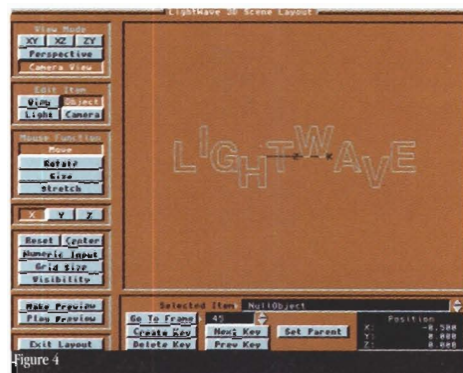


TM's Commodore Business Machines, NewTek, Inc., PreVue Technologies

Taming Continued from Page 38

frames that we used for the L. Table 1 should make life easier. All of the values are for the Y axis of the appropriate object. To save some repetition, set all the End Behaviors after setting all the key frames, remembering to change Current Object in the Objects panel each time.

All this may seem complicated, but it's really not. All we're doing is defining a staggered path for the letters. They each move the same distance in the same amount of time, but each is one keyframe behind the previous one. Make a pre-



view again and you'll see that the bouncing motion works. Granted, it's a little fast, but you can control that by spacing the keyframes farther apart. The only hard and fast rules to remember here are that each of the letters must have the same number of total frames, the first and last frames must be the same, and the End Behavior should be set to Repeat. At this point, your Layout should look more or less like Figure 4.

Now that we have bouncing letters, let's put the finishing touch on our advanced CG project. Set the Selected Item to Null Object. With only the X axis selected, move the Null Object to the right until the L is just off the side of the screen (a setting of X: 9.5 works here). Create a key at frame 0 for the Null Object. Now, move the Null Object to the left until the E is off the screen (X: -10.5). Create a key at frame 90.

Exit Layout and set the Last Frame to 90 in the Scene Panel. Return to Layout and make a preview. When you play the preview you'll see the word LightWave go bouncing across the screen from right to left. To answer the question of the extra spacing between the W, A and V, if they were any closer together they would run into each other as they bounce. Keep an eye out for problems of this sort, because they can ruin the entire effect.

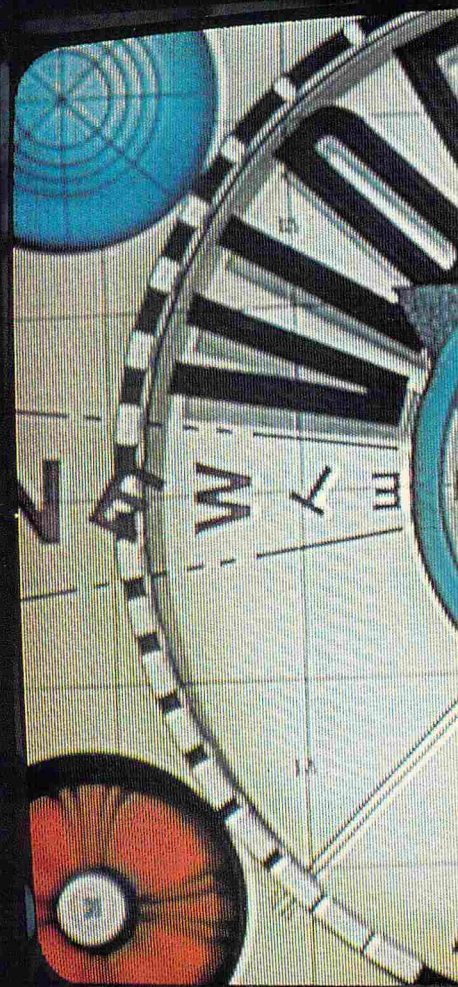
So, there you have it—a really slick text effect without using the Toaster's CG. The possibilities with this technique are endless. Imagine the letters moving into and out of the distance instead of just up and down. Maybe the letters spin or tumble. You've learned enough in this column to keep you busy for a long time, so I will take the opportunity to exit stage left.

If you have comments, questions, suggestions, tips or products you'd like me to take a look at, send them to:

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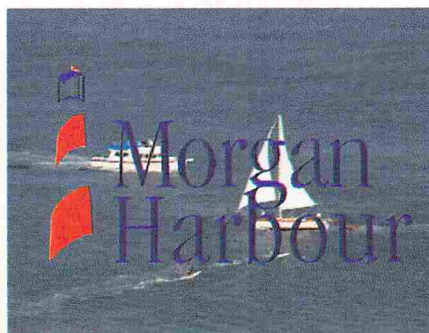
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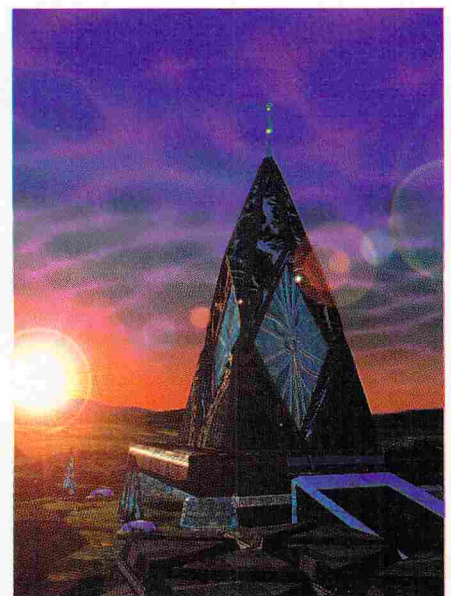


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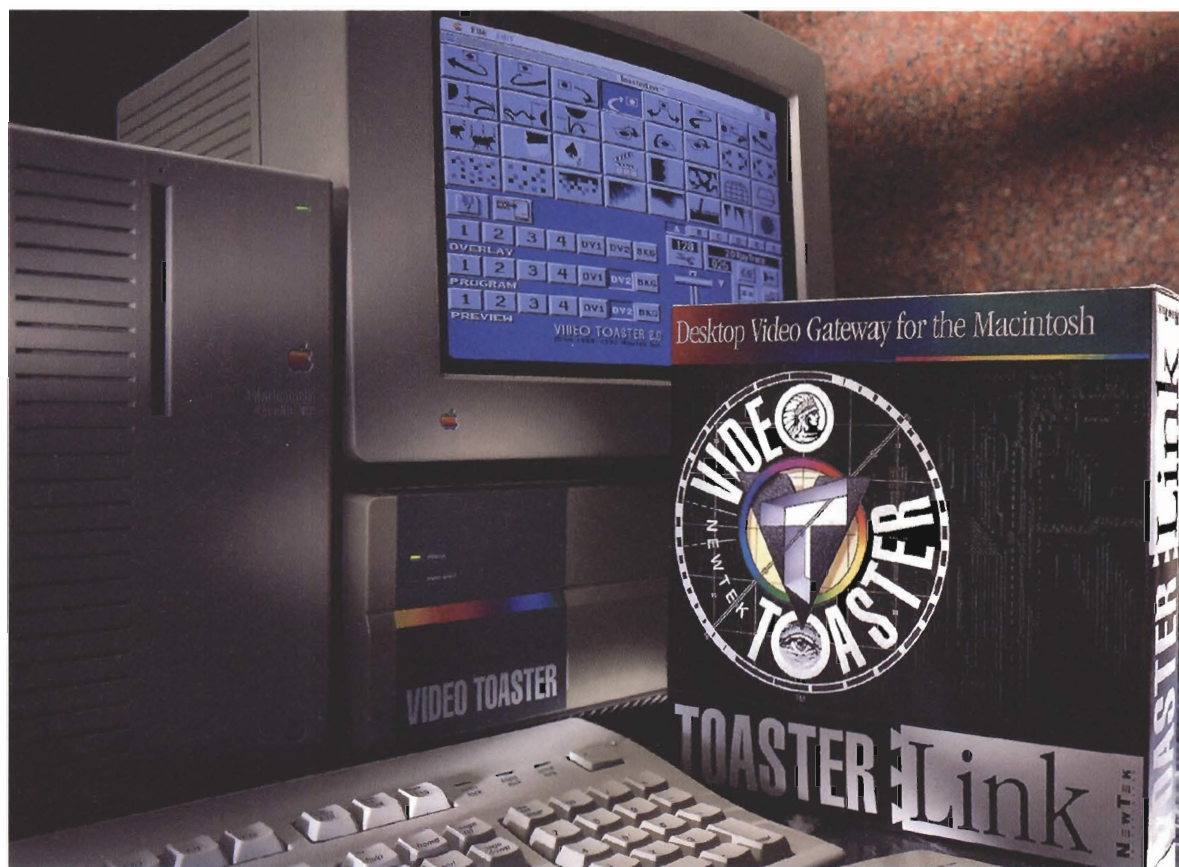
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Making Money with Video

Toast the Competition

by Ann Moore



Toaster-created logo from actual license plate.



Shooting a McDonald's commercial for local appeal.



Logo created from stationery with Toaster.

The 1980s and early '90s saw a breakthrough in video technology which for the first time took video out of the exclusive hands of the big networks and Hollywood producers and made it something that could be reached by millions of people. For those of us who have taken the plunge and have joined the wave of video entrepreneurs, or are considering doing so, these are exciting times indeed.

Where's the Business?

Every once in a while new technology comes along opening up new doors for independent businesses that can be started with minimum capital investment, and that opportunity is here with video. The key is to find a niche, find a need and fill it. It could be you! Don't be afraid.

The amazing thing is that every day, new ways to use video emerge, limited only by imagination and the peo-

ple willing to pay for it. There are how-to-videos, safety videos, cooking videos, exercise videos, and on and on. Pretty much anything in print can have a video counterpart.

Special Events

Wedding videography is the backbone of the event video industry and the life support for many new entrepreneurs. Every day thousands of couples tie the knot. And with the divorce rate what it is, one or both of the participants may even be on their second time around, so you may get more than one job opportunity! Videotaping weddings alone has the potential to be a multi-million-dollar-a-year industry.

Once you decide to get into video, look around town for possible clients. You'll find that there is a wide range of community events that come under the heading of potential business—dance recitals, sporting events, plays, award ceremonies, etc. My company was recently

hired to videotape a funeral! It was actually quite a production, with several singing soloists, a choir and a procession of 50 people on horseback.

Many entrepreneurs find a niche creating family histories. Start out with photographs from the family album, narrated with stories and amusing anecdotes. Profile a specific family member or go for the whole genealogy. These tapes can make great Christmas gifts or a unique present for a couple's 50th wedding anniversary.

Commercials

Industry growth is evident in other areas as well. Most of us grew up with three competing television networks; now, with cable TV, there are dozens—many of which are advertiser supported. There's hardly a small town that doesn't have a cable system, which presents another unique opportunity for video entrepreneurs.

Local cable companies increase their potential income by selling commercial time to merchants, restaur-

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rants, car dealers and other businesses in the area. You see, almost all cable channels are beamed down from satellites to receiving dishes at the cable company. They select which channels to sell in their community, putting them all together into a sales package. The satellite channels have specific time slots (usually at the top of the hour and at the half-hour) when the cable company is allowed to insert local commercials to generate additional revenue. They do this with a VTR that is part computer. Cue tones embedded in a channel's satellite signal start the VTR and play a tape for 30 or 60 seconds, enough time for two or more commercials. The system's computer component recognizes the cue tones, and can also be programmed to play certain commercials in specific time slots.

This all points to one fact: Cable advertising customers need video production. Some cable companies have production facilities, but most prefer to receive commercials ready to air, so they can concentrate on selling. This is where your company comes in.

Cable companies promote video production services as part of their advertising package to customers; however, what the customers don't know is that cable companies subcontract work to local videographers. In essence, cable companies are out there actively selling video production services and you don't have to pay them a dime—they pay you. It's a dream come true!

Another positive aspect is that this is steady work. The cable people are always looking for new clients, or selling new spots based on holidays or the change in seasons. Every business needs regular income, and subcontracting can form a base to build from.

Producing commercials for your local cable company can also open many doors. People everywhere can see your work at home, on their TV. Suddenly you're meeting with business honchos all over town, getting the word out about your company. Your efforts could lead to producing sales and marketing tapes or training and educational programs. They'll have sons and daughters getting married. It all comes back around. The best way to market your services is to be visible in the community until your company becomes synonymous with video production for your area. *[Editor's note: For more information about business start-up, see "A Complete Business Tutorial for Freelance Videographers" by Thomas Dawson, on page 48]*

The Competitive Edge

No competition? You might be the first in your town to produce affordable custom videos, but don't count on it. The reality is that low-cost video production has been going on for a few years now. Depending on your city's population, it's likely there are established wedding and community-service video companies. The key is to have an edge—a way to differentiate yourself from the competition—and this is where the Toaster comes in.

Toaster to the Rescue!

The Toaster can be a fast ticket to quality video productions that cause people to sit up and take notice. In this business, your work is always compared to the type of video most people are familiar with—broadcast TV. With the Toaster, you can produce the type of high-quality digital special effects, titles and graphics that will not only keep your customers happy, but very impressed.

The Toaster's success is due to the fact that it satisfies so many needs of the video producer. It makes titles quickly and easily. It does fades and dissolves at the push of a button. But what gets your attention when you fire up a Toaster is the six pages of preprogrammed digital effects. Suddenly you are in the same league as the big boys at a fraction of the cost. Your screens can zip, flip

and spin with the best of them, and you don't need a degree in computer graphics to do it. All you do is select the desired transition, time it with your edit and you will have video that is in one measure impressive and professional. I've seen it work over and over again.

The Toaster allows you to take video from two to four separate sources—either two VCRs, cameras, laser disc players or any combination—and edit them together onto a master tape. This ability to do A/B rolls, either as simple dissolves or with the more fancy digital transitions, is a major step up the video production ladder and a way to differentiate your company from the competition.

Toaster Titling

Every video production needs titles—from opening and closing credits to the name and phone number of the client's business. It might be the bride and groom's names and the date of their wedding. No matter what your video specialty, titles are a must.

Typically, onscreen letters are used in a variety of shapes, sizes and colors. They might be on a single-color background, but in many cases the letters are superim-

**"...the Toaster
is making
money for me,
and it can do
the same for
you."**

posed (overlaid on some other video). The Toaster does it all, and with luminance keying, you can tumble titles over video with one of the digital transition effects, adding extra punch to the finished product.

The Toaster comes with a wide selection of high-resolution character styles or fonts, plus a variety of symbols, such as credit cards and arrows. However, you can never have too many different fonts to choose from. Many software companies have produced additional collections of fonts which can be purchased separately and added to your Toaster. There's something for everyone. *[Editor's note: See "Toasted Fonts" by Scott Gillies, on page 80.]*

Still More!

Of course there's more to the Toaster than character generation and transitions—there's LightWave, ChromaFX and even third-party software like Art Department. But the plain fact is, even if you never use the Toaster for anything but titles and effects, you will come out ahead. In video, time is money—you need to do things quickly and easily to make a profit. The Toaster's all-in-one configuration makes good sense both in terms of saving time and getting the most for your video-equipment dollar.

You'll discover that other Toaster features will find their way into your work as you become more familiar with its use. For example, with the Framegrabber, which lets you capture single frames of video, the Toaster becomes a video still camera, giving you stationary images to work with. ToasterPaint becomes a tool for adding corporate logos, colorful backgrounds and doing

touch-up work on your stills. Place your logo on a black or white background, and you're ready to use the luminance keyer. This lets you do cut-out overlays, where the white or black areas are replaced by live video from a second source.

The Basic Tool Kit

The important thing to remember is that clients are out there. You can get business, but you need tools to work with. During the cash-intensive start-up phase, as you assemble the pieces of your production kit, every dollar must count (whether it comes directly out of your pocket, or the bank's). Not so long ago, to play the professional video game you had to invest hundreds of thousands of dollars. Today, you can put together a working system to get you started in video production for well under \$10,000, possibly even less than \$5,000!

The kit consists of a camera or camcorder, one or two source decks, and a record or edit deck. Probably the most common format in use today by independent video entrepreneurs is S-VHS. The other direction to go on a budget is Hi-8. There are different levels of equipment, depending on how deep your pockets go, or the level of video quality you (or your market) will tolerate. You'll find there is a difference between equipment that costs between \$1,000 and \$2,000 and systems in the \$4,000-\$6,000 range. On the camera side, to go top-of-the-line, you'd choose something with three CCDs for superior image and color quality. *[Editor's note: See "Sony's CCD-VX3" by Frank Kelly, on page 72.]* Higher-priced edit decks deliver more stable video with cleaner color and extras like time code or built-in time base correctors.

Which is not to say this is all you'll need. There is an endless list of accessories, from tripods and lights to microphones and edit controllers. The main point is to start with the basics, create a cash flow and move on from there.

If you are seriously considering taking the plunge and making video your career, I suggest you start with some research. Get out your phone book and look for your competition. See what services they provide and how you can offer something different. If you're in a big enough city, you might even visit a few. You'll generally find video people friendly and easy to talk to. You'll get a lot of good free advice and perhaps a better idea of what type of work is going on in your neck of the woods.

Also, there are countless videotapes available from other entrepreneurs that spell out details on equipment selection, marketing strategies and production techniques. Many deal specifically with the Toaster, offering a guided tour through its use and many features. These can be quite helpful for the computer novice or the person simply seeking shortcuts to Toaster literacy.

Don't feel like you have to do everything at once. Many people keep their day jobs, starting their video business part-time. Fortunately, weddings and many other community events happen on weekends and at night, allowing you to get your feet wet and build up some experience before you go full-time.

The Toaster has been an integral part of my transformation from video dreamer to working professional. It has opened up doors to projects that I would never have had a shot at otherwise. I will admit that I sometimes get so busy that I tend to rely on its basic abilities, and have barely explored some of the more dynamic features such as 3D animation. But that's OK. There's room to grow, new things to learn. The important thing is the Toaster is making money for me, and it can do the same for you. If you're ready for a challenge that taps your creative energies and unlimited earning potential, this is the time.



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A Complete Business Tutorial For Freelance Videographers

By Thomas Dawson

Thinking about freelance videography? The best way to get started is to understand what it takes to be successful. A successful freelance videographer provides professional quality services to paying clients.

What kind of services? How about corporate videos, music videos, instructional videos, or animation, editing, lighting, special effects, or advertising, news, sports and weather? None of these sound intriguing? Not to worry; name your interest and you're sure to find a marketable niche within the video industry.

Desktop video is doing for the video production industry what desktop pub-

lishing has done for the publishing industry—a commercial revolution! As technology advances and equipment costs come down, the business opportunities for aspiring entrepreneurs increase. For example, 15 years ago, who would have thought you could produce an entire book or magazine on a computer tucked in the corner of your bedroom? Today, there are thousands, if not millions, of people running their own small businesses from the spare bedroom. With the introduction of low-cost production systems like the Video Toaster, desktop video is poised for the same commercial explosion.

How do you get in on a ground-floor opportunity? Take your skill, imagination and whatever talent you have and start planning your business today.

Competing on a Professional Level

Compare your work with what other video professionals are doing. This reality check makes sure your pride doesn't blind you to the actual quality of your work. Your product competes against other videographers in production and information quality. If your video doesn't contain high-class production techniques, provide valuable information—this alone can make it a bestseller.

Know your competition. What video services do they offer? What equipment is used? Is their overhead higher than yours?

Of course, none of this matters to the customers. They want one thing: a high-quality affordable video. The tools used to produce that product are irrelevant to clients as long as they get what

they want. But these factors matter to your videography business. In many cases you have to compete for clients based on quality and price.

Remember that your fees must exceed your expenses (equipment, labor and overhead costs) in order to realize a profit. If your competition has paid outrageous prices for their software or equipment, then they have to charge higher fees to cover those costs. If you use the Video Toaster, you have a tool which meets, and usually beats, the quality of anything else out there. Plus, this may also give you a price advantage over the competition.

In order to justify their higher prices, the competition will try to show that they have a better product. This is where your quality and innovation really pay off. If your prices are

...Continued on Page 50

competitive with the competition, then the caliber of your work will most often be the determining hiring factor for the customer. As the new kid on the block, keep your overhead, equipment and labor costs lower than the competition to help give your work a fighting chance.

To research the competition, study the industry trade journals and look into related business associations. In addition to *Video Toaster User*, I recommend reading all the major trade publications to get an overview of the entire video industry across all platforms and to understand the current state of the video industry. I have provided a reference list of trade journals and industry associations at the end of this article.

Getting Down to Business

Once you've established that you have the ability to compete, how do you start your business? A simple formula works like this: Use your imagination to come up with great ideas; use your knowledge and skill to make this idea into a video; and then make this process work in an efficient, profitable manner. For your business to be successful, all these elements must work together toward a common goal—business survival and profitability. How you plan to achieve your goal is the basis of forming a business plan.

Just like building a house, building a business begins with a set of plans. You need a good blueprint and the determination to follow it. There are numerous books detailing the step-by-step process of a business plan (look in the business section of your local bookstore or library). Using one is good idea; but beware, some books are oriented toward starting large corporations or wholesale-retail outfits. Also look for a book on the video production process. These two books should give you a solid footing, but to familiarize you with the business plan, I'll present the basics here.

Your business plan should contain three things: a statement of your company's business (ABC Video is a commercial video production company); your goals for where you want the company to be in one, two, five and 10 years; and lastly, how you intend to meet those goals. You don't have to make a large formal document, but at least get it down in writing, even if it only fills a page or two.

Think of your business plan as your battle plan for taking on the world of video production. The writing process itself will bring into focus what you're going to do and how you're going to do it. Refer to your business plan as time goes on and follow what you've written (the best way to make a delicious meal is to follow the recipe). A written business plan separates professional freelance videographers from amateurs.

Start-up

Starting your freelance videography business means going through the same necessary steps to start any business. I recommend finding one or two start-up guides (also in your bookstore's business section). These books generally provide solid information about licenses, government regulations, taxes, legal requirements, accounting and advertising basics.

In addition, the Small Business Administration (SBA) provides free information pamphlets on starting and running a small business. They're available by calling 1-800-U-ASK-SBA.

Another important resource for start-up help is the Service Corps Of Retired Executives (SCORE). These are volunteers who have a lifetime of business experience and are willing and available to help you succeed. Pamphlets for SCORE are normally available

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what desktop
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industry—a
commercial revolution.”**

where you apply for your business license, or contact your local SBA office. Try to find a SCORE partner familiar with service-oriented industries and a start-up enterprise. Volunteers can also assist with fine-tuning your company business plan.

The Professional Look

Freelance videographers don't normally own or lease entire office buildings, so you have to express your company's solidity and professionalism in other ways. The first step is to have professional business cards and stationery. I started by creating a consistent style for my company letterheads, price lists and other promotional materials. The trick is to go beyond just the appearance of your logo. Coordinate everything—even the paper these materials are printed on. Don't print price lists or brochures on plain copier paper; you'll look like a backyard operation. Make a professional first impression on your customers.

For a high-tech look that coordinates official business letters with brochures and price lists, I contacted a company called Paper Direct. Their products are professionally coordinated right down to the envelopes.

Next, you'll need a company brochure and price

list. Print these items separately so the price list can be updated without having to reprint the brochure. The brochure acts as both a resume and an advertisement for your services. Most customers also want to see samples of your work. A “demo reel”—a video portfolio—is a collection of your best work. The competition for clients is usually won by the videographer with the most professional demo reel. Again, remember to coordinate your brochure, price list, and demo reel designs with your letterhead. [Editor's note: Because the demo reel and brochure are vitally important to a company's success, *Video Toaster User* magazine will publish Thomas Dawson's related tutorials “How to Create a Company Brochure” and “How to Make an Impressive Demo Reel” in future issues.]

Making a Price List

The price list details each service and its respective price. I'll outline the basic video production steps here and relate their cost to the price list. For a general idea of what to charge for each production step, get price lists from other video companies and see what services they offer.

After conception, the first step in video production is to sketch out what the final product is supposed to look like—in essence, a visual rough draft. This diagram, called a storyboard, can be created either on paper or with a computer.

If working on paper, think of what the comic book version of your video would look like and draw that. If working on the computer, you might produce anything from a series of stills, which detail the key sequences, to a low-resolution mini-movie (depending on how much is computer-rendered and how much is actual video footage). Basically, you're asking the client to agree to and authorize what the final product will look like. I prefer using paper storyboards, because I can have the client initial each page as an agreement to what is being produced. It is critical that both you and the client have a common vision of what the client is paying for. The storyboard fees are the first item on your price list.

The next step is to create a production schedule to determine how much work is involved in creating the final product. Once you have a schedule, you can give your client a price quote and a time estimate. Storyboards and production scheduling are classified under “pre-production fees” and are priced at an hourly rate. “Production fees” are covered under the producer/client contract. Here you charge for shooting video and all other aspects of production, including materials. Production materials are any expendable item or service which must be rented or purchased in order to produce the video, including the tape(s) the video is delivered on. Once we have the raw video footage on tape, it has to be edited into the final product.

At this point, the contract ends and I switch back to hourly fees. Since editing bays are rented by the hour, it's best to charge for your time in the same way. Hourly editing rates are classified under “post-production fees.” If you don't know how to run an editing bay, then your rates should include the cost of someone who does.

Breaking up the price list into pre-production, production and post-production does two things. First, it assures the customer only pays for what is delivered. Second, the stepwise development makes sure both the videographer and the client have a common vision of what is being produced.

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Finding Clients

Once your business is set up, you need to find some paying clients. There are two avenues available to do this: personal business contacts and advertising. Use both approaches and be very thorough.

To be efficient, you need a plan. Just like having a written business plan, a written marketing plan means you're serious about success. Your marketing plan is your playbook for how you intend to garner clients. Again, I don't suggest you make some giant document, but rather build a checklist of what you need to do and when you're going to do it. I'll give you a good starting plan; when and in what order you do these things is really up to you.

Your appearance is the last item needed to com-

plete your company image. As a serious freelance videographer, you need to look professional. I realize that some artists have eccentric personalities, which is often reflected in our clothing, but try not appear offensive. A unique personal style can help or hinder you; but either way it influences the client. I personally dress like a bank manager—like someone the client is accustomed to giving money to. How you dress is up to you. What you don't want to do is dress in a manner that causes distrust. Look at the situation from the client's perspective and dress appropriately.

Building Business Contacts

The next stop in our marketing adventure is networking. Start by finding local user groups, especially if you have a Video Toaster user group in your area.

These can be good information sources about the local video market, as well as promotional tools for your company.

A great way to kick things off is to show your demo reel at a user group meeting. Sometimes a job comes along that is so big, it takes several videographers working together to get it completed on time. Making other freelancers aware of your talents gives you a chance at getting a piece of a larger job.

Also consider joining professional associations. These are networking groups where service providers and service customers meet and form business contacts. Professional associations are comprised of business people—dress as you would for any business meeting. When you show up, it's smart to look like you're ready to do business.

Remember to take plenty of brochures, price lists and business cards, but don't try to force them on people. Put small stacks of your brochures and business cards on a table near the door. If someone is interested in your work they'll take one. Don't set out copies of your price list—wait until someone asks for it. This way you can separate the merely curious from those who might want to give you work.

This does not mean you should blatantly ignore someone you don't perceive as an immediate job prospect. Making contacts with the people at these meetings builds the kinds of business relationships which can result in future paying jobs. Attend regularly and be professional, courteous and confident. Leave the impression that your professional, fast and friendly video service is needed.

Important organizations to join are the International Television Association (ITVA), your local Videographers Association and the Chamber of Commerce. The ITVA and the Videographers Association are networking groups for people who work in the television industry. The Chamber of Commerce is a local association of business leaders active in promoting the community and its industries. Chamber of Commerce members enthusiastically support each other with business referrals and job orders. Again, try to get your demo reel shown as part of a meeting. The best way to present yourself when first attending these meetings is to be seen as a believer in quality and service. A calm attitude coupled with a habit of listening more than talking makes the best impression.

And be active! If an association does not exist in your area, then you might start one up. Being the president of a Videography Association identifies you as a leader in the local video community and is definitely worth mentioning in your brochure.

Advertising Your Services

Every business needs some form of advertising—whether it's an ad in the Yellow Pages, a neon sign or just good word-of-mouth—to promote its product or service. There are two basic kinds of advertising: passive and active. Passive advertising is placing ads where you think potential clients would look for services like yours. Active advertising means getting on the phone and contacting companies who might have use for your services.

This is where your marketing plan really comes into play. To succeed, you need a strategy to connect your company with clients who are currently seeking video production services. Find out where customers seek these services and place an ad for your company there. An easy way to do this is to contact local advertising agencies and ask where they find video produc-

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tion services. To make this an active advertising call, thank them for the information, let them know your company exists and ask them to look for your ad the next time they need video services.

Contact any other companies you feel may be potential customers and ask them as well. This gives you valuable information and lets them know about your services in a non-threatening manner. I use this term because calling up a stranger and trying to sell your services right then and there usually puts them on the defensive. This practice is named "cold calling." I recommend against it.

Now you need an advertisement befitting your company image. The ad should be uncluttered, easy to read and, if possible, contain an image from your demo reel.

Make sure this image does not contain any text or logos that belong to another company. Having the name of another company appearing in the ad, even if you have their permission to use it, only causes confusion. The ad should announce your company name, your services and how to contact you. Don't waste space detailing your equipment and facilities. Instead, use the space for your image as a testimonial to the quality of your work. Keep it simple for easy reproduction (newspaper and Yellow Pages ads are usually printed in half-tones, which tends to obscure image details).

These ads are not to be confused with your brochure. Ad pages in newspapers and Yellow Pages are reproduced using the same process—meaning your competition is operating under the same restrictions you are. Company brochures are not all printed in the same way. You are giving your competitors an unfair advantage if you include images on your brochure which use a low-quality reproduction process. Spend the extra money for quality printing (two-color, four-color, etc.) for your brochure.

Also contact the media services departments of local corporations and city government. These departments often keep an internal list of contacts. Find out how you can be added to the video production list. For even more marketing ideas, I suggest getting a copy of the book "Guerrilla Marketing Techniques" by Jay Conrad Levinson.

Cooking Up a Contract

Unless you are an attorney, do not make up your own contract—spend the money and consult a professional. This is probably a one-time expense, because once you have a contract, you can use it over and over again. Another aspect to keep in mind is that your client has probably subcontracted out work before and knows what a real contract looks like. Handing them a real contract reaffirms the impression of professionalism that started with your company brochure and price list. If the client wants you to sign *their* contract, ask them to mail it to you. That way you'll have time to have it reviewed by a competent attorney.

If you feel you are being pressured to sign something without knowing exactly what it says, then alarm bells should be ringing in your ears. Similarly, you should have clients read your contract carefully prior to signing it. Give them time to go over it with their attorney. Upon approval, the client knows that you are for real and ready to do business.

I recommend one contractual stipulation: require one-third of the total bid to be paid in advance. If the client doesn't have enough money to make this down payment, then how do they expect to pay the total

fee? You may find yourself wanting to bend the rules for a customer who says, "I'll be getting the money any day now," and asks for delivery prior to paying. Don't do it! Under any circumstances, don't start working before you receive a down payment.

When you deliver the final product, include a written invoice for the payment balance. Invoice books are available at your local business stationery store. A receipt book is also a good idea so you can give the client a receipt for their down payment. Receipt and invoice copies then go to your book-keeping service.

Handling Business Growth

What do you do when your business takes off? A good rule of thumb is to never turn down work

because you are too busy. If you do, the clients will go elsewhere to get the job done. The competition then tries their best to hold onto the client for good. We obviously want our clients to come back for repeat business. The key means of getting repeat customers is providing a valuable service.

To ensure repeat business, make each customer feel as though he or she gets top priority—all other business is dropped when they contact you. When your business starts growing this can be a nearly impossible task. If you are in this situation, then it may be time to expand your business. Instead of hiring employees right away, make the transition away from a one-person operation by subcontracting.

To find subcontracting videographers, use your

Continued on Page 54

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business contacts from the local user group meetings. The same high standards which you apply to your own work have to be met by a subcontractor (those who do the best work are the ones you eventually give jobs to). Don't make the mistake of making the deal with a smile and a handshake. Have the subcontractor sign a contract just like everybody else.

A company/subcontractor relationship can be somewhat tenuous. You have to trust that they won't try and steal the customer away from you for future jobs, and they have to understand that if they do, there will be no future subcontracting work. The safest way to make this situation work is to view this relationship as an alliance. Subcontract to someone who already has a clientele—and when they're overworked, you'll act as their subcontractor. The fact that they have repeat business means the possibility of you receiving subcontracting work is reasonably good and the temptation to steal your customer is fairly low.

A note of caution: Stay away from "freshman" videographers. There are inherent risks attached to subcontracting to someone who hasn't worked on at least a couple of paying jobs. These risks decrease as work experience increases. The best advice here is to follow these rules:

- If they can't make a demo reel, don't give them work.
- Their demo reel has to demonstrate their ability to produce professional, quality work. Make sure the demo meets or exceeds your company standards.
- Ask them how they plan to create the production schedule.

- They must have the available time to do the work.
- They must respect the relationship you have built with your client.
- They must sign a contract.

If you use a subcontractor, inform clients in a positive way. Tell them you are expanding your business by taking on some promising and talented people. Show the client a copy of the subcontractor's demo reel. Let clients know they still have the option of having you do the work personally, but due to the demand for your work, it will affect the delivery schedule.

If the client seems a bit disappointed, let them know you enjoy producing the work they bring you and you would like to do it personally, but have a previous contractual agreement. Not to worry, because you personally guarantee the subcontractor's work. The client needs to understand that you have built your business on quality and this is not going to change.

Another general tactic for managing business growth is flexibility—take on different kinds of work. There are video specialties, such as wedding videos, that are cyclical in nature (i.e., the amount of available work varies throughout the year). By diversifying the kinds of work you do you can even out the boom times with the slumps. Identify a range of work possibilities and go after those clients. For example, try producing training tapes for local corporations, shooting local sports-event coverage for news agencies or video depositions for court cases. Use your imagination to come up with new applications for your work and you'll

supply a key factor in the long-term expansion of your business.

The Cutting Edge

To remain successful, keep the quality of your work right on the cutting edge. I am not just talking about keeping your video-related skills sharp. Another fact of life is that upgrading your equipment is an ongoing and never-ending process. Every time you get paid for a job, set some money aside for adding new capabilities to your system.

In freelance videography, success is tough to achieve—but it is not impossible. Recognize and implement what it takes to be successful and go after your dreams with determination. Even if you want to operate on a part-time basis, start with a full-time attitude. Make sure every detail meets professional standards. The first impression you make on the local video market will be around for a long time to either help or haunt you. You want to have a reputation for producing a quality product.

Escaping the nine-to-five grind to own your business is the dream of millions. If you have the talent, skill, imagination and determination to be a professional videographer, why not make that dream a reality? Start planning today.

VTU

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

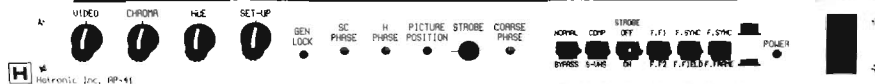
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Video Toaster User
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Cupertino, California 95014
(408) 252-0508

If the magazine you are now reading didn't arrive through a subscription, then I suggest you get one. Even if you're not going to pursue videography as a career, it's a magazine no Video Toaster owner should be without.

AV Video Magazine
Montage Publishing
701 Westchester Ave.
White Plains, New York 10604
(914) 328-9157

AV Video is the leading trade journal for the video industry and is available as a free subscription if you qualify. To get AV Video at no charge you need to be a business professional in the video or computer animation industries. Being the owner of a video production service certainly fits the description.

TV Technology
Industrial Marketing Advisory Services
PO Box 1214
Falls Church, Virginia 22041-9808
(703) 998-7600

TV Technology is another leading trade journal. I am including it here because the broader your exposure to the video industry the better you'll be at discussing current events in business meetings. Showing that you know what's currently happening in the indus-

try goes a long way toward getting recognition as a true professional. TV Technology is available free with the same restrictions as AV Video.

Business Supplies and Services

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Dallas Texas 75248
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Professional Associations

International Television Association (ITVA)
6311 North O'Conner Road
LB-51
Irving, Texas 75039
(214) 869-1112

Professional Videographer Associations (local)

I expect a nationwide association for videographers to be in place by the end of 1993.

Freelance Animation Extras

The Association for Computing Machinery, Inc.
11 West 42nd Street
New York, New York 10036
1-800-342-6626

Ask for information on joining the special interest group on graphics (SIGGRAPH). If they do not have a SIGGRAPH chapter in your area, you might even volunteer to start one up. Being a freelance animator who is president of a chapter of the ACM-SIGGRAPH is an honor worth printing in your brochure. This is the largest organization of computer animators in the world. The people in this organization work on the cutting edge of the computer animation industry. By becoming a member, your recognition grows.

National Computer Graphics Association (NCGA)
2722 Merrilee Drive
Fairfax, Virginia 22031-4499
1-800-225-NCGA

Ask for an application to join and if there is a local chapter in your area. If one does not exist, then you might volunteer to start one if you are not already involved in running something else. I have found that the contacts I make as a special interest group president (although not for the NCGA) make the time I invest in it very worthwhile. You will find the people attending your meetings looking to you as a local leader in computer animation.

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The ToasterFX framestore loader, saver and render modules, and GVP's ImageFX software are a complete paint and image processing package for NewTek's Video Toaster.

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

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

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

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

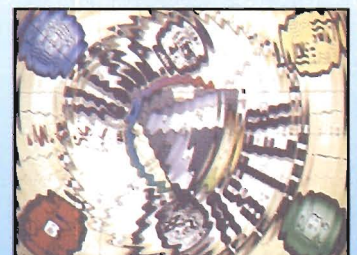
The RENDER module can directly display to the Video Toaster's framebuffers without leaving the ImageFX interface. (choose between DV1 or DV2).



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

ToasterFX also includes stand-alone utilities for:

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



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

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

**ToasterFX is available at your Video Toaster and Amiga dealer or directly from:
Byrd's Eye Software 9001 Northgate Blvd. #135, Austin, TX 78758 (512) 835-4811**

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Two-time Grammy nominee and MTV award-winner Paul Goldberg says:

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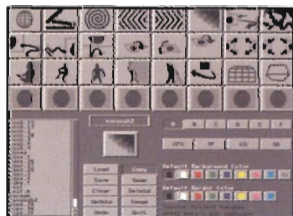
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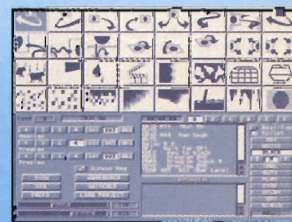


Toaster Project Manager - Create new project files, rearrange croutons, add and delete effects, alter, replace, or extract crouton imagery, and change effect speeds.

Framestore Cruncher - The fastest framestore compressor available - compress (by as much as 80%) AND decompress framestores with no loss of quality (Compressed frames are loaded faster).

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ToastMaster 2 - The best-selling Toaster sequencer has been upgraded and included in this package at no extra charge. ToastMaster 2 now displays actual crouton imagery and allows script and real-time control of the Toaster - complete, accurately timed scripts that can load and save framestores, CG pages, books, projects, and effects. DOS and ARexx scripts can be executed directly - you can even control serial devices (VCRs, laserdisc players, etc) from within scripts or in real-time. Scripts can be played back immediately, called from other applications, or triggered by GPI. Other features include the ability to alter the speed of effects, increase the number of available background colors from 8 to more than 4000, control the genlock, and much, much more.



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BRINGING IT ALL BACK HOME

Shooting Video with Editing in Mind

by Alex Bennett

Remember seeing those old boring family slide shows featuring Uncle Ralph and Aunt Barbara wearing mouse ears and plaid shorts while standing in front of a blurry magic castle? Or have you recently ventured to a friend's house on the premise of a casual get-together only to be held prisoner for two hours of vacation-video hell? I can only say, "Never again!"

My newest obsession is to take those tiresome home videos and turn them into something that can hold an audience's attention. It can be done—all you need is some really good travel video and a Video Toaster.

This year I traveled to France, Spain, Las Vegas and yes, Dorothy, even to Kansas (Topeka, that is). I learned a lot about the areas I visited, but I learned even more about how to shoot travel video.

I love shooting with a camcorder. I have a broadcast camera that takes incredible pictures, but if you whip one out on a plane (no easy task due to its size), the flight attendant will probably come over and ask if you have a permit to use the thing. Camcorders, on the other hand, are subversive. You can pass as a tourist with a S-VHS or Hi-8 camera; but, in actuality, you're close to broadcast quality without the hassles. Also, the small size and the ability to get up and running fast makes it my favorite way to shoot.

Cover Your Shots

When shooting for editing, the first technique to remember is to cover your shots. You are trying to tell a story. For example, how would you shoot the start of a trip? Get a point-of-view shot of walking into the airplane. Tape the takeoff through a window. Take shots of people in the plane reading, sleeping or just looking nervous. But if you are really sharp, you'll get one other shot. This one is back at the airport while waiting to board. You could tape a plane just like yours, taking off, and later insert it in the final edit as your

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plane leaving the ground. Who's to know that it isn't your plane? That's what I mean by covering your shots. Shoot for continuity.

People Movers

Now for my number one rule in travel video: People are more interesting than scenery! If you are traveling with someone, use them to move your story. This way you have a vehicle to hang your video on. If not, use people around you as a way to showcase the scenery. Let me illustrate. Let's say you want to show a street in Barcelona. You could pan down the street slowly, showing all the shops and architecture. Boring! Instead, picture this: Tape someone on a bicycle. Start with a closeup of the cyclist peddling and then zoom out as he moves along. Following the cyclist in effect shows the scenery, and at the same time gives your audience a reference point. Also, by shooting people, you present a real flavor of the place you are visiting.

If someone is traveling with you, all the better. Follow your companion around. Talk to him or her from behind the camera. You might even think of creating some kind of running scenario.

I know what you're thinking: "Suppose you are in the Sahara desert and there is no one around?". Then shoot a snake or a spider. Shoot anything! Don't shoot just the scenery.

Window Dressing

Composition is important. A finished product first starts as bits and pieces of a whole. Add some variety—don't just shoot straight ahead. Plan ahead and think about how to dress up shots to add perspective.

I'll use one of my favorite shots from Spain as an example.

My companion walks into the frame, goes down the street away from the camera, while I keep her center frame. Simple enough. But here's a professional



Composition and depth of field.

touch: Before the shot begins, I notice a tall floor-standing candle holder on the sidewalk outside an antique shop and focus on it. I cheat it to the right of the frame, and as my companion walked into the frame, I changed the focus to her (see photo above). I love that shot. The key was depth of field (where some things are in focus and others in front or back are

fuzzy). It makes for an intriguing visual. Remember, try not to shoot someone straight on. Compose the picture to give it perspective. Never let the picture look flat or uninteresting.

Fall in love with your subject. No, not that local beachcomber—I'm talking about the place you are visiting. Impart the ambiance to your audience by becoming very sensitive to everything around you. In many cases, something as small as a doorway or even a doorknob can convey the mood of a place. Always keep an open eye to all that is peripheral and real in addition to that black-and-white rectangle in the viewfinder.

Magic Light

Pay attention to light. Look for shadows, light glistening off shiny surfaces like water, and reflections. Don't be afraid to shoot into the sun if it helps to frame an object, like a church or a person, for example. A sunset shot can create a romantic mood, or shown hanging over a beach, can convey the heat (see photo on next page). Your camera will not be hurt—CCD chips don't burn (it's an old wives' tale from the days of tube cameras). And don't worry about the low-light indicator coming on. If you can see the subject in the viewfinder, then you'll most likely see it onscreen. In many cases, the camera is light-averaging. For example, while what you want is a spot of light at the end of the hall or down the street (and that may be just fine), the viewfinder will still say "low light."

While we are on the subject of light and shadows, my favorite time of day to shoot is during what some photographers call "the magic light"—the 30 to 45

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minutes before sunset when the sun is low on the horizon. It is at magic light that the sun cuts through the earth's haze, and shadows are at their longest. During this time, you can get some of the most beautiful shots.

Move, Move, Move

Make your camera move. A point-of-view shot conveys the feeling of being there. The biggest problem with a point-of-view-shot is shakiness. If you don't have a SteadiCam, there are three tricks to eliminate the shakes. First, use your zoom's widest angle (the more you zoom in, the more every slight shake looks like an earthquake). Secondly, keep your eye away from the viewfinder (close enough to see, but not so far that your body motion causes the camera to shake). Lastly, don't rest the camera on your shoulder for much the same reason; hold it up to eye-level. Also remember, the lighter the camera, the shakier the shot. If you don't mind the heft, a heavier camera takes smoother shots.

Accessorize!

When preparing a fine meal, you add herbs and spices; buying camera accessories is somewhat analogous. Add lens attachments. My favorite is the "Curvatar" lens, produced by New York City-based company Spiratone (now defunct). It is an extreme wide-angle lens that not only gives you near-human peripheral vision, thereby imparting a "real" point-of-view perspective, but also has infinite depth of field allowing everything from 0 to infinity to be perfect in clarity. Due to the Curvatar's extreme wide angle, another use is to shoot for a letterbox, and

then do the post-production matting with your Toaster. It looks like you shot for the wide screen, rather than just cropping the picture. Short of being able to find the Curvatar, a quality wide-angle lens will do and should be an integral part of your video bag of tricks.



Using light to evoke emotion.

Other lens accessories to add are filters—diffusion, starburst, center sharps, etc.—to draw out what you want the viewer to feel. For example, a starburst filter used on the water near sunset will make points of light glisten. A diffusion filter makes a scene tranquil. These can be purchased at any photo shop and the variety is endless. As I said, it's kind of like

adding seasoning to a meal.

Toaster Rolls

Keep in mind all the wonderful things a Toaster can do. You'll need an credit sequence at the end perhaps, so shoot some footage with that edit in mind.

Find a picturesque scene and shoot it for about a minute. You might want to cheat the center of the shot to the left so you can lay in your credits to the right.

If you have an A/B-roll system, coordinate shots so they work together in a Toaster-effect transition. One of my favorite transitions was on my trip to France. I pointed the camera out the window of the "bullet train" to Paris. As we went into a tunnel, darkness wiped across the screen from left to right. I took a soft wipe from the Toaster and found the speed that best approximated the speed of the train and then wiped into the Paris train station from left to right. The effect was seamless. Rather than going into a tunnel, we entered the train station. Think ahead and your post-production use of the Toaster will be more effective.

These are some of the basic techniques that I use to make bringing home some good bread for the Toaster easier. Many of these basics apply even if you aren't shooting to edit the final product. Edited or not, consider relieving your friends and relatives from having to sit through an endless supply of boring vacation videos.

VTU

Alex Bennett is a San Francisco-Bay Area media personality, amateur videographer and frequent contributing writer to Video Toaster User.

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LIGHTING TIPS FOR THE ENTRY-LEVEL PROFESSIONAL

by George Avgerakis

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In previous articles, I discussed basic production techniques (see *From Home Video to Home Box Office*, *Video Toaster User*, October/November 1992) for the prosumer and would-be professional videographer. In this article, I examine the basic philosophy and entry-level tasks of the Director of Photography (D.P.).

"Motion picture photography is like painting with light."

- Phil Motram, Director of the London International Film School and "lighting cameraman" (the British term for Director of Photography) on numerous features and BBC documentaries.

Consider a totally dark room. In the center, you place a still camera with its shutter locked open. The film is as yet unexposed. Then, take a flashlight and wave it about the room. The film, when developed, would render a "painting" of the room, proportionate

to the speed of the light-spot and the reflectivity of the objects in the room.

Although cinematic lighting can get pretty complicated, it all boils down to the simple analogy above: Your job as a D.P. is to bounce sufficient light off the objects before the camera to render an appropriate image on the recording medium.

The Limits Of Your Image(ination)

As cameras and lighting tools advance technologically, they provide a wider variety of effects and a potentially vast armamentarium of production solutions. When Thomas Edison invented motion pictures, his engineer, William K. Dickson, who could be considered the world's first cinematographer, built the film studio on a rotating base so that the natural sunlight could be flexibly directed onto the set with 360 degrees of variability. For a long time, early filmmakers were limited by the availability of sunlight, and the center for filmmaking inevitably moved from Edison's New Jersey studios to Hollywood because of California's abundant sun. An appropriate subject in Edison's time was limited to what would fit onto the eight-by-eight-foot shooting stage, could perform completely in one minute (the limit of the film length) and expose in bright sunlight.

The advent of artificial light (along with more sensitive film emulsions and light-sensitive semiconductors) broadened the filmmaker's capabilities. Today, you can easily light for video with nothing more than a flashlight, which means you are free from the historic constraints of time and money. Now you can videotape just about anything. An appropriate image today is limited only by

your imagination and the desires of your client.

For fun, let's imagine that Tom Edison is your client. Like William Kennedy, you are asked to film a staged boxing match between Jim Corbett and Tom Courtney (the first commercial filming assignment). Let's impose the same limitations of cost (without inflationary adjustments!) that Kennedy had to construct his entire studio: \$638. What kind of video could you make?

Exterior Lighting: A Partnership With Nature

First, let's assume you won't use any electric lights, filming the fight under natural sunlight. What tools could you employ? For a few dollars, you can purchase several sheets of "foam-core." Found in art supply stores, foam-core consists of a sheet of Styrofoam sandwiched between two pieces of paper. It's usually plain white, but you can also find foam-core with white on one side and black on the other. Use the white side to reflect the sunlight onto those parts of the fighters which are difficult to light with an overhead sun (like under the chin).

The black side is handy as a neutral background in a close-up shot, thereby creating a suitable area into which the Toaster can luminance key in post-production. Edison lined the studio with black tarpaper in order to seal out unwanted light. If he'd had a Toaster, he could have luminance-keyed the entire background off and substituted a scene of cheering spectators! You can do this with any scene that has a black background. But be careful. If your foreground image has any areas with the same level of black, they too will be replaced! Use white foam-core to lighten up these areas.

LIGHTING TIPS FOR THE ENTRY-LEVEL PROFESSIONAL

Foam-core's rigidity can also support other forms of flexible reflecting material. You can staple ordinary aluminum foil to the foam-core to get a more powerful reflector. On a sunny day, foil reflectors can be used from some distance to spotlight a subject. You can also buy various forms of colored and textured foils. I like the way textured gold foil produces a romantic sunset effect on edges of a woman's face. You might like the high-tech look of blue foil highlights on a fiberglass sportscar.

So far, we've spent about \$25 on foam-core and foil. Now add about \$150 for the Production Assistant (P/A) who holds the foam-core just right, despite painful muscle fatigue! Put the P/A to work elsewhere by using a stand. You can make one easily with a vertical two-by-four piece of lumber nailed to a crossed floor brace. Add another piece of two-by-two lumber with a wing-nut hinge to make a boom.

This \$10 "jib-arm" stand could fall over and hurt someone, so buy a pair of water bottles and tie them together with some rope. On location, fill the water bottles and use them as weights for the base of the stand. You can also buy some canvas and sew together some simple sand bags. Use extra-strength thread to prevent leaking sand.

Another reflecting tool, which costs about \$60, is the cleverly designed Flexfill. This is a circular cloth reflector, held firm by a coil of spring metal. With a simple twist the 20-inch-diameter panel is reduced to one-third



Three sizes of spotlights plus two all-purpose plywood "apple" boxes.

of this size for storage.

Don't forget that reflectors can also make shadows. Strategically placed shadows are helpful in removing unwanted glare or for creating dramatic effects. You can take a sharp knife or razor and cut designs in the shadow material, too. These designs can be stripes (to imitate the *American Gigolo* venetian blind effect) or any other shape you can imagine. Shaped shadow cards are called "gobos." If you are going to place a gobo in front of an electric light source, however, it should be made of heat-resistant material or light-gauge metal to avoid causing a fire.

Interior Lighting: Juice Time

Most professional lighting requires large amounts of electricity. In a studio, special cables and circuit-breaker boxes are installed to provide hundreds of power amps. On location, the responsibility of providing elec-



Assorted flood lights and four-way cables are found on many production shoots.

trical power lies with the "gaffer." The gaffer is often a fully-licensed electrician. The gaffer begins his work by distributing correct amounts of power throughout the set to supply each lighting instrument.

On location, the gaffer's job is critical and potentially dangerous. Here, he must often perform a "tie-in," which involves connecting directly to the utility company junction box at the house, factory or street facility where the shoot is taking place. Often, a generator must be rented to supply power on remote locations where no utility power is available.

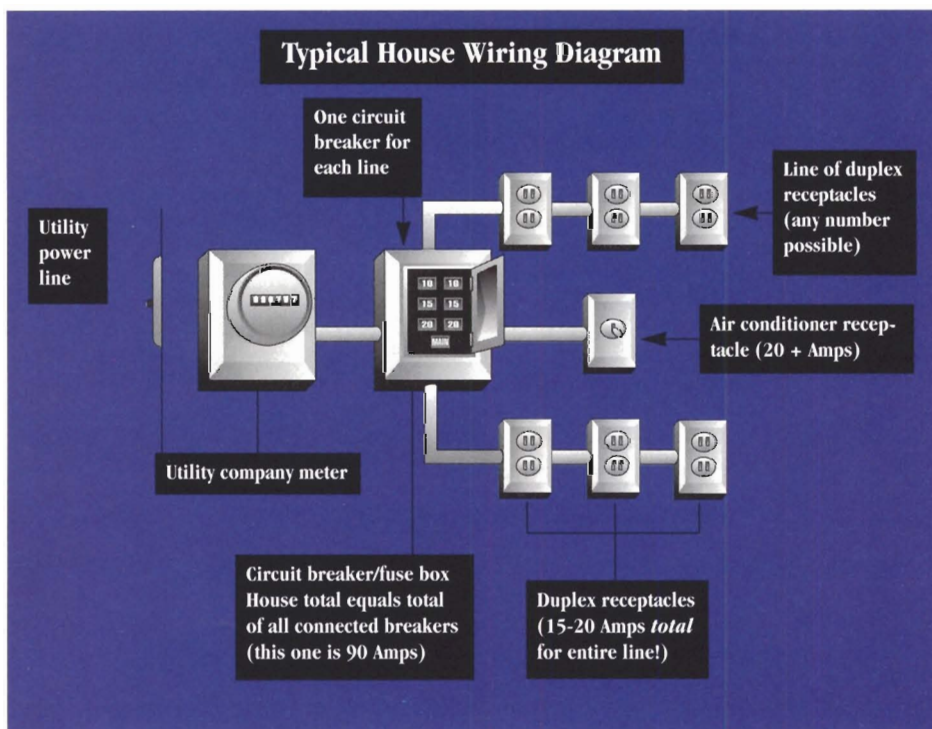
During the 1979 blackout in New York City, enterprising commercial producers quickly bid up the price of all available generators as locations throughout the city went dark. The gaffer on *King Kong*, who had already rented more than he needed, became a very popular guy!

Avoiding Zaps And Stings

As a novice lighting technician, your lighting should stay within the bounds of battery and 110-volt "plug-in" residential power. Today's low-light-sensitive cameras rarely need aggressive lighting. Even network news crews use little more than a simple 12-volt camera-mounted light for nearly everything they do.

Remember, electricity is dangerous and even a small amount can kill you. When lighting with AC power, always remember to wear rubber-soled footwear (you'll also be quieter during sound takes) and, whenever possible, work gloves. The gloves can save you an occasional shock, but more often they will prevent a serious burn. Lights get hot and there is often no time to think about your hands when you have to quickly re-aim a light before a magic moment passes. Rubber-coated gloves would be safest for electrical work, but they stick (and stink) when touched to a hot light. A simple pair of leather carpenter's gloves is what most gaffers tuck into their belt.

Electricians also have a golden rule: "One hand in your pocket." You can avoid many shocks if you handle electric wires with one hand. All medium voltage (0-220 volts) shocks result from a passage of current from a supply source, through a part of your body and on to some other conducting object that is grounded. You could safely grab a 110-volt, 20-amp bare wire without getting shocked if there is no other part of your body touching a grounded conductor. On the other hand,



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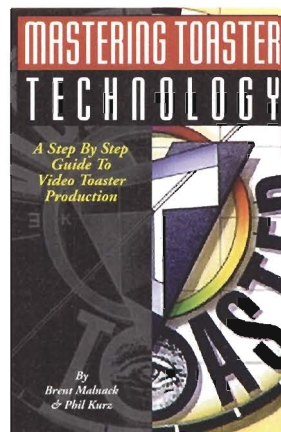
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standing on a sidewalk with wet shoes or holding a house's water pipe in your other hand would be harmful, if not fatal. This is because the electric current passes from the wire into your hand, through your body, into the water or pipe and back into Mother Earth. If the electricity can't get through you and back into the ground, you don't get shocked. Assuming you are wearing well-insulated shoes and no other part of your body is touching anything, keeping one hand in your pocket can save you a lot of zaps.

Incidentally, a hip pouch, equipped with some basic tools and supplies is essential. Pack it with the following: A pair of pliers, a vise grip, interchangeable Phillips/slot screwdriver, a small Maglite-type flashlight, several marker pens (especially a Sharpie, which can write on acetate surfaces) a continuity tester and a simple plug-in fault analyzer (helpful for eliminating wall plugs which are overloaded or improperly installed). In addition, you should carry a piece of cardboard with a dozen common clothespins or metal bulldog paper clips. These are handy for fastening colored gels to lights. Finally, add a small length of window sash chain, affixed to the pouch with a removable snap.

On this loop you should carry two or three small rolls of gaffer tape, camera tape and white-cloth surgical tape. All three are useful at different times. Common duct tape is often substituted for gaffer tape. It looks similar, but has a different glue. Duct tape glue is residual and results in a mess at removal time, gumming up wires and removing paint. Gaffer tape is worth the extra cost. Camera tape was used in the days of film for sealing film chamber doors and film cans from stray light, but it's still handy for neatly blocking out "hot spots" on reflecting metal surfaces. White tape is useful for marking focus points on the side of a lens or for labeling gear.

It's amazing how a simple tool pouch like this can make the difference between a disaster shoot and a winning performance. I've seen shoots with five technicians and 10 actors come to a grinding halt because a key light got stuck and there were no pliers handy to unlock the nut. The apprentice lighting assistant who shows up on a location with a fully-tooled kit can make a very favorable impression on his superiors. Even if you are not preparing for a professional role in the industry, having the right tools always on hand makes for better prosumer productions as well.

The Duplex Receptacle

Assuming you won't be tying-in or using a generator, your power will be supplied by DC (direct current/battery) or AC (alternating current/utility company) power. The most common source of AC power is the duplex receptacle. This is the normal house "socket" which has two places to plug something in. When powering lights from duplex receptacles, the most common problem is overloaded circuits.

Electricity is an aggressive force. If you give electricity an opportunity to go somewhere and do some work,

it will do everything it can to get there. So, if you put a toaster (the original kind), a microwave, a refrigerator and a 500-watt light into one receptacle, the electricity available there will try to make all these appliances work. The enormous power required, surges through the wires, which in this case are not thick enough to carry the flow. The wires begin to heat up and the circuit-breaker (or fuse), fulfilling its role as a safety device, interrupts the flow of electricity. (If the circuit has no interrupt device, the wires continue to heat up, glow and then start to burn).

There is a simple formula to determine if you are drawing too much power from a circuit:

$$A \times V > W$$

Where W = the total wattage of all the devices plugged into the circuit (determined by adding their wattages together).

A = the amperage (maximum capability of the line), usually determined by the size of the installed fuse or circuit breaker.

V = voltage (which, in most cases in the U.S. is 110, but to keep the math simple and add a margin of safety, I use 100).

Thus, to rephrase the above formula, the system's maximum capacity (in amps multiplied by the standard voltage) should not be exceeded by the total wattage of all connected devices.

Here's an example: You determine the scene lighting requires five 100-watt bulbs. You have one 15-amp circuit. $15 \times 100 = 1500$. The total wattage of five 100-watt bulbs is 500.

The maximum wattage of the circuit breaker is 1500 and you want to draw 500, so your draw is within the limits of the circuit and its breaker. Keep in mind, however, that there may be any number of duplex receptacles connected to one circuit breaker! There is no sure way to verify connections without a house plan, an electrician or elaborate equipment. You could turn the circuit breaker off and see what appliances or lights fail to function, but you might miss an appliance that isn't already on when you test the breaker. Classic examples are refrigerators, air conditioners and other self-controlled devices that have a habit of turning themselves on, overloading a circuit, popping the breaker and throwing your set into darkness right in the midst of a difficult scene.

Most house circuits are rated at 15 or 20 amps. Some circuits, installed for an air conditioner or electric stoves, are higher. You can use these circuits as designed, if you are sure the large-amp appliances have been disconnected. If you have any doubt about the circuit, can't test it properly or have any doubt that the circuit is not properly fuse-protected, don't use AC lights—go with battery lights.

Do not think you can change the fuses



"Tie-in" equipment adds big bucks to your lighting truck income. From left to right: stage plugs, four-way cables and tie-in box.



Sandbags are handy stabilizers for lighting stands and gear.



These spotlights with fresnel-type lenses can be adjusted between flood and spot via the black knob below the lens.



Typical floodlight with barndoors.

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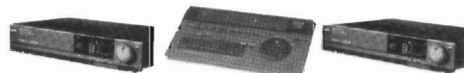


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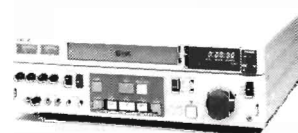
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LIGHTING TIPS FOR THE ENTRY-LEVEL PROFESSIONAL

in a circuit to achieve greater amperage capacity. A fuse should be lower than the line's rating if it is to properly protect the line from overload. If you put a 30-amp fuse in a 15-amp line, you effectively remove the line's protection and risk catastrophic results.

When shooting in factories or corporate offices, a good policy is to request the services of the building's electrical engineer. My production contract has a separate clause that advises the client to obtain such services in advance. If clients whine about this expense and trouble, tell them about the New York documentary producer, who when rushed by his client, neglected to ask for the building electrician, assumed a circuit was not being used and took down three computers when the breaker popped. The host facility was CBS, the producer was me, but the client was the risk underwriter! Luckily, the engineer showed up quickly; but these guys are notorious for taking an hour to open up a locked circuit breaker closet. Take heed and be forewarned.

Midnight Sun To Candlelight

There are basically three types of lights. The latest and most expensive are HMI lights. These are large, expensive, very bright and emit the same color light as the sun. Consequently, they are used by commercial and Hollywood producers when lighting a location house. The HMIs are set up outside to shine in through the windows. Even at midnight, a few well-placed HMIs can make it look like noon inside. Because of their expense and large power consumption, HMIs are usually rented and are rarely found on any production with a budget less than \$80,000.

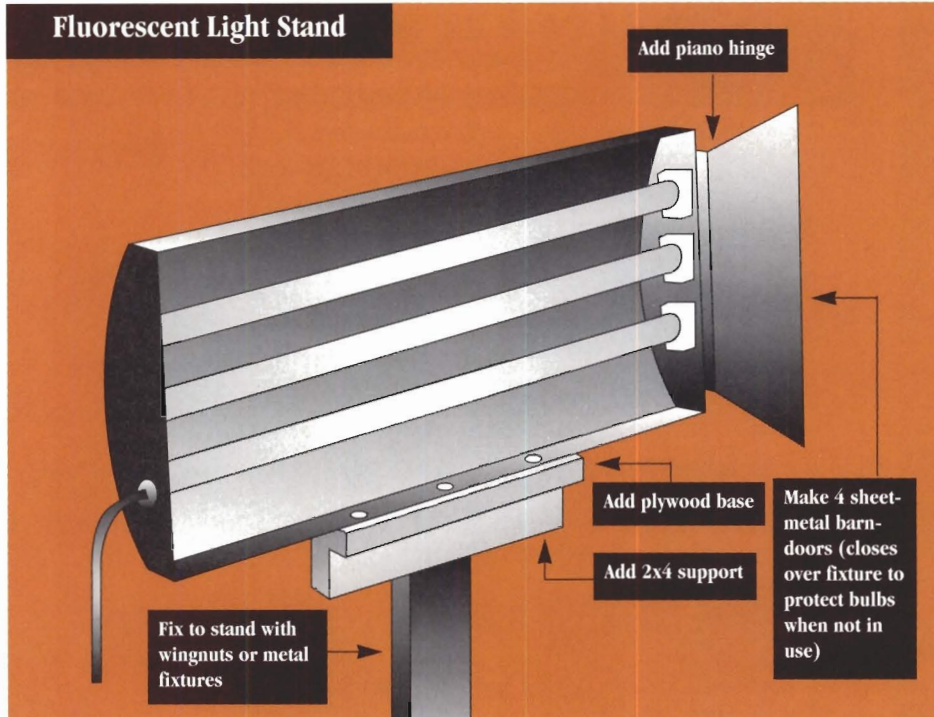
The remaining two categories of light are quartz (referring to the quartz-enhanced glass which is required to make the bulb) and common tungsten bulbs (the kind you use for your house lighting, which are referred to in the industry as "practicals").

Almost everyone in the mid-budget production range (\$5,000 to \$80,000) uses quartz lighting, with occasional application of well-placed practicals.

Low-budget producers can make their own lights by combining the parts from a hardware store's lighting department. Today's low-light prosumer camcorders require very little light to expose a satisfactory picture. If you've just spent your summer intern money on a Toaster and camcorder, it's okay to use a couple of hardware store lights to get started in production.

Whatever light type you use, you must keep in mind that each has a particular "color temperature" (expressed in degrees Kelvin) that denotes hue from blue (sunlight on snow at about 6,000 degrees Kelvin) to red (an aging low-wattage house bulb at about 2,800 degrees Kelvin).

Your camera's white-balance function is capable of balancing all the colors in a scene, if all the lights are the same color temperature. If you've noticed that indoor subjects look reddish while the scene outside the window looks balanced, or if you've noticed that the



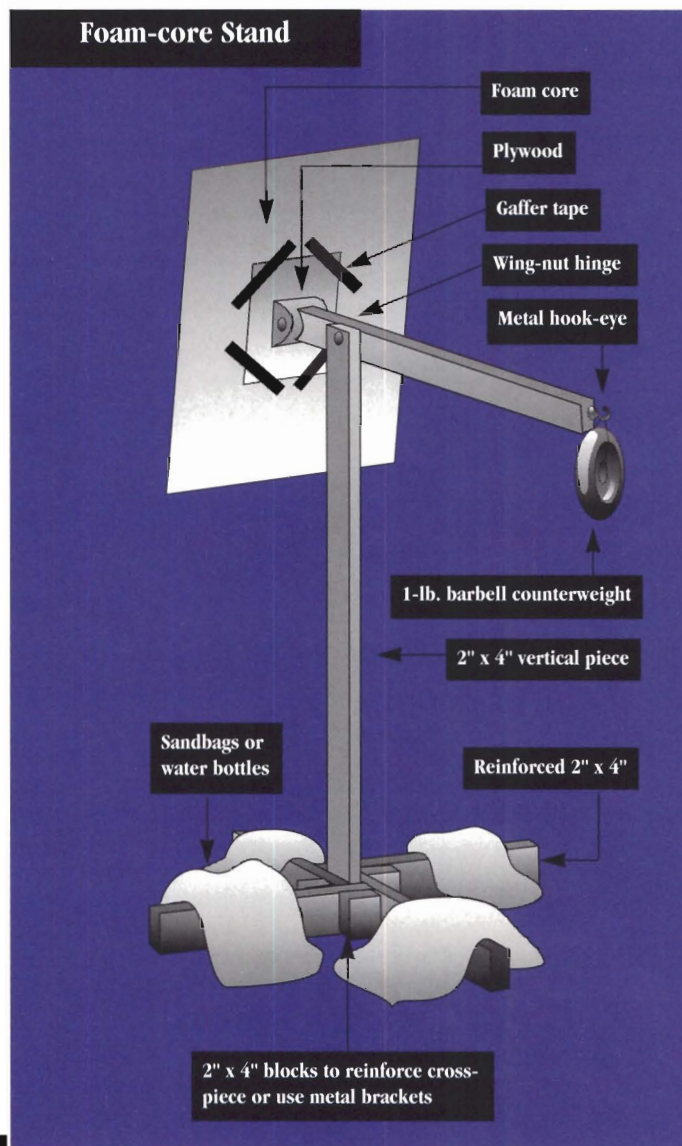
window light looks blue while the interior scene is balanced, this is because neither film nor tape can render a balanced scene with such a wide range of color temperatures.

A Cheap Trick

A lot of professional video is shot in corporate offices, which usually use fluorescent lighting. Fluorescent lights require much less current than equivalent tungsten lamps, and they don't get as hot.

Fluorescent light falls into a weird category of blue-green color temperature. Although there are sunlight bulbs, which approximate 5,600-degree outdoor light, and colored plastic filter tubes which, when slipped over a blue-green bulb change its color to that of sunlight, most offices are lit with the blue-green variety. It's possible to light video very effectively with portable fluorescent panels. Most corporate "talent" love to be lit by fluorescents, since there is no heat nor glare. Non-professional spokespeople and documentary interviewees perform better with this reduced stress.

Fluorescent light hardware is expensive. But you might consider shopping

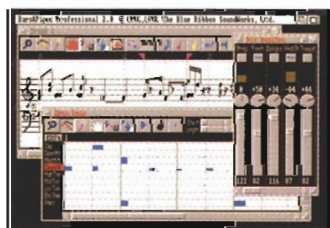


...Continued on Page 70

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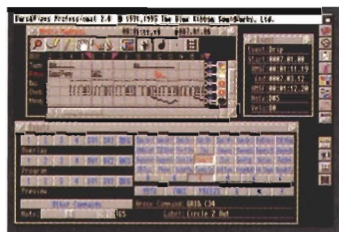


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around the local demolition companies in your town to pick up several used fluorescent light banks. In New York City, a working panel with four six-foot tubes goes for about \$10 to \$20. You'll need to dress it up a bit with appropriate fixtures so that it mounts on a good floor stand, but after that, you're in business.

The only drawback to fluorescents is the bulbs. They are hard to transport, break easily and you will have to carry both the blue-green and sunlight types (or appropriate filter tubes) to be able to match the offices in which you shoot.

A Toaster Fix In The Mix

Finally, if you end up with a scene that is not properly lit, you can always attempt a last-minute rescue in the editing suite. The Toaster's ChromaFX is an excellent fixer. Appropriate digital filters can correct a full scene from sunlight to tungsten or reverse. However, if only parts of your scene need color correction, a full-screen ChromaFX fix won't work.

Still, you're not out of luck. If the scene doesn't move much, you can build a partial filter by going into Toaster Paint and shaping the ChromaFX filter matrix to cover only the area of the screen that needs correcting.

If the scene moves more than you can cover with a fixed matrix, you'll have to make a high-contrast sub-master. Explaining this is a bit beyond this article, but if there's enough demand, I'll describe moving mattes in another issue. (Maybe you can figure it out yourself!) This extent of correction effort, however, may exceed the effort required to reshoot the scene or convince yourself and the client that the mistake was artistically justified.

Clothing The Naked Bulb

Obviously, there are going to be situations when you have to mix different lights in the same scene. There will also be situations where you want to soften or shape the light in some way. All of these situations can be addressed creatively by the D.P. through the use of various filters and shadowing devices, called "dressing," that attach over the light source. Lighting is a lot more than using bare bulbs.

The most basic device is the "gel" or "filter." These are sheets of scientifically colored plastic film (or gelatin) that are placed over a light. For instance, if you want to color-balance the bluish sunlight in a window to match the redder light of interior house lamps, you would use an orange gel—specifically a Wratten 85. The name comes from the company, Wratten, which originated one of the color systems in use, and 85 refers to the color type. You don't have to remember all the numbers. The most common are 85, Full Blue and Half Blue. The blue gels are (you guessed it) for changing tungsten lights into a shade that will match window light. Full Blue is darker than Half Blue and helps in matching light levels.

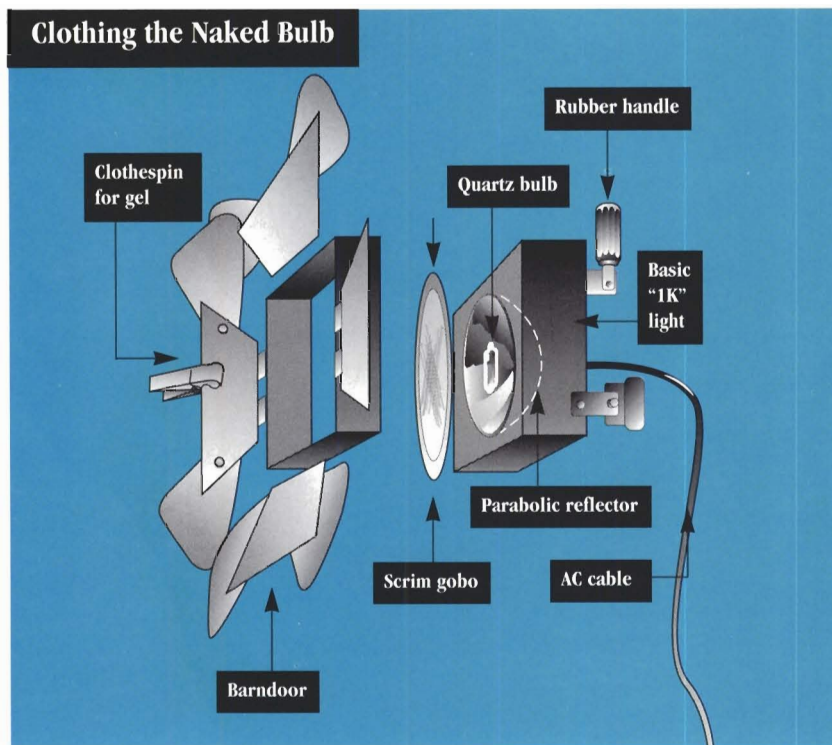
A call to your local lighting supply house will yield you a free pad of gelatin swatches that you can use to order the gels you will need. It's cheaper to buy in quantities, but a few 12-by-12-inch pieces of each type will do for starters.

The next type of bulb dressing is for diffusion. Often

the harsh, direct light of a naked bulb is too intense on the subject, or you may wish to avoid the shadows cast by a subject against a wall or other objects. The most simple diffusion material is "Spun," a fiberglass fabric that comes in various thicknesses. Spun is fireproof, thus is safe to use over a hot light. Don't use paper or you'll be taping stock footage of fire trucks.

Both spun and gels are held in place over the light with metal clips or common clothespins. Don't use tape

watts, and it can be a bare bulb source or have a scrim to soften the edges (useful if your subject wants to look a bit younger). The fill light should be diffused with Spun, or bounced onto the subject with a reflector. If bounced, it has to be 1,000 watts also (we name lights by their wattage: 1K, 5K, etc.). The backlight can be 500 watts or 1K undiffused. It is only used to light up the subject's hair and shoulders to differentiate them from the background.



of any sort, since the glue will cook on the hot light. Gels and spun should be clipped to the "barndoors," not the light fixture itself. Barndoors are a set of four metal flaps that can fold over the front of the light, covering part or all of it. Barndoors usually come with the light package and can be used to cut off various portions of the light beam to shape the light as required.

Behind the barndoor and in front of the light is a round slot into which you may insert a "scrim" or a metal gobo. A scrim is a piece of metal mesh screen material in a solid metal frame. It is used in the same way as Spun, but has slightly different diffusion properties. The metal gobo can be cut with a knife to allow a specific shape of light through—like the "venetian blind" effect we talked about earlier, or a "leaf effect" to imitate the sunlight that filters to the ground from high above a tree.

All of these devices—gels, Spun, scrims and gobos—can be made inexpensively from almost any fireproof material. If you are making a low-cost lighting kit from hardware supplies, you should spend some time making and experimenting with these tools so that you won't go out naked into the light.

Going On The Road

How many lights will you need on location? It depends on the scene you will be lighting. The simplest shoot, a "talking head" scene can be done with a simple camera-mounted battery light. Quality lighting, however, requires at least three instruments: a key light, a fill light and a back light. The key is the brightest, so if you have only one quartz light, use it here. I recommend 1,000

Remember that each light needs support equipment. This means enough heavy-duty power cords (i.e., the kind with a third ground wire), four-way receptacle boxes, light stands, brackets and other hardware. Common C-clamps are handy too for attaching lights to odd places, like the top of a door.

Buy a milk crate and fill it with those round, plastic wind-up extension cords. A crate will hold up to five. Add five power strips or four-ways. Top off the box with some rolls of tape (to tape wires to the floor where people pass and may trip if you don't) and you've got a handy gaffer package.

You should buy light stands. Anything hand-made isn't worth the work or the risk of having it collapse and hurt someone. Lowel-Light Mfg. (140 58th St., Brooklyn, NY 11220; [718] 921-0600) makes several lighting kits

with a wide assortment of appliances that are indispensable on location. At the very least, get their catalog and look through it like you would study a textbook. You can learn a lot about lighting from a catalog.

If you're lighting a large scene, you will need more lights and more stands and more cables, etc. Consider renting what you need; lighting equipment is the least expensive category of rentable production gear. If you think you might enjoy lighting as a professional freelancer, consider putting together a "truck." Any small van will do. Load it with everything a location could need and you can fit. Charge a basic fee for yourself and a minimal lighting package and then charge for each additional item taken off the truck. An average truck with a gaffer and assistant can hire out for around \$1,200 per day. You'll quickly find that those "off the truck" add-ins can add a hefty bonus as well.

Lighting gear is long-lasting and can be bought used. It rarely becomes obsolete and most servicing can be done by any handyman. Compared to video equipment, lighting gear is an excellent investment. Compared to getting a job as a director, gaffers are constantly in demand.

Now go out and take the first step. Buy a light and plug in to a bright new career.

VTV

George Avgerakis is founder of Avekta Productions Inc., a motion picture production company in New York City. He is currently directing the first American-made sitcom for the C.I.S. (formerly, the U.S.S.R.) television network.

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Digital Audio and MIDI Trigger
Toaster Switcher Control (serial)
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Shuttle Knob (optional)
Audio Mixer (optional)
et al...

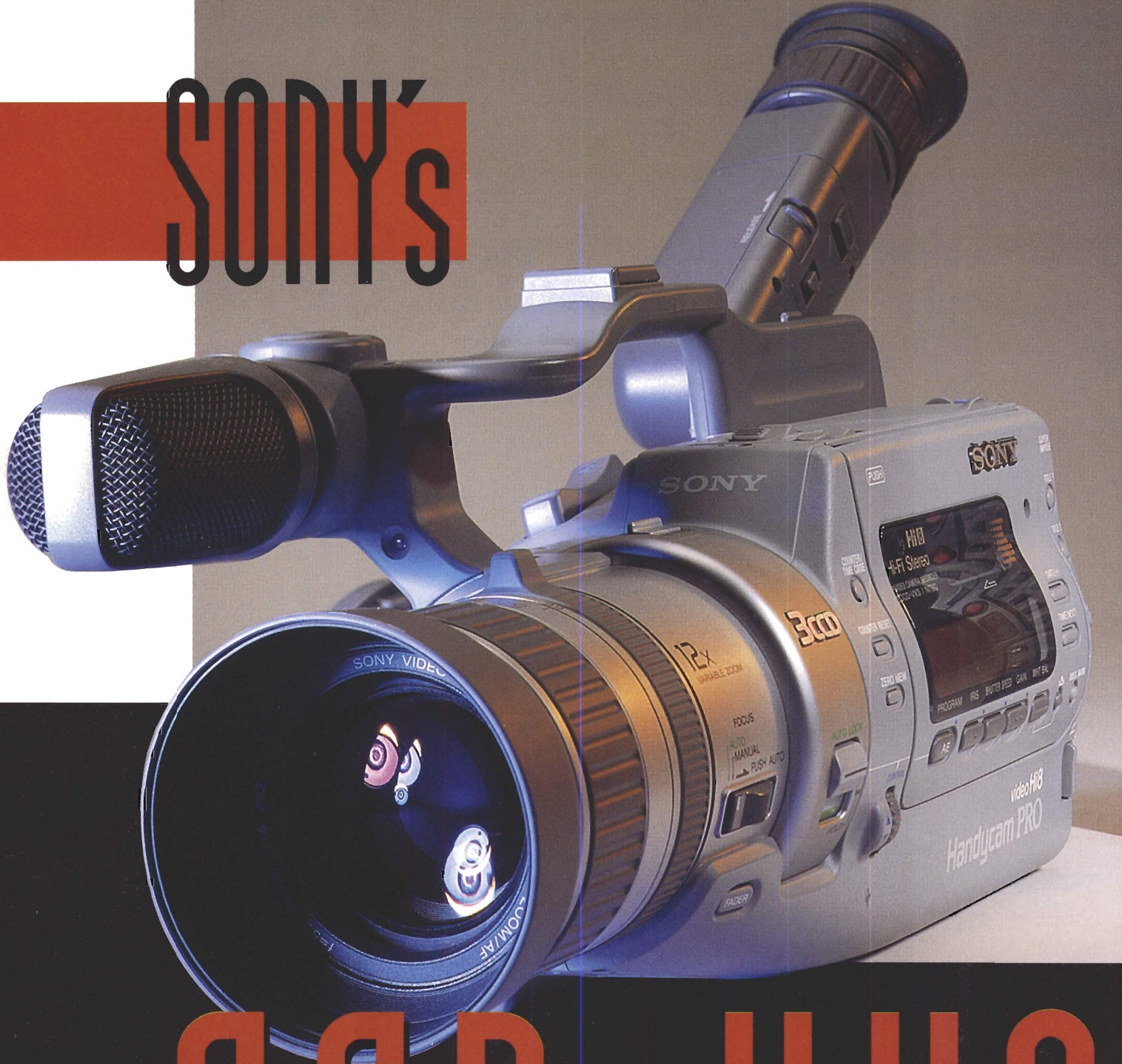
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You can open just about any consumer electronics magazine today and see a feature review of Sony's new consumer three-chip camera. It's the closest thing to a consumer-product "event" we've seen in a long time. Those articles will give you feature lists and comparisons to other camcorders. The truth is, there is no way to compare the CCD-VX3 to any other consumer camcorder on the market, so I'm not going to.

Instead, I'll try to help those of you waiting with anxious checkbooks and credit cards understand why this product and the timing of its introduction is so important to anyone buying consumer equipment for prosumer or professional videography.

First, a little personal history. Although most of my video work is for commercials and industrial production projects, I occasionally bring along my Hi-8 consumer camcorder for extra footage and interesting hand-held effects shots that are just impossible to get with my larger broadcast unit. Although the quality of the footage shot by my Hi-8 unit has been good, there was never any chance of mistaking it for footage shot with my "pro" camera. The pro camera I'm referring to is a Sony DXC3000, one of Sony's first-generation three-CCD cameras designed for ENG (Electronic News Gathering). The modest price tag of this camera when first introduced was just over \$8,000—which at that time was considered quite a bargain.

Today, there are many different consumer-camcorder models, none of which can deliver as good a picture, with the possible exception of Sony's newest, the CCD-VX3. The primary reason is its three-chip design. Three chips can deliver three times the visual information of a single chip, and have a better picture with more vivid and life-like color.

Three-chip cameras and camcorder designs have been available for broadcast and industrial markets for several years. The reason we haven't seen three-chip configurations for the consumer market until now is mostly economic. The prism optics that split the incoming light into the three primary colors, along with the extra required precision of the actual lens itself, cost substantially more to produce than single-chip designs. Additional CCDs and associated circuitry also add to the design and manufacturing costs.

The emerging "prosumer" market is becoming an economic force, due in no small part to the Video Toaster's success. This new market segment (sometimes referred to by industry insiders as "the attack of the Toasterpeople") has proven that there is a large enough demand to justify its hefty \$3,500 price tag.

The question is, is it overkill for the Hi-8 format limitations? With all this additional picture fidelity, can Hi-8 deliver the goods when it comes time to dub and edit? If not, then why spend all this money for the additional technology? I can already hear the outraged cries from the gallery, "This guy is a broadcast snob! We want our three chips; we deserve 'em!" Maybe so, but let me get on my soap-

By Frank Kelly



box for a moment, hear me out, then throw all the tomatoes you like.

Dispelling Myth

Let's start off by tackling one of my favorite complaints about the currently available "Hi-band" (S-Video) tape formats. Devotees of S-Video formats continue to propagate the myth that these formats are better than previous offerings because they keep its information in "component" form. First of all, the only true component formats are Betacam and MII. While S-Video does maintain separate channels for color and luminance, the color information is still recorded and processed identically to standard 8-mm and VHS. This process is referred to as "color under."

Back in television's golden age, engineers had to invent a way to broadcast color signals both to color and black-and-white TV sets. The method of modulating, then demodulating the color signal used to accomplish this survives virtually intact to this day. The same technology is used to store picture information on videotape in all color-under (non-component) formats. Luminance or "detail" information tends to degrade quickly during the process of combining it with the color information to make a composite video signal. This happens every time you make copies or pass the signal through a device which modifies the signal in some way.

Here's a comparison to help you understand the color-under format. Try to imagine what would happen if you had a watercolor picture whose details were "drawn in" by a fine ink pen. Every time you make a copy of your videotape or pass your composite signal through a processing device, you "spill" a glass of water on that water color picture. If you could somehow keep the ink from running (keep your luminance signal separate) the details of the image would remain virtually intact, but the watercolors would continue to "bleed" and diminish with each successive generation. In true component formats, the method for recording and processing color information is entirely different from the color-under method—more like a three-color silkscreen printing process. So when referring to video formats, the term "component" should never be used to describe S-VHS or Hi-8.

Color Me Bad

Now let's talk about how well color-under formats handle high-chroma (color) levels. Highly-saturated colors, especially reds and reddish colors such as violet and orange, perform miserably with the color-under method. Some manufacturers have introduced a slight color phase shift in their camcorders' internal electronics to minimize the effect, resulting in a slight purplish tint to flesh tones. When you adjust the color balance to correct for the shift, the other colors are not accurate, but at least the appearance of oversaturated colors is minimized.

Another problem with S-Video formats is oversensitivity to glare from bright objects. If you are shooting in a well-lit area, the "glare" from white objects sometimes overdrives the enhanced luminance circuits in these formats, resulting in "blobs" of white areas where detail is completely washed out. Pro cameras have a special "Neutral Density" filter to compensate for this problem, and guess what—so does the CCD-VX3.

I'm not just picking on the Hi-band formats; 3/4-inch and 3/4-inch SP are also color-under formats and suffer similar problems but to a much lesser degree. Tape width and the speed at which it passes across the video heads make the color-under artifacts less obvi-

ous until you reach successive generations. In fact, the technology used in the current offering of Hi-band formats comes from the 3/4-inch Umatic "direct dub" technology, which itself was an effort to reduce the effects of generational loss when editing or dubbing. It remains to be seen how long it will take before we break free from the analog technology and color under and record video "digitally." For now, the only high-quality options for consumers are the Hi-band formats, which brings me back to the strategic importance of the CCD-VX3.

The Plus and Minus

No matter what format you edit on, always strive to acquire footage of the highest possible quality. The CCD-VX3 delivers 530 lines of resolution; without question the highest resolution available in a consumer unit. This resolution rating is based on luma detail—rating the color information and signal-to-noise ratio is not quite as cut-and-dry. There are certain tradeoffs that have to be made when dealing with light from the original picture image when it has to be "split" into three different paths before recording.

The CCD-VX3 offers near-broadcast signal-to-noise specs under ideal lighting conditions, but in low light



quickly falls below the performance levels of its single-chip brethren. Give this camera enough light and your overall picture fidelity will survive generational loss better than anything else currently available in the consumer marketplace.

The optics were far better than I would have expected in a consumer unit, although not quite up to the specs of a broadcast lens. This is understandable, since broadcast quality optics often cost more than the camera itself. Nonetheless, the 12-to-1 zoom performed well, and variable depth of field adjustments were superb. The zoom lens uses an "in-lens" design for smoother operation and greater zoom precision. The unit uses Sony's proprietary time code (RC, not SMPTE), and offers variable interval (time lapse) recording capability, control-L support, a dandy remote and many other goodies associated with today's top-of-the-line camcorder models.

Test Time

During the short time that I had access to this unit, I put it through extensive audio and video tests, and in all but a few extreme circumstances (mostly low-light conditions or scenes with high red content) it performed extremely well—better, in fact, than an industrial S-VHS three-chip camera with a docking recorder that costs nearly twice as much.

I would be interested to see how the unit stands up to long-term use in a semi-professional application. The plastic housing is lightweight, but seems sturdy. The tape loading mechanism takes some getting used

to, since it can easily jam against your hand if you attempt to eject a tape while using the carry handle.

Sony's use of interfield noise reduction removed most of the luma "grunge" usually seen in Hi-band formats. Since this "gritty" look is attributed mainly to luma noise, and luma detail survives better in successive generations when using Y/C dubbing, it's an obvious advantage to remove it during the actual recording.

The colors were vibrant and survived multiple generations better than the S-VHS unit's recordings of the same subject material both with and without TBC transcoding. I suspect that Sony has optimized the recording bias to its new tape formulation, since it did noticeably better with the supplied HMP-grade tape than with two other brands I tried. That same tape in another Hi-8 camera performed well, but not nearly as well compared to the CCD-VX3. The usual dropouts that I have come to expect from the Hi-8 format were practically non-existent with this new tape formulation.

I decided to give the VX3 the acid test—the red car in bright daylight, which usually demonstrates S-Video's weaknesses amply. To my astonishment, the red, although a bit saturated, wasn't "blurry hot," as it was when shot with my single-chip Hi-8 or the industrial S-VHS camera. Further reading in the VX3's manual revealed the reason for this: the VX3's internal color-noise-reduction circuitry. However, the same however could not be said of reds shot in most indoor-lighting conditions. There was the telltale blurry red hot appearance, with plenty of obvious chroma shift. This was especially disconcerting on flesh tones.

Unless you are shooting in good lighting conditions, light-to-medium skin tones shot indoors will be oversaturated, with the effect amplified in successive generations. Any attempts to adjust the hot reds in the playback by using the VX3's internal color adjustment feature brought undesirable results with other colors. This feature is best used to correct for improper white balance. Given the fact that broadcast cameras also require additional lighting in similar circumstances, this can be forgiven. But be aware that this camera requires plenty of light to deliver the high quality you are paying for.

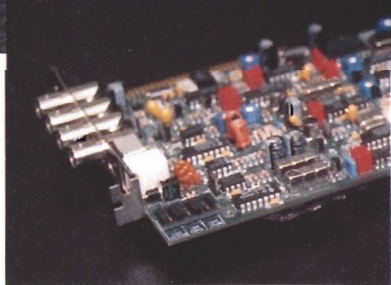
A number of other features that can be controlled manually include: gain, zebra pattern, overexposure indicator (helps adjust exposure), aperture, portrait mode (throws background out of focus) and a host of shutter speeds. Many of these features will make those crossing over from either photographic or broadcast backgrounds feel right at home. I had occasion to show the unit to an associate who summed it up best when he said, "This is a camera that a pro would take on vacation." He's absolutely right.

Let's face it, although there is a growing number of people getting into video as a profit-making enterprise, it's not your everyday Joe that can plunk down the moola for this unit. Sony is aiming directly at videographers who want the features of a pro camera but can't afford their EVW300. They are also going to tempt a lot of S-VHS format devotees into buying the unit for acquisition. Sony may be well poised to win the format wars in the prosumer arena with this unit. Strategically, the launch of this near-broadcast-quality camera may be the first shot of the last battle—unless a comparable S-VHS unit comes soon.

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SONY VIDEO INSTITUTE



by David Duberman

Everyone has heard of the Sony Corporation, right? Sony camcorders, Sony big-screen TVs, Sony Betacam, etc. They sell a significant proportion of the equipment used in professional broadcast applications. It's natural, then, for Sony to create an institution to help train people to use their equipment.

Video is being used by more people working in an increasingly wide range of fields today—from the scientist monitoring ice breakup patterns on frozen rivers to the media manager creating instructional and promotional videos for a large freight company and many others. Things are moving faster in video all the time. Unfortunately, those people without a fundamental understanding of video may be left in the lurch after a sudden devel-

opment. Now there's an answer for those who need to learn more.

The Sony Institute of Applied Video Technology is located in a building at the top of the picturesque hillside campus of the American Film Institute, a film school in Hollywood, CA. Using mostly Sony equipment, classes are taught in a number of different subjects and levels of expertise. Course titles include: You Are the Producer, Location and Advanced Location Lighting, Production Audio for Video, Using Computers in Video, plus many more.

The ABCs Of Video

The course I took, ABCs of Video, was originally called Fundamentals of Technology (it was given to Sony dealers to bring them up to speed on various types of equipment). Sony spent six months compiling material into the course and

the massive textbook. The textbook, unavailable elsewhere, is a take-home package.

While the instructor presents most information verbally, he makes liberal use of a Macintosh-based multimedia system. This system is based around two CRV (component-recording videodisc) units that played high-quality still and moving video as well as audio under the computer's control. Two reasons videodiscs are used is that a freeze-frame can include an entire frame of video—not a single field as with freeze-frame in videotape—and, of course, their random-access instant-search capability.

The multi-media system was primarily used to advance through a series of text-based video "slides" outlining the course material, which was also provided to students in a print-format handout. The instructor regularly cued up graphic slides and video animations to illustrate various points. During the audio presentation, he played parts of a course prerecorded by another instructor.

ABCs of Video teaches the basic technology of the video process to those of us who need this knowledge to do our jobs. Taught by an engineer type who understands this stuff inside out, this course is intense! There's little hands-on experience; mostly, we sat there while the instructor threw technical (but not highly technical) information at us. Most students were more or less ready for it. We were able to absorb a great deal, although some had a bit of trouble due to lack of technical grounding. If you haven't taken a few college-level courses in electronics and wave theory, or it's been a few years since you thought about such things, you probably should brush up before enrolling in this course.

...Continued on Page 78

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Sony Institute Continued From Page 77

Is this course for you? Well, do you use video in your job or have a need to understand the basic technology (without getting too far into theory)? Are you a video producer or manager who needs to know more about what your camera people and engineers are doing? Do you sell equipment to professional videographers? One way to determine whether you need the course is to check the agenda from the catalog:

- What is the TV/Video Signal?
- What is the Audio Signal?
- Videotape formats
- Audio/Video equipment and connectors
- Digital and analog audio/video
- Setting up a color video monitor
- Video transmission systems
- NTSC, PAL, SECAM and other video standards
- Video Production

That roughly describes the order in which we covered those topics. Of course, some received more time than others.

Meet You At The Pickup Point

The introductory section on the signal, since it serves as the basis of understanding for the rest of the course, was covered at length (and deservedly so). The signal originates at the video pickup, so we spent a good deal of time learning this area, too.

The pickup generates the video signal, which passes through various types of monitors and control systems. I've been wondering about waveform/vectorscopes since I've heard of them, and this course helped me finally understand their functions. The waveform monitor's oscilloscope lets you see the entire video signal wave as two separate fields (plus a burst signal which carries the color information) and adjust it using standard signals (e.g. colorbars) as a

reference. You can also zoom in to fine-tune a single scan line—although you're not seeing the actual video. The vectorscope provides a statistical readout of the video signal's color content, allowing an adjustment of color against a standard.

The next logical step in the chain is recording, whose technology we explored in depth. This is where things really start to get noisy. Just as trouble is an inescapable part of life, so "noise" added by processing is an inevitable factor of the video signal. In fact, a major portion of a video engineer's working life can be spent minimizing noise's effects. The course covers various types of noise, their effects, and ways of managing the dratted stuff. This ties directly into a key concept of the course: Quality depends on tape format, camera type, light levels, and operator technique. It's important to realize that in editing video, unlike film, you're actually copying a video signal from one tape to another. Some processes can cause several generational losses from a single edit, so maintaining optimal signal quality (as much as possible of the original information received by the pickup,

limeter single-lens reflex and produces sharp floppy-disk-based images compatible with any video equipment. We took turns shooting each other with the camera, then hooked up a system that let us examine our exposures on a monitor and select one for hard-copy output on a video printer. Once the price of this system comes down, it will replace silver photography for many applications.

It's A Wrap

The class was small—only eight students—which allowed for a good deal of individual attention. The instructor was friendly and helpful and entertained as many questions as possible without letting things stray too far from the topic at hand. While discussing theory, he kept the discussion grounded in the real world showing us how knowledge can be applied to practice, such as in the choice of monitors. He gave regular quizzes to reinforce key information; however, these were ungraded and we got to keep them.

The information given in this course is not up-to-the-minute—such state-of-the-art developments as the Toaster, HDTV and computer-based non-linear

"...this course is intense!"

with a minimum of distortion or noise introduced by processing) is crucial. In the long run, quality comes down to "you get what you pay for." But within various budget categories, there's a lot you can do to optimize your limits. It helps to understand the fundamentals this course gives you if you're going to try.

Y/C Made Easy

Did you know that Y/C is not component video? (Y/C refers to the type of signal used by S-VHS and Hi-8 video equipment in which luminance, or Y, is separated from chrominance [color], or C.) That's because the colors are combined in a single signal. In true component video, used by equipment at levels of Betacam, MII and up, color is separated into three signals called Y, R-Y, and B-Y. The course explains why and how this occurs—which is actually pretty interesting!

When component color signals are combined into the color part of the Y/C signal, they are recorded with a compression technique called "color under." This causes noise to be introduced at the same time that color information is lost. This is why professional editing is almost always done at the component level. But it's not cheap. The hardware currently under development at Smith Audio Visual (makers of Y/C Plus) to give the Toaster true component output will retail for over \$6,000!

Give Me More

You've probably heard of proc (processing) amps in conjunction with TBCs; this course explains both. You learn how types of camera pickups and optical systems differ. The course also covers audio for video in depth: different types of microphones, recording equipment and tapes, the various types of audio signals recorded (such as time code) and so on. There's a good deal more to the course, including presentation systems, a discussion of digital technology (still cost-prohibitive for most of us) hands-on demonstrations of tape dubbing (copying) and Sony's electronic Mavica camera. This isn't the low-resolution consumer Mavica you may be familiar with. It's a \$7,000 still-video camera that looks like a regular 35-mil-

limeter single-lens reflex and produces sharp floppy-disk-based images compatible with any video equipment. We took turns shooting each other with the camera, then hooked up a system that let us examine our exposures on a monitor and select one for hard-copy output on a video printer. Once the price of this system comes down, it will replace silver photography for many applications.

A few words about the learning environment are in order. This training course takes place in Hollywood—at the heart of Los Angeles, one of the most exciting cities in the world. However, you're there to learn a good deal of information, which requires a clear mind and lots of sleep. If you're a light sleeper, don't go to one of the hotels near freeways. And if you're so inclined, avoid the temptation to be led astray by Los Angeles nightlife. Stay in or go to an evening movie and pack in early. I was lucky, in a way; it rained the whole time I was there.

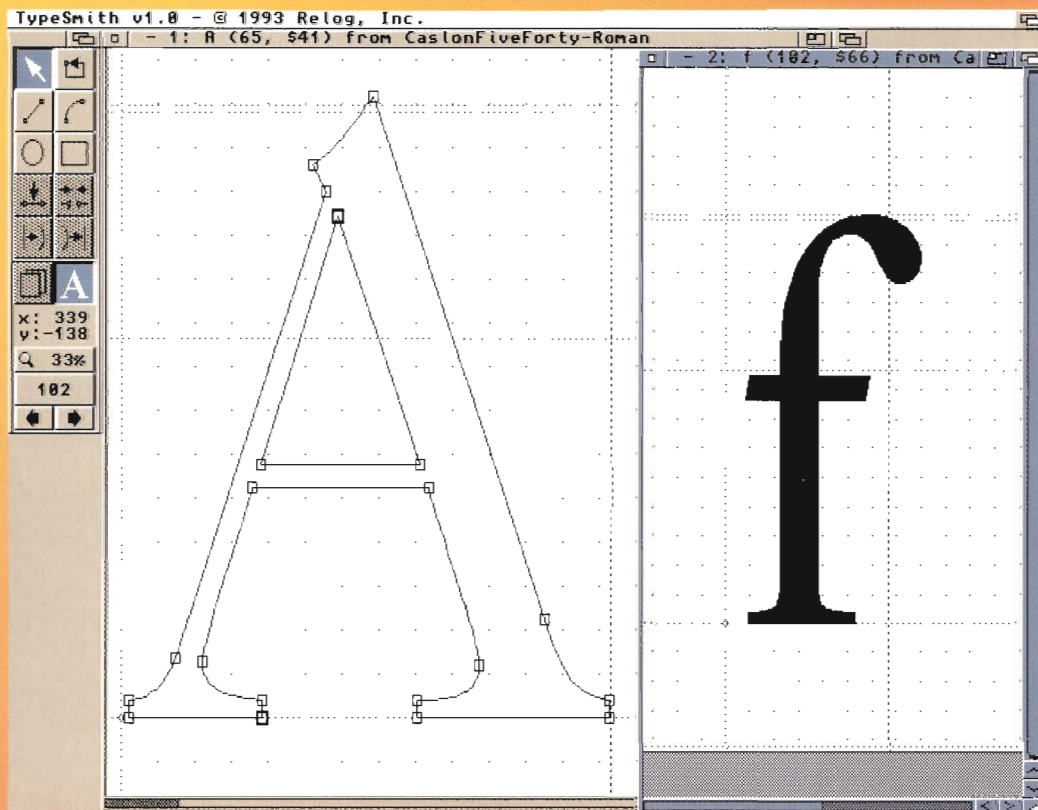
Tuition fees range from \$600 for a two-day script-writing class to \$1,700 for the five-day In-depth Operator Training course. Some of the classes are also given at "road" locations in Atlanta, Detroit, Houston, Minneapolis, Pittsburgh and other major cities. Classes start promptly at 8:30 a.m. and end at 5:00 p.m., with several short breaks plus 90 minutes for lunch. The Sony Institute provides plenty of fresh fruit, fruit drinks, and coffee all day, plus snacks in the afternoon. You're on your own for lunch. The campus isn't within walking distance of any commercial eateries, so if you're without a car, plan on hooking up with a classmate, spending a small fortune on cabs or packing lunch.

For a free catalog and schedule of upcoming classes, write to: The Sony Institute of Applied Video Technology, Sony Corporation of America, 2021 North Western Avenue, P.O. Box 29906, Hollywood, CA 90029.

YIU

David Duberman is Executive Editor of Video Toaster User magazine and author of a computer graphics book.

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er 3

Toasted Fonts

An overview of font options

by Scott Gillies

Back when our ancestors were hanging around in caves and hunting mastodon in their spare time, written communication was accomplished by drawing little stick men on stone

walls with charcoal or berries or whatever else happened to stick to a rock. Shortly thereafter, man invented television. Smearing berries and charcoal on TV screens didn't seem to do the trick, so necessity gave birth to another invention—the Video Toaster. Now, while the Toaster is a great tool for making stick men, spears and little saber-tooth tigers, most of us prefer to use letters and numbers to get our message across. But just as there's more than one way to skin a mastodon, there's definitely more than one way to put text onscreen.

Some obvious choices you have to make are to determine the type style you want, the text color, the letter size and the word placement. But those are the pure design decisions—your envisionment of the end product. When working with the Toaster you must think about where all of these letters are going to come from and which of the tools at your disposal will deliver the results you are looking for.

The first thing to realize is that Toaster fonts come in three main forms. The first is the native Amiga font, a.k.a. the Amiga bitmap font. This font type was designed for use with the first Amigas and has remained unchanged since then. The second type is the ToasterCG font, which will only work in ToasterCG. The third is the LightWave font, usable only in LightWave 3D. Let's examine each font type and discuss how they work and where to find them.

The Amiga Bitmap Font

The “plain vanilla” Amiga font, sometimes referred to as a “system font,” is certainly the most versatile of the three fonts at your disposal. These fonts can be used by hundreds of Amiga programs other than the Toaster. The Amiga bitmap fonts usually reside in the system's “fonts:” directory. Although you can put them into any directory you like, this is where most programs look first.

You can probably find all of the Amiga bitmap fonts you need in the public domain, either by modem or mail order. Their widespread use makes them the easiest to find and the cheapest to buy. There are also many commercial font collections available, some of which are geared specifically for video applications. Two of the more comprehensive collections are *Font City* (Allied Studios) and *Masterpiece Professional Fonts* (ARock Software). Collections such as these come on multiple disk sets,

Toasted Fonts

ABCDEFGG abcdefg 123456

ABCDE 1234567

ABCDEFGG abcdefg 1234567

Sample Amiga bitmap fonts from ARock's Masterpiece Antialiased Font Collection. These are color fonts that use single pixels in various shades of gray around the edges to minimize jaggedness. From top to bottom is a sans-serif font and two serif fonts. This screen was created with Deluxe Paint IV.

ABCDEabcde1234

ABCDEabcde1234

ABCDEABCDE1234

Three examples of the colorful Kara Toaster fonts, as used in ToasterCG. From top to bottom, the fonts are Kara Wood 76-point, Kara Chrome Serif 76-point, and Kara Gothic Serif Gold 65-point.

requiring you to copy the fonts from the floppies onto your hard drive. An installation utility is often included to automate the copying process. When choosing a bitmap font, always remember to look for the largest variety of sizes possible. If the type comes in only one size, make sure it is large (100 points or larger) as it is better to resize a font down than up. Enlarging a small font results in a ragged, blocky-looking finished product.

The only Toaster program that lets you use an Amiga bitmap font is ToasterPaint. When you access the text menu and select

usually the name of the typeface followed by a period, then the height in scanlines of the font itself. It is important to note that, unlike Amiga system fonts, the name of a ToasterCG font doesn't necessarily have anything to do with the font it describes. You could rename CommonThin.24 as FunkyFont.75, but the font's shape and size wouldn't change. ToasterCG would, however, still load the font into your book and it would look and act as it did before you changed its name.

There are two kinds of ToasterCG fonts: the simple one-color version and the

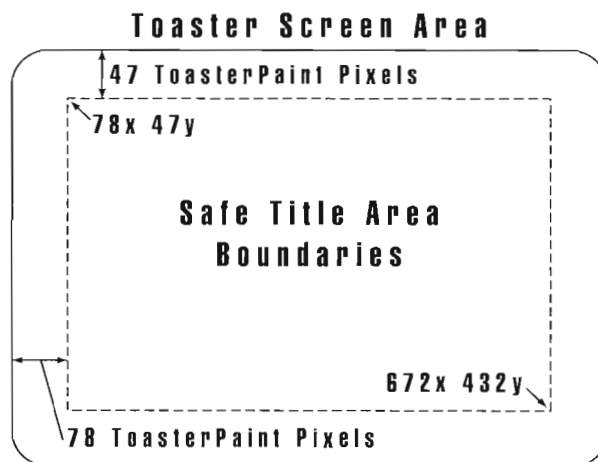


Figure 1

the typeface you want to use, you are presented with a menu of all the Amiga system fonts in your "fonts:" directory. You should remember to pay special attention to the antialiasing toggle buttons when rendering text in ToasterPaint—turning the antialiasing on also stretches the characters vertically, often creating undesirable results. However, leaving antialiasing turned off in ToasterPaint gives the text a "jagged" look. A good solution to this dilemma is to avoid using ToasterPaint for text altogether. Use the "Text Visual" operator in ASDG's *Art Department Professional* (ADPro) version 2 or higher. With its advanced antialiasing, embossing, extruding and transparency features, ADPro beats ToasterPaint hands down at text rendering. At least until the next ToasterPaint upgrade, that is.

ToasterCG Fonts

ToasterCG is the dedicated titler that lives inside the Toaster. Its fonts are not compatible with the standard Amiga system fonts and cannot be used anywhere else. Like the Amiga system fonts, ToasterCG fonts are bitmap-based. They reside in the Toasterfonts directory, which must be in the same drawer that holds the rest of the Toaster's programs. It's important to make note of this limitation as it means you cannot directly access ToasterCG fonts on any additional drives you might have, such as extra hard drives, floppy disks or Syquest drives. Each size of each typeface has its own name, which is

more complex multicolored "Chroma" font. There are several differences between these two fonts that you should keep in mind. First, the multicolored fonts take up much more space than their monochrome counterparts, both on your hard drive and in the computer's memory. If you run into memory problems, you should split your tiling session into two parts. Make a separate CG book containing just the monochrome fonts to be used in your project. Then make a second book for your multicolored fonts, erasing all monochrome fonts which aren't being used on the same pages as multicolored fonts. By putting the two font types in separate books you should keep your memory requirements to a minimum. The font type you decide to use in ToasterCG also determines whether or not you can use the outlining and drop-shadow functions. Multicolored fonts allow neither.

As with Amiga bitmap fonts, there are third-party packages available to add to your ToasterCG font collection. Before you go out and buy the first package you can lay your hands on, it's a good idea to first assess your needs.

If you only use ToasterCG occasionally and find the font selection that came with your Toaster to be adequate, but sometimes need something more ornate, look for one of the "fancy" packages, such as Allied Studios' *Variety Pack* or the Decorative fonts from Integrated Graphic Media's *Professional ToasterFonts* series.

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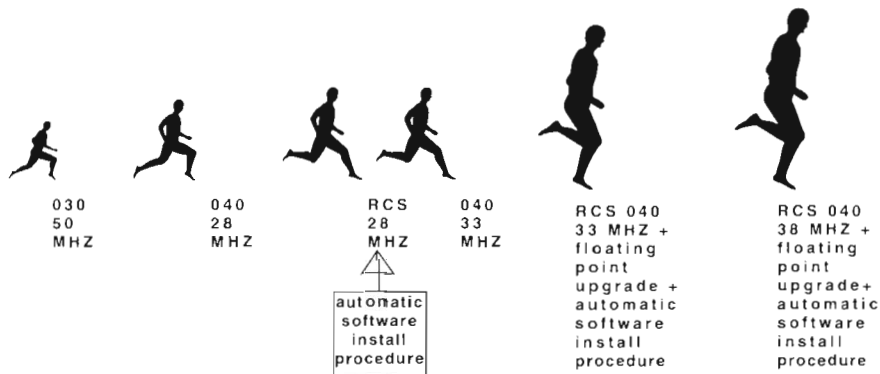
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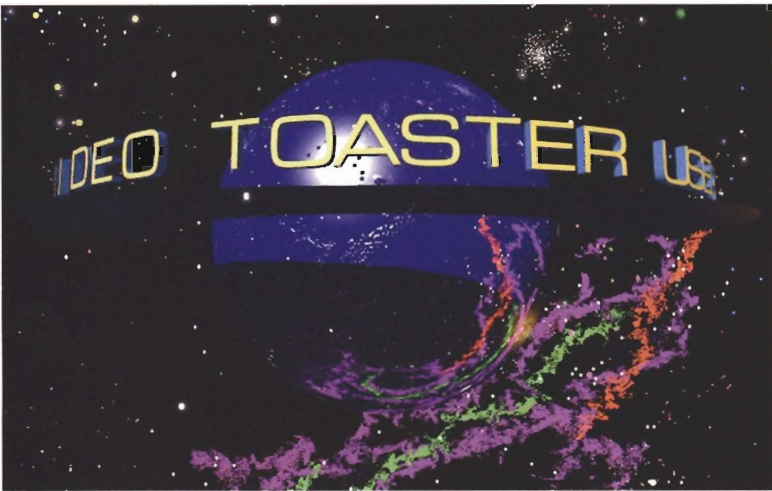
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Toasted Fonts



A typical use of 3D text in LightWave. The letters are from Unili Graphics' Microbes 3D font. The "Saturn" model was created in a few minutes with Modeler, and the background/reflected image was drawn with Deluxe Paint IV. The letters were arranged automatically with MD Graphix' Font Flyer, reviewed in *Video Toaster User*, February/March 1993. The program has been updated to work well one-meter fonts.

Some of the more "traditional" font packages consist of fonts which vary only slightly from each other and from the fonts NewTek includes with the Toaster.

If you make videos in a language other than English, you should consider either Integrated Graphic Media's *Foreign* series or Classic Concepts' *EuroFonts* Video package. Each of these comes with the special characters used in foreign text. If you are interested in adding multicolored fonts to your Toaster, then the *Kara Fonts* line is the best-looking. Not only are the fonts well-crafted, they also come in a compressed form to offset their considerable size. The installation program that comes with each set of fonts gives you the choice of either decompressing the files onto the hard drive or leaving them as they are, to be decompressed later when you need them.

If you're budget conscious (and who isn't?), you might want to check out pages 97 and 98 in the December 1992/January 1993 issue of *Video Toaster User* for my step-by-step guide to creating monochrome ToasterCG fonts from either Amiga bitmap fonts or PostScript fonts. You'll be pleasantly surprised at the quality and variety of fonts you can come up with and the money you will save.

LightWave Fonts

LightWave is a part of the Toaster that

many users do not associate with text, but it can be a powerful tool for putting words on the screen. Fonts for LightWave differ from ToasterCG fonts or Amiga bitmap fonts in both form and usage. The font itself consists of a collection of individual LightWave objects, with each object containing a single letter, number or symbol. Unlike ToasterCG or other programs, you cannot simply use the keyboard to type text into LightWave. You must piece the words together manually, loading each character one at a time. This can be done in LightWave Layout, but it's preferable to create each word in Modeler as a separate object (unless you want to move a word's letters individually—careful planning is the key here).

The best way to use text in LightWave is to purchase one of the several 3D font collections available. Quality is a consideration, more so than when buying traditional font packages. Since LightWave objects are made up of straight lines, the only way to make a curve is to bunch together a large number of short line segments. A 3D character's quality, therefore, is determined by the number of points used to create the outline—an "S" should contain far more points than a "L" due to its curved shape.

Of the fonts currently available, the *Broadcast 3D* series from Unili Graphics and the *Pop Arts 3D Fonts* collection have

...Continued on Page 86



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Don't you wish you could set up a Video Toaster effect exactly as you had earlier?

DejaVue is an effects memory subsystem that eases the operation of the NewTek Video Toaster for both stand alone and large system applications. With **DejaVue**, Toaster users can "snapshot" the Toaster panel settings, storing the values into memory registers. Later, when the exact same effect is needed again, a register recall restores the same effect to the Video Toaster.

A separate control panel gives the on-air operator simplified, yet powerful, control over Video Toaster actions. For those using the Video Toaster as a workstation ahead of a high-end video switcher, the **DejaVue** remote panel provides the control essence required in busy control rooms. For production use, the **DejaVue** allows many effects to be pre-programmed, ready for rapid recall during a fast-paced production. Complex effects, such as a sized and positioned image in a partial wipe, can be performed easily and repeatedly.

While the mouse- and keyboard-driven control is effective for setting up Toaster effects, it can also be tedious and error prone to recreate an effect exactly as it was previously used. The **DejaVue** remedies this problem, giving the Toaster User the additional luxury of trying many different effects quickly.

The **DejaVue** control panel plugs into the Commodore Amiga's second game port, with a passthrough connector for other GPI devices. The software portion of **DejaVue** installs easily, creating its own necessary directory and data structures.

PreVue Technologies

(Formerly Cardinal Video Products)

P.O. Box 2617

Grass Valley, CA 95945

916-477-2905

916-272-1528 fax

\$498



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

Toasted Fonts Continued from Page 84

the smoothest edges, due to their generous use of points. Each font is already extruded in three dimensions for you, with separate surface names given to the front, back and sides. While ARock's *Masterpiece* series has a larger selection of typefaces, their fonts are all 2D (not extruded) and not as well constructed as the other two, a difference clearly visible when viewing two similar typefaces side by side. Keep in mind that these differences are most noticeable when the letters get closer to LightWave's camera, so in some cases you might not need the extra quality.

You also have the option of using Modeler to alter the text to your specifications, making flexibility an advantage LightWave fonts hold over their bitmapped counterparts. Past frustration has also taught me to examine the texture settings I use on my LightWave fonts—trying to turn smoothing on for the flat fronts and backs of a font can cause hideous results. Be sure to turn smoothing on only for the sides!

Some Tips On Font Usage

Now that you've stuffed your hard drive full of fonts of all descriptions, what do you do with them? The foremost design rule applies, and it should be etched into the front of every Toaster system: "Moderation is the key." The danger in having so many different type styles at your fingertips is the temptation to hurl all of them into one 10-minute video. All you have to do is look in the back of some magazines and see someone use 10 different typefaces in a two-by-three-inch advertisement to snap yourself out of it.

Keep the number of fonts in each production to a minimum. Find a style and stick to it, varying your tone by using different thickness or sizes. When you move on to a new show, you can go for a new look. But make sure the look fits the show's content—don't identify the president of a major bank with the ChromaCrayons font if you have any desire to get repeat business. Apply a system of logic when choosing your fonts and your show will reflect it.

While moderation may be the key to design, legibility is the key to video titling. When creating titles you must always remember what your final output format is going to be. The tiny 20-line font that looks fine on your program monitor will end up being a lovely illegible blob on the final VHS copies.

Also be careful about using highly saturated colors (especially red) which tend to bleed when dubbed a couple of generations. If in doubt, do a test first—take a sample of the text you want to use a few generations down and watch it on a regular consumer television screen.

Legibility also includes visibility, so make sure all of your text falls within what is known as the "safe title area." Some television screens show less of the complete image than others, so the professionals decided on a set limit which can safely be assumed visible on most televisions. This is crucial when putting text onscreen using LightWave and when determining the left and right margins in ToasterCG. To check safe title on your system, you can either buy an external safe title generator or make small marks on your screen with a dry erase marker. If you plan to use the "low tech" marker method, draw a box in ToasterPaint with the corners X:78, Y:47 and X:672, Y:432 and use the rendered image to mark the screen. This is a rough guide, but it should be close enough for most purposes. See Figure 1 for an idea of where the safe title area lies in relation to the edge of the Toaster's total display area.

Power Talk

The Toaster has to be one of the most powerful machines for putting text on a video screen, due largely to its variety of methods. Whether you decide to say it with some flashy, flying, 3D text, or a simple classic CG key,

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really depends on what you want to say. And while some still believe that the medium is the message, what you're saying will always be more important than how you say it.

Now I think I'll go call NewTek and see if they're going to use my idea for a simulated charcoal and berry smearing effect in the next generation of Toasterpaint. Or how about mastodon clip art?

Scott Gillies is an Editor/Animator working with The McLellan Group in Toronto, Ontario, Canada. His set of 68 Postscript typefaces for conversion to ToasterCG fonts (from the December 1992/January 1993 issue of Video Toaster User) is still available. Send him a check or money order for \$15.00 to:

*c/o Scott Gillies
119 Spadina Ave. Suite 1105
Toronto, Ontario, Canada
M5V 2L1*

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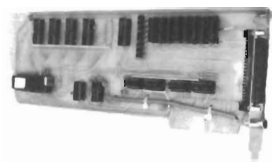
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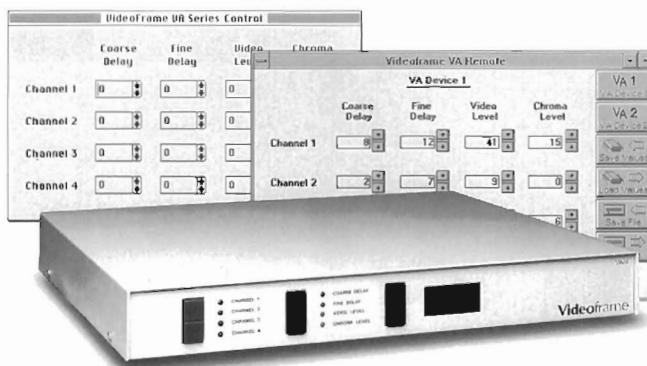


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LEE STRANAHAN'S TOASTERPAINT STUDIO

1. Enter ToasterPaint and draw a dark gray bar along the bottom of the screen. The dark gray in TPaint's color palette works well.

2. Now draw thinner rectangles at the top and bottom of the bar with a lighter shade of gray. Make sure you pick this color from TPaint's normal palette of 16 colors. Light gray is fourth from the right. (For the purposes of this tutorial, we exaggerated the pictures so elements are easier to see. Normally, the bar and rectangles are thinner, but we'll leave that up to you.)

3. Go to the Palette panel and pick a fairly muddy yellow. Go to the Transparency and Warping Control panel and set up your sliders as shown in Figure 1. The center slider should be at 50%, and the edge slider at 100%. Choose the Vertical Hotspot and position the bar at the far left. Now select the Flood Fill tool and click in the top light gray bar. This fills the bar with a gold color that increases in intensity from left to right.

Welcome to the studio! This column covers ToasterPaint technique by giving you examples of useful TPaint graphics and taking you step-by-step through their creation. I'll try to be complete in these tutorials, but this material is *not* intended for novices—you should be familiar with basic TPaint use. If you see something confusing here, don't hesitate to use the Toaster manual.

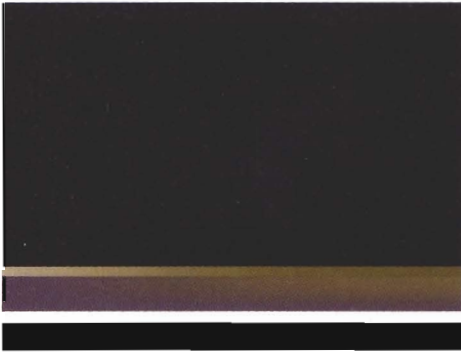
Re: Lower Thirds

Let's talk about your lower thirds. Are you getting bored with your lower thirds? Before you jump to any obscene conclusions, remember that a lower third is simply a graphic keyed on the lower third of the screen. They are normally used as backgrounds for text that identify something—people or places, for example.

The standard Toaster lower third uses the CG's graphic separator line. This can be handy in some cases, but it's not usually used for broadcast. In this tutorial, we'll emulate the graphic look of a well-known 24-hour cable news channel that will rename nameless. (Notice I said channel, not network. You figure it out.)



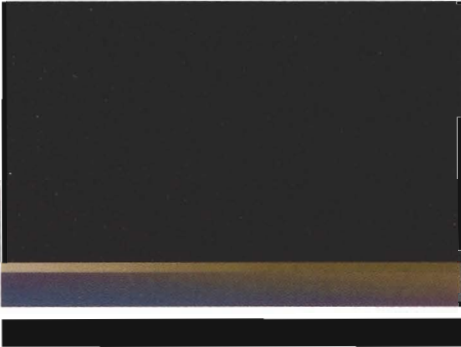
Figure 1



4. Now change your sliders as shown in Figure 2—the center slider at 50%, the edge slider at 0% and the Point Hotspot in the upper right-hand corner. Click in the large dark gray rectangle to fill it with color. Now we're halfway home.



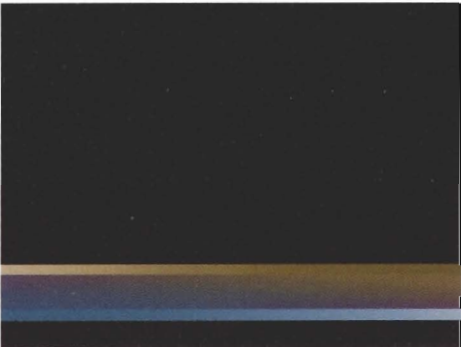
Figure 2



5. This next step requires caution; we're going to use the Toaster's Redo function and don't want to draw anything on the screen. Pick a light shade of blue and then move the hotspot to the lower left-hand corner as shown in Figure 3. Now either click on the Redo button or press the a key.



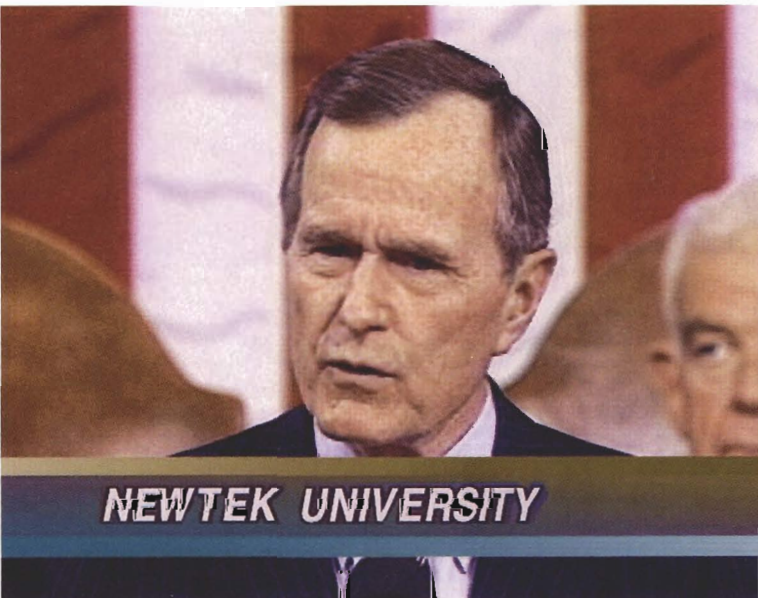
Figure 3



6. Now set the sliders to the exact opposite of Figure 1. Move your sliders so they match Figure 4—edge at 50%, center at 100% and the Vertical Hotspot slider all the way to the left. Flood fill the light gray rectangle at the bottom of the bar.



Figure 4



You're finished! Now put CG text over the bar, and you've got a great key element! No need for boring lower thirds ever again. Feel free to experiment with this basic template—play with different colors, or change the sizes and shapes of the bars. As this example proves, television can be your best tutor.



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AG-1270

VHS Video Cassette Recorder

- Super 4 Head system - field still, noiseless and jitter free double speed playback and frame advance
- Quasi S-VHS playback - permits playback of S-VHS tapes at standard VHS resolution
- Auto Repeat - video end or tape end, Auto segment repeat
- Quick Play - less than 2 seconds from stop to play
- 181-channel cable compatible tuner, 1-month 4-event timer with calendar
- Automatic head cleaner, Digital auto tracking, Auto digital picture (adjusts resolution vs. tape noise)

AG-1740

Hi-Fi VHS Video Cassette Recorder

- Has all the features of AG-1270 (see above) *Plus* - Superb Hi-Fi stereo sound system with a dynamic range of more than 90dB.

AG-5700

S-VHS Hi-Fi RS-232 Controllable VCR

- Record and playback in the S-VHS format, delivering 400 lines of horizontal resolution and faithful image reproduction.
- Amorphous video heads which are clearly superior to that of conventional ferrite heads. They are better because their magnetizing strength is much greater, yielding a higher S/N ratio.
- Hi-Fi stereo sound system with high speed limiter circuit linear band pass filter, and a structure that dampers vibration all combining to deliver impeccable sound quality. Features a frequency response of 20 Hz to 20 kHz and a dynamic range of 90dB. Also has a linear audio track that allows audio dubbing or variation.
- Separate Hi-Fi (Ch.1/Ch.2) audio recording level controls with display. There is also a headphone output with volume control.
- Built-in RS-232 provides machine control of playback, recording and editing functions from a computer. You can use the power of your computer (optional software) to assemble hundreds of scenes, create edit decision lists, do complex editing jobs.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recorded material ends. Allows the AG-5700 to be used in showrooms, lobbies, or any in-store video display.
- For unattended recording there is a Sensor Recording function. When a video signal is detected the power is automatically switched on and the AG-5700 begins recording.
- If you need to do a presentation with video the AG-5700 is ready to go. It weighs less than 13 lbs. is extremely compact and has a built-in carrying handle.
- User friendly design features record, play, and stop switches that are well illuminated during operation.

WJ-AVE5/WJ-MX12

Digital A/V Mixers

To help clear up the confusion about the WJ-AVE5 and WJ-MX12, here is the definitive comparison chart* to help you make your choice.

Identical Features:

- **Built-in Digital Frame Synchronizer** - The built-in digital frame synchronizer of the WJ-AVE5 and WJ-MX12 allows effective video mixing of any two NTSC format video sources, such as VCRs, video cameras and TV tuners - with no need for time base correction. This includes mixing of composite and S-video signals.
- **Audio Mixing** - They both have a built-in audio mixer for four (4) inputs: Source 1 (L/R), Source 2 (L/R), Auxiliary (L/R), and Microphone. The easy-to-read audio level meter ensures easy monitoring.
- **Superimposition Function** - For superimposition effects you can select any of three video inputs - Source 1, Source 2, External Camera. Special effects such as shadowing and edging can be applied to the superimposed tiles, and eight (8) title colors are simply selectable - white, yellow, cyan, green, magenta, red, blue, black. In addition, title colors and background pictures can be reversed.

Side by side comparison of similar features:

	WJ-AVE5	WJ-MX12
Frame Synchronizer	A & B Bus	A Bus Only
Freeze Frame (Still)	Yes	Yes
Strobe Effect (Intervals)	0.2-1 Sec.	0.2-2 Sec.
Paint	4 Levels	6 Levels
Mosaic	4 Levels	8 Levels
Negative/Positive	-	Yes
Programmable Effects	-	Yes
Resolution (S-video)	370 Lines	500 Lines
S/N Ratio (S-video)	46 dB	55dB
Memory Type	Field	Frame
Color Corrector	-	Yes
Wipe Patterns	98	17
Picture in Picture	Yes	-
Auto Take	-	Yes
Auto Fade	-	Yes
Master Fade	Video, Titles Only	Video, Audio, Titles
Pre-set Fade	-	10
& Wipe Speeds	-	Comb Filter
Y/C Separation	Low-Pass Filter	Sharp/Soft
Wipe Edge	Sharp	Yes
Headphone Jack	-	Yes
External Sync	-	Yes
Connectors	RCA	BNC
Operational Display	Consumer	Pro
Warranty (Parts)	1 Year	1 Year
Warranty (Labor)	90 Days	1 Year
LIST PRICE	\$2,000	\$3,000
B&H PRICE	CALL	CALL

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S-VHS Hi-Fi Editing VCR

- Playback and record in S-VHS, which delivers 400 lines of horizontal resolution and exceptionally detailed images.
- Uses Amorphous video heads which are clearly superior to that of conventional ferrite heads because the magnetizing strength of the amorphous head is much greater. The Amorphous video heads deliver rich, vibrant color reproduction and a high S/N ratio.
- Built-in Digital Time Base Corrector effectively eliminates jitter and distortion. Playback is high quality, stable and with natural colors.
- Built-in the circuitry is a digital filter which helps the AG-1970 achieve even more accurate Y/C separation. Also a noise filter is included in the circuitry.
- Features Hi-Fi stereo sound with a frequency response from 20Hz to 20,000 Hz and a 90 dB dynamic range. Besides hearing CD quality audio the AG-1970 also has stereo recording level control, headphone monitor terminal and mic input terminal.
- Does assemble edit, video insert and audio dub. Flying erase head for smooth, clean, seamless edits. 5-pin edit terminal makes it easy to set up an editing system.
- Jog/Shuttle Dial for varied playback from slow motion to high-speed search (shuttle) and frame-by-frame picture control in forward and reverse (Jog).
- Unlike the AG-1960 the AG-1970 outputs the audio track during search operations for cueing and quick confirmation of audio recording.
- What makes the AG-1970 the perfect editing VCR? The advanced dual-loading mechanism features a quick response time, exceptional tape protection, remarkable tape control accuracy - all make for outstanding editing precision and ease.
- Automatic head cleaner removes dust and other particles from the heads to help maintain optimum performance.

WJ-MX50

Digital A/V Mixer



- Four input switcher and any two sources can be routed to the program busses
- Two-channel digital frame synchronization permits special effects in each of the A/B busses.
- Combination of 7 basic patterns and other effects creates 287 wipe patterns.
- Digital effects including strobe, still, mosaic, negative/positive, paint, monochrome, strobe, trail, and AV synchro
- Joystick positioner allows moving wipe location.
- "Scene Grabber" makes it possible to move a pattern, upholding the initially trimmed-in picture integrity.
- External edit control input for RS-232 or RS-422 serial controls. Also has GR input.
- Non Additive Mix (NAM): selects between A and B sources, passing only the signal with the highest luminance value.
- Fade-in and fade-out video; audio, titles individually or synchronously faded.
- Down stream keyer with selectable sources from character generator or external camera.
- Incorporates 8 separate memories that enable virtually instant recall of frequently used effects.
- Audio mixing capability of 5 sources with 5 audio level adjustments.

7000 SERIES EDIT SYSTEM

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AG-7650
S-VHS SOURCE PLAYER

AG-7750
MULTI-EVENT EDIT CONTROLLER

AG-7750
S-VHS EDITING VCR

The Panasonic AG-7650 S-VHS source player and AG-7750 Editing VCR share many professional features to deliver outstanding S-VHS picture quality, editing accuracy, versatility and reliability.

AG-7650 & 7750 Features:

- Built-in Digital TBC/DNR (Time Base Corrector/Digital Noise Reduction) eliminates even small amounts of jitter, skew and color blurring. The precise time base correction is invaluable for A/B-roll editing and helps maintain high picture quality through multiple tape generations.
- They have laminated amorphous video heads which have higher magnetic circuitry than conventional ferrite heads. This provides for superior color reproduction and minimizes frictional noise that causes color fogging.
- A "logical" comb filter with advanced 3-line delay system enables a huge improvement in crosstalk cancellation during playback and recording.
- High-precision aluminum die-cast chassis and extra large impedance roller is used to assure exceptionally stable transport with very low jitter.
- Advanced AI capacitor servo control featuring a capacitor spindle three times larger than conventional. This provides for high speed search at 3X normal speed.
- Both have RS-422A 9-pin serial interface - the standard control protocol for professional broadcast components. This allows compatibility between other serial control systems. They also have 34-pin parallel connectors to maintain compatibility with older Panasonic components.
- Equipped with two Hi-Fi stereo audio channels plus two linear audio channels with Dolby NR.
- Both use 3-pin XLR audio jacks for increased reliability. The AG-7750 features a 3-position input level selector to assure high-quality sound during recording.
- Professional 7-pin dub input and outputs keep the quality of your video during editing and through multiple generations.
- Optional AG-F700 SMPTE time code reader/generator card lets you perform LTC/VITC (Longitudinal/Vertical Interval) recording and playback for highest precision editing.

AG-7750 Features:

- Advanced design for easy control and smooth editing results, separate jog/shuttle dial and easy to read adjustable display.
- Multi-event editing - stores up to 128 single-cut events in memory for automatic editing.
- Built-in RS-422A 9-pin serial interface board lets it control almost any professional edit system.
- Split audio editing capability. Lets you enter audio and video edit points separately.
- Built-in GPI trigger allows centralized control of total system operation.

AG-W1 Universal VCR

To break down the final barriers preventing worldwide communication through video, Panasonic presents the AG-W1 Universal VCR, which can record and play back video tapes in any TV broadcasting system - NTSC, PAL, or SECAM - without costly system conversion.

Features:

- Full 7 system digital standards conversion
- Videotapes recorded in any TV broadcasting system in the world can be played back on any video monitor
- Operates virtually anywhere in the world on a 110-127/220-240 volt AC, 50-60 Hz power source
- Recording is possible in any TV broadcasting system in the world
- Development of a dedicated field memory chip and control LSI has enabled compact, lightweight, and inexpensive conversion circuitry.
- Recording and playback in VHS Hi-Fi mode
- The AG-W1 is VHS, but its S-VHS Quasi Playback function also lets you play back S-VHS tapes in both NTSC and PAL systems
- Laminated Amorphous Heads minimizes frictional noise that causes color fogging and flicker and delivers high picture quality during both recording and playback

PT-30L

100" Diagonal LCD Color Video Projector

- Huge 100" diagonal projection size gives you all the excitement of a large picture without installation.
- Superb picture quality with three 3" Twin TFT (Thin Film Transistor) Active Matrix LCD panels. Each panel contains 89,505 pixels for a total of 268,515 for achieving ultra-fine detail and high contrast of 100:1. Even with 100" screen you get vivid colors, exceptional brightness, and sharp clear images.
- Choose from projection sizes ranging from 20" (at 6.6 feet) to 100" (at 15.1 feet). For extra flexibility there is a built-in zoom lens that lets you quickly reduce projection size by up to half without moving the projector.
- Combining the beams from the three LCD panels internally the PT-30L achieves "convergence-free" projection.
- Compact, lightweight (30 lbs.) and portable (built-in handle) the PT-30L is the ideal projector for educational and business applications. Also, its compact size and projection size adjustment contribute to its easy setup.
- Features S-video and two composite (BNC) inputs plus fine adjustment control of Picture, Bright, Color, Tint, and Sharpness.
- To avoid video "noise" there is a Blue Screen function switch to produce a blue display when there is no input of video signal.
- For rear projection applications there is a Reverse button which provides a mirror image projection so that the picture looks correctly oriented when viewed on a rear projection screen.
- Attached adjuster lets you change angle of the PT-30L so that it is level or tilted as desired.

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EP-60 COLOR VIDEO PRINTER

The EP-60 provides outstanding color quality using 256 photostatic shades of yellow, magenta and cyan to print nearly 16,783,000 different color tones. Advanced circuitry optimizes picture sharpness and proprietary Adaptive Contrast technology enables outstanding accuracy in reproducing skin tones. Make one of the spot high quality color prints from your TV, VCR, computer or scanner.

Features:

- **Multipicture Print** - This function gives you prints divided into 4, 9, 16 or 25 squares - with the capability of reproducing a different image in each square.
- **Strobe Print** - This function prints successive images to capture movement in a sequence dividing the print into 4, 9, 16 or 25 squares.
- **Real Print** - The Real Print function gives you one normal size print plus a 10x10 normal size print of a different image in the bottom right-hand corner.
- **Card-sized (Split) Print** - This Split Print function divides the print down the center for two duplicate card-sized prints. This can also be used to crop in landscape format shots into the portrait format.
- **Zoom Print** - With this convenient function you can enlarge any part of an image four times and print the enlarged detail.
- **Parallel Control Port** - The 34-pin parallel connector maintains compatibility with many existing 14-pin parallel controllers. This makes it easy to integrate the EP-60 into your computer type systems.
- **Superimposed** - Using the EP-60 with the optional VCR-C65 Character Generator lets you add titles to your prints.
- **Versatile System Connectivity** - The multiplex connection facilities of the EP-60 include composite BNC, analog RGB and S-video inputs for optimal clear image reproduction from a variety of sources.
- **Automatic paper feed**
- **Wireless Remote Control** - With the Wireless Remote control you can control all basic operations - including print mode selection - without touching the EP-60.
- **Picture adjustment controls** for sharpness, brightness, tint and color.
- **Split print mode** meets U.S. Government guidelines for passport photos.

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9" Color Video Monitor

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- External sync input and output for synchronization with other professional components
- Automatic termination
- Pulse cross circuit - allows horizontal and vertical intervals to be displayed at center of the screen so you can examine data in blanking area and sync/burst timing
- Blue Only mode - provides monochrome display making it easy to evaluate "noise" precisely. Also chroma/phase adjustments can be performed easily
- Underscan - shrinks the scanned area of the picture tube approximately 5% enabling entire active picture area to be displayed
- Built-in comb filter minimizes loss of color resolution
- Rack-mountable in standard EIA 19" rack
- Built-in speaker. Headphone jack

BT-S1370Y

13" Color Video Monitor

- Housed in a durable metal hybrid cabinet, the BT-S1370Y is loaded with features such as S-Video compatibility, four (4) TV system playback and full front panel control layout.
- S-video input and output connectors. Combined with advanced video circuitry, provides a remarkably sharp picture with horizontal resolution of more than 420 lines
 - The BT-S1370Y detects the color system of the input signal and auto-matically selects PAL, SECAM, NTSC or NTSC 4.43. A manual selector is also provided
 - Blue Only Mode - Provides a monochrome display making it easy to evaluate "noise" precisely. Also chroma/phase adjustments can be easily performed
 - Built-in Comb filter minimizes loss of color resolution and luminance detail
 - Two sets of audio/video inputs and outputs (line A and B) in the rear
 - Line A also has S-Video input. Line B also has 8-pin VCR input
 - Built-in speaker. Headphone jack with volume control
 - Rack-mountable with optional BA-131 rackmount

BT-S1360

13" Diagonal Color Monitor

- S-Video input and advanced video circuit technology provides a remarkably sharp picture with over 420 lines of horizontal resolution
- Two sets of video/audio inputs and outputs
- External sync inputs and outputs provide for synchronization with other equipment fed with the same sync signal
- Blue Only mode plus Chroma selection provide a monochrome image for line adjustment of contrast, brightness, chrominance and hue
- Underscan - shrinks the scanned area of the picture tube approximately 5% enabling the entire active picture area to be displayed. Lets you detect intruding cameras and mikes
- Pulse Cross - allows horizontal and vertical intervals to be displayed at the center of the screen so you can examine data in the blanking area and also for sync/burst timing
- Switchable color temperatures of 6500K (broadcast standard) or 9300K (for pleasing picture)
- Built-in speaker and headphone jack
- Rack-mountable with optional BA-131 brackets

BT-H1350Y

13" High Grade Color Video Monitor

The BT-H1350Y is a high resolution monitor featuring compatibility with all four major color TV broadcast systems. Its advanced dot-in-line CRT with SMPTE C Phosphor delivers 750 lines of horizontal resolution and excellent color fidelity. For demanding professional applications the BT-H1350Y is the right choice

Features:

- S-Video and component compatibility. Y/R - Y/B-Y/C component video inputs for direct connection to Panasonic MII and Sony Betacam component VCRs
- Detects the color system of the input signal and automatically selects PAL, SECAM, NTSC or NTSC 4.43. A manual selector is also provided
- Advanced video circuit technology delivers a superb picture with horizontal resolution of 750 lines
- Use of SMPTE C Phosphors and a 0.31mm fine pitch shadow mask in the CRT combine to provide the high resolution and accurate color rendition required for many professional monitoring applications like measurement and presentation
- Has new Automatic White Balance Circuitry that stabilizes the white balance providing outstanding picture performance - automatically
- Blue Only mode and Chroma selection switch. They provide monochrome images for fine adjustment of contrast, brightness, chrominance, hue and color visibility of tape deposits
- Underscan - shrinks the scanned area of the picture tube approximately 5% enabling the entire active picture area to be displayed. Lets you detect intruding cameras and mike booms
- Pulse Cross - allows horizontal and vertical intervals to be displayed at the center of the screen so you can examine data in the blanking area and sync/burst timing
- External Sync - external sync inputs and outputs provide for synchronization with other equipment fed with the same sync signal
- Temp Selection - Switchable color temperatures of 6500K (broadcast standard) or 9300K (for pleasing picture)
- Two sets of audio/video input and outputs (Line A and B). Line A also has S-video input and Line B has 8-pin VCR input. Also has analog RGB or Y/R - Y/B-Y/C component inputs
- Built-in speaker and headphone jack. Rack-mountable with optional BA-131 brackets

Panasonic Broadcast & Television Systems

NEW! AG-455

2-Hour S-VHS Camcorder

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

WV-F250B

3-CCD Color Video Camera

The WV-F250B provides the flexibility needed for truly professional performance. Its high density 1/2" CCDs deliver outstanding horizontal resolution of 750 lines. It has a high S/N ratio of 60dB and consistently outputs high image quality with low smear. Has component output plus Y/C output for compatibility with VHS, S-VHS, Hi-Fi, Betacam and virtually any type of VCR - for truly outstanding professional performance in ENG/EFP, studio and dockable (camcorder) type applications. The WV-F250B combines advanced technology with ergonomic design and operating convenience to fulfill the demands of the ever expanding professional video world.

Features:

- 3 FIT (Frame Interlaced Transfer) CCD chips with 380,000 pixels each deliver 750 lines of horizontal resolution
- High signal-to-noise ratio of 60dB enable consistent recording with low vertical smear level and outstanding sharpness of details
- Advanced electronic shutter with variable speeds from 1/50 - 1/2000 of a second
- Rugged aluminum die-cast body is resistant to shock and vibrations, makes it ideal for outdoors, including ENG/EFP
- High resolution 1.5" viewfinder with character display and zebra level gives a host of other information
- Built-in SMPTE color bar generator for accurate colors of your monitor. Date and time are also recorded on the color bars
- Docks to S-VHS, Hi-Fi, and Betacam, can also be connected to VHS, Beta and 3/4" models

DS-2550A S-VHS Dockable Package:

- WV-F250B 3-CCD color camera
- WV-FV39 1.5" viewfinder
- Fujinon 12.1 servo zoom lens
- WV-MC36 condenser mic
- WV-CC71 system case
- AG-7450A S-VHS Hi-Fi VCR
- WV-DK70M Docking kit
- WV-OT70 tripod adapter

WV-F700 3-CCD Digital Processing Camera

Digitized Image Processing Circuits For Professional Video Productions

- 2 1/2" high sensitivity 380,000 pixel CCDs with on-chip optics delivers an outstanding 750 lines of horizontal resolution
- Achieves a sensitivity of 18 dB at 2,000 lux to expand the available illuminance level at 0.4lx. Minimum object illumination has also been upgraded to 7 lux at 11 ft with 2400 lines (4 lux at 11 ft)
- A high S/N ratio of 62 dB gives new meaning to picture quality
- Return deflection at sampling which causes more is returned by Panasonic's high performance optical Low Pass Filter (LPPF). Most effective when aiming at fine patterns and stripes
- Chroma Detail is included in the digitized image signal processing circuit to compensate for poor resolution in high chroma areas of the picture. Available only in a digital processing system. Chroma Detail provides a wide dynamic range image with clear color reproduction in the chroma area
- Dark Detail Circuit reproduces dark areas of the picture in detail without changing the brightness of the other areas. Additionally, it compensates contours with very fine edges. Even strands of hair can be reproduced to look natural
- The WV-F700 features detail enhancement through 5 stages of switching. Two levels of band switching (High and Low) and two levels of detail switching within each of the bands. And for further flexibility, the detail enhancement circuit can be turned off when shooting close-ups, special graphics or scenes in low light
- A total of 4 Scene File Modes are available and simple to operate: Scene File One is the standard Mode which sets the WV-F700 to adjust to studio lighting. Scene File Two is the Illuminance Mode, which provides for different shades of black to be reproduced clearly in dark locations without requiring lighting alterations. Scene File Three is the Fluorescent Mode because under fluorescent lighting conditions certain color hues tend to be reproduced slightly in the blue spectrum. When switching on Scene File Three, these hues are adjusted while using the white balance to provide natural tones. Scene File Four is the User Mode for flexible data setting. Twenty different digital adjustments can be set including gamma, knee-point, chroma detail, detail, matrix and shading
- There are three highly reliable, specially designed camera heads for direct docking: WV-F700 MH for MII, WV-F700 SH for S-VHS, WV-F700 BH for Betacam portable VCRs without the need for adapters
- A switchable Y/R-Y/B or Y/C system is installed to the output circuit allowing direct docking to acquisition systems which use 1/2" MII, S-VHS, or Betacam portable VCRs without the need for adapters



AG-195

2-Hour VHS Camcorder

Features:

- 8 1/2-speed power zoom lens
- Automatic iris and white balance plus manual override
- High speed shutter from 1/100-1/8000 second
- Digital Effects:
 - Digital Mix - for soft fade-over between memorized still and moving images
 - Digital Tracer - to add an after-image effect to moving subjects
 - Digital Still - lets you freeze a particular scene for as long as you like, without interrupting sound recording
 - Digital Zoom - Thanks to digital processing, you can enjoy shots with ultra-high magnifications of up to 100:1
 - Digital Gain-Up - delivers clear, distinct images in low-light levels, even down to one lux
 - Digital Strobe & Digital Wipe - add professional effects to your shooting

AG-460

2-CCD S-VHS Camcorder



Features:

- Two 360,000-pixel CCD image sensors
- 470 lines horizontal resolution & superb color reproduction
- Laminated amorphous video heads
- Hi-Fi audio with stereo zoom microphone
- Two-speed 10x power zoom lens
- Piezo auto focus (TTL) with 3-step focus zone
- Sensitivity switch (0 db, +18 db AGC) helps overcome lighting deficiencies
- Advanced auto-tracing white balance with manual override
- Black & white Audio/Video Fade-In & Fade-Out
- Automatic iris with manual override
- Variable high-speed electronic shutter
- Audio level control with LCD level meter
- Audio/Video insert editing and dubbing capabilities
- Audio out select switch (Hi-Fi/Normal/Mix)
- Versatile editing facilities: S-Video Out terminal/Adaptor terminal/Synchro Edit/5-pin Edit terminal/Edit switch/Character Generator direct connection capability
- Includes Panasonic metal system case

VIDEO MONITORS

CT-1331Y (13")

- Line A, B, S-video, VTR inputs
- High contrast picture tube even in excessive sunlight
- High resolution of 420 lines plus comb filter for exceptional purity and clarity
- Automatic termination eliminates loss of signal caused by improper termination
- Built-in front panel speaker

NEW! CT-1383Y (13")

- 60 deflection picture tube
- Line A or B, S-Video inputs
- 420 line horizontal resolution
- Headphone jack & external speaker jack
- Available with TV tuner-Model CT-1383-VY

CT-2083Y (20")

- 450-line horizontal resolution
- Line A or B, S-video input and output terminals
- Audio/Video monitor out terminal
- On screen display for adjustment of sharpness, brightness, picture color tint
- Available with TV tuner-Model CT-2083-VY

MONITOR/VCR COMBO

AG-505

Portable 5" Color LCD Monitor/VCR

- 5" TFT (Thin Film Transistor) LCD screen
- Record/Playback capability using full-size VHS tape
- 3-way power supply, including battery pack, AC and car battery (using optional car cord)
- 4 audio heads, 4 video heads and flying erase head
- Hi-Fi audio record/playback capability (playback requires optional stereo speakers)
- Built-in speaker (monaural) and stereo headphone jack
- Fold down monitor design for ultracompact portability - weighs only 3 pounds

NEW! AG-513A (13")

- Internal timer playback with auto repeat
- On-screen display programming
- Autoplay with auto repeat
- Special effects playback - Fast search, double-speed, still and variable slow playback
- Wireless remote control
- ANC video input and output...earphone jack



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SONY VHS & S-VHS

SVO-1410 VHS

Features:

- HQ circuitry for high quality picture
- Dual azimuth 4 head design
- SPL/PEP modes for both recording and playback
- Noiseless clear Still
- Auto repeat, Index search
- Key inhibit switch, Anti-theft hook
- Control-S (input only)

SVO-160 VHS

Has most features of the SVO-1410 Plus -

- High speed rewind of a T-120 tape in less than 2-1/2 minutes
- Hi-fi stereo recording system for a wide dynamic range of 90dB and a frequency response from 20 Hz to 20,000 Hz
- Front panel audio and video inputs
- Mic mixing - lets you mix a narration over the soundtrack during playback or recording. The audio level of the mic can be adjusted from the volume control.
- Accepts three different control signals, control 'S' and 'P' for multiple VCR operation. Up to 50 VCR's can be controlled simultaneously. Also control 'L' communications protocol will interface with almost any control track edit controller.

NEW! PROFESSIONAL SONY S-VHS SYSTEM

SVP-9000 S-VHS Hi-Fi Player and SVO-9600 S-VHS Hi-Fi Player/Recorder

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

They both feature:

- Using the S-VHS format, they deliver superb picture playback and recording. With newly developed Digital Y/C separator maintained picture quality even in composite.
- Newly developed video cross talk canceller eliminates color blur providing more accurate color and sharper images.
- Four channel audio system - Two Hi-Fi channels with a dynamic range of 90dB & two linear channels with Dolby Noise Reduction.
- Two direct-drive reel motors provide rapid response and smooth operations. Mode transitions such as STOP to REC, FAST FWD to PLAY, STOP to REWIND are virtually instantaneous.
- Search dial allows picture search from -10 to +10 times normal speed.
- Automatic repeat an automatic rewind can be accomplished with Programmed operation.
- Soft pause for gentle tape operation.
- There is a TIMER switch for either REC or PLAY (SVP-9000 PLAY only) when selected automatically executes the selected mode when the power is turned on. This function is very useful for unattended operation such as satellite recording.
- Auto head cleaner - each time a cassette is loaded or ejected, a cleaning roller automatically passes over the video/FM audio heads removing tape residue and providing preventive care of the tape heads.
- For secure connections, they employ a locking connector for S-Video input and output terminals.
- Both feature SYNC IN for synchronizing with other video sources.
- The SVO-9600 features sensor recording. When video signals are input to the SVP-9600, it automatically starts recording.
- Both are 19" EIA rack mountable plus both have adjustable front controls.

Optional Interfaces:

- **SVBK-100** 25-pin interface board allows remote control of basic VTR functions.
- **SVBK-120** RS-232C interface board allows for machine control from a computer.
- **SVBK-140** RS-422 interface board allows either machine to be configured into any professional system.
- **SVBK-150** Digital Noise Reducer board reduces jitter, noise and Y/C delay and provides clear, crisp still frames.
- **SVBK-160** SMPTE Time Code interface board (can only be used with SVBK-140 board).

CALL FOR PRICES

SONY

BUSINESS AND PROFESSIONAL GROUP

EVW-300

3-CCD

Hi-8

PROFESSIONAL
CAMCORDER



Sony's video Hi-8 camcorders have been well acclaimed for their ability to capture high quality images in field applications. Their compactness, lightweight, high mobility and long recording time are definite advantages of shooting in the video Hi-8 format. Now Sony introduces the latest addition to its Hi-8 camcorder series the EVW-300. The EVW-300 is a complete one piece camcorder which includes a variety of innovative and advanced operational features. So, whether your shoots require basic recording capabilities or premier performance, the EVW-300 offers a wide range of features and remarkable recording quality to best suit your needs.

Features:

- Equipped with three high density 1/2" IT Hyper HAD image sensors. Combining this advanced CCD technology with advanced optical technology an excellent sensitivity of F8.0 at 2,000 lux, high S/N of 60 dB, and over 700 lines of horizontal resolution is achieved.
- Provides high quality PCM digital stereo and single channel AFM Hi-Fi recording. Has XLR balanced audio connectors with LINE/MIC switching.
- Quick start 1.5" viewfinder with 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 8mm Time Code generator records absolute addresses. (Either non-drop frame or drop frame mode may be selected.) Furthermore the EVW-300 incorporates a variety of time code features such as Time Code PRESET/RESET, REC RUN/FREE RUN and User Bits.
- A variety of automatic adjustment functions for different lighting conditions are incorporated into the EVW-300:
 - **ATW (Auto Trace White balance)** - with conventional professional video cameras white balance has to be adjusted before shooting every time the light source is changed. With ATW, white balance is automatically corrected by control of the microprocessor in real time when ATW is turned on so optimum white balance is always ensured during recording, even for changes in color temperature. Conventional white balance adjustment is still provided with the Auto White Balance Function.
 - **AGC (Automatic Gain Control)** - in addition to manual Gain up the EVW-300 has AGC which provides linear gain up in the range of 0 dB to 18 dB.
 - **Intelligent Auto Iris** - for situations where the lighting between subject and background is different (subject is underexposed) the Intelligent Auto Iris automatically examines the scene and adjusts the lens iris for proper exposure.
- In addition to the automatic adjustments the EVW-300 features auto white balance, auto black balance and black set-up level. With this and three-position color temp conversion filters you can shoot in almost any lighting conditions.
- **Selectable Gain-up** from 1 dB to 18 dB in 1 dB steps for Mid & High positions.
- **Clear Scan function** - provides a variety of selection of shutter speeds ranging from 60-200 Hz allowing recording of almost any computer display without flicker.
- **Compact, lightweight** (12 lbs with NP-18 battery) ergonomic design provides well balanced and extremely comfortable operation.

EVO-9700

DESK-TOP EDITING MACHINE



Editing recorded video segments together into a well-produced professional program has long been considered a creative option only for those with large budgets and extensive technical expertise. Now Sony breaks with this misconception by introducing a revolutionary editing machine, the EVO-9700. This innovative machine is designed to be simple to use. And it is packed with sophisticated capabilities to bring the creativity of the professional editing suite right to your office desk. The EVO-9700 is comprised of both a video Hi8 player and a recorder housed together in a one-piece compact body. Its desk-top design and ergonomic configuration offer advantage in space and operation.

Although very easy to operate, a range of versatile editing features such as video/PCM audio insertion, program edit, preview, review, slow motion/freeze edit, and title recording capabilities are integrated into the EVO-9700.

Features:

- **Compact** desk deck design - total weight 26 lbs.
- **Built-in 8mm Time Code Reader/Generator** for absolute frame accuracy
- **Two PCM + monaural AFM audio tracks**
- **Does all edit modes** - Assemble, Video Insert, and Audio Dub all automatically.
- **Up to 99 scenes** can be stored in memory including 25 pages of title information
- **Preview/Review Function** - confirm the appearance of a program before and after an edit. You can monitor the results of a simulated or actual edit
- **Built-in Digital Chrominance Noise Reducer** - improves chrominance S/N ratio for superior dubbing quality
- **Tape Jitter/Skew Corrector** - field memory used in the noise reducing process also at same time eliminates jitter to give clear, stable pictures (Using EVO-9700 with Video Toaster requires no TBC.)
- **Slow Motion/Freeze Edit** - noiseless 1/5 times normal speed slow motion pictures and a clear freeze frame can be played back during editing
- **JOG/SHUTTLE Dial** - frame accurate picture search from -17 to +19 times normal speed
- **One monitor editing capability** - press the P in P button and pictures from both the player & recorder can be viewed simultaneously on a single monitor - no need to use two monitors
- **Separate PCM and AFM audio level volume controls**
- **S-video in/out connectors**
- **Supplied Title Keyboard** - titles, captions and any other info can be created and recorded onto moving pictures, freeze picture or background color (7 different colors, four character sizes are available)
- **Includes RM-E9700 Edit Controller** - Quick Edit, Program Edit, Video & Audio insert are controlled from the supplied RM-E9700 controller.

COLOR PRODUCTION MONITORS

PVM-8041Q

- AC and DC operation (with NP-1A or 1B batteries)
- Underscan, Pulse Cross, Blue only mode
- Comb filter for improved luminance/chrominance separation
- Analog RGB 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
- Optional VF-505 ENG kit contains a monitor hood and cord reel for operational convenience in the field

PVM-1341 (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

Additional Features:

- Underscan - Shrinks the scanned area of the picture tube approximately 5% enabling you to review the entire image area
- H/V 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-1344 Q (13")

Has all the features of the PVM-1341 PLUS

Additional Features:

- **Super Fine Pitch** delivers over 600 lines horizontal resolution via video inputs, better than 900 x 200 pixels via RGB inputs
- **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.

PVM-1944 Q (19")

- Same monitor as PVM-1344 Q but with 19" diagonal screen, plus has auto/manual degaussing to correct color impurities caused by magnetism in the picture tube.

COLOR PRESENTATION MONITORS

PVM-1340 (13")

- **Dynamic Picture circuitry** adjusts gain to achieve better contrast in bright highlights and dark shadows.
- **Auto white balance** uses beam feedback circuit to maintain stable and accurate white balance.
- **Line A or B, YTR (8-pin) analog RGB and Y/C (S-Video) 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 and hue adjustment
- **Built-in speaker** for audio monitoring (4 audio inputs)
- **Standard EIA 19" rack mount capability**

PVM-1380 (13")

- **Line A and B inputs with BNC connectors**
- **Built-in speaker** for audio monitoring
- **Sub-panel controls** for hue, color brightness & picture
- **Sleek cosmetic design** suitable for point-of-purchase displays, boardroom, etc.

PVM-1390 (13")

- **Fine pitch picture tube** for superlative resolution
- **Line A or B (VTR or S-video) inputs**
- **Digital RGB input** with D-sub 25-pin connector
- **High resolution 450 lines horizontal resolution**, 640 x 200 pixels via RGB input
- **Comb filter** extracts maximum picture detail, eliminates color spill
- **Sleek white cabinet** with angled screen for desktop monitoring
- **Built-in speaker** for audio monitoring

CUBIC COLOR PRESENTATION MONITORS

PVM-2030/2530

- **'Cubic Style' 20 or 25"**
- **High resolution 560 TV lines**, 640 x 200 pixels (RGB)
- **Beam current feedback circuit** for stable color balance
- **Line A or B input, YTR (8-pin) Y/C and Analog/Digital RGB inputs**
- **Last memory function** makes the monitors retain the same control settings used before power was turned off
- **Manual degaussing** to assure accurate reproduction of color
- **Through the optional 2-way speakers (APM-XSA) dynamic sound** can be obtained.

PVM-3230 (32") CUBIC

- **Even higher horizontal resolution** of over 650 lines
- **640 x 200 pixels RGB**
- **Includes sophisticated programmable wireless remote control**
- **Internal or external sync input/output**
- **Switchable notch filter** to reduce dot interference

MULTISCAN MONITORS

GVM-2020 20"

- **20" fine pitch Trinitron multiscan color video computer monitor**
- **Automatic locking** for computer signals (15 KHz - 36 KHz)
- **560 lines resolution (video)**, 720 x 480 (RGB)
- **Line A, B, Y/C, RGB A (Analog/Digital), RGB B (Analog)**
- **RGB H/V size adjustment and H shift capability**

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TOASTER PERIPHERALS



- Broadcast quality infinite window time base correction and synchronization from any video source
- TBCard plugs directly into Amiga (perfect for the Toaster) or IBM-PC
- Offers full 5.5 MHz bandwidth (440 lines of resolution) to ensure highest quality professional results
- Includes TR-7 remote control unit for full Proc Amp control, field or frame freeze, timing adjustments

...679.00



DIGITAL TIME BASE CORRECTOR/ FRAME SYNCHRONIZER

- Will time base correct & transcode inputs from Hi-8, S-VHS, VHS-DUB, 3/4", 3/4" VCR-DUB and composite video
- Ideal for use as a frame synchronizer, synchronizing outside satellite, microwave & camera feeds with studio signals
- 3-5 dB chrominance & luminance noise reduction
- Full Proc AMP controls, drop out compensator
- Built-in RS-170 sync generator with genlock input and black burst output
- V/C delay adjustments, field and frame freeze
- Wide 5.5 MHz frequency response offers 450 lines of resolution. Full 8-bit processing
- and a 58 dB S/N ratio

1749.00

The KitchenSync

Dual Channel TBC

- Two complete infinite window time base correctors on one IBM AT/Amiga compatible card
- Plugs into any IBM AT or any Amiga 2000 or 3000 PC slot
- Works with any video sources including consumer VCR's and camcorders
- Use more than one Kitchen Sync linked together to synchronize even more channels
- S-VHS and Hi-8 compatible. Has S-video input with option for S-video out
- Complete 100% accurate sync generator built-in. Totally regenerates all sync and blanking signals
- Absolute 100% broadcast quality output
- Built-in Proc Amp with Hue, Saturation, Contrast and Brightness adjustments
- Advanced sync output - useful with any VCR capable of taking an Advanced Sync in
- Completely digital design - no Pot adjustments necessary. The Kitchen Sync is completely microprocessor controlled and easy to adjust

1499.00



FA-310

DIGITAL TIME BASE CORRECTOR

- S-VHS inputs and outputs with both 4-pin and 7-pin connectors (for JVC)
- Wideband CCD comb filter maintains high resolution and high quality pictures
- Selectable field or frame freeze
- Optional remote control allows setting strobe freeze and strobe duration
- Built-in Drop Out Compensator
- Automatic chroma level control restores the reduced chroma signal level at play-back to the correct level
- Exclusive noise reduction increases the output signal-to-noise ratio up to 9 dB without the resolution loss typically encountered with H/V dimension noise reducers

CALL



The magic of professional editing has never been so affordable. AmiLink/CI combines the power of a personal computer with the features of an advanced editing suite in one user-friendly desktop system

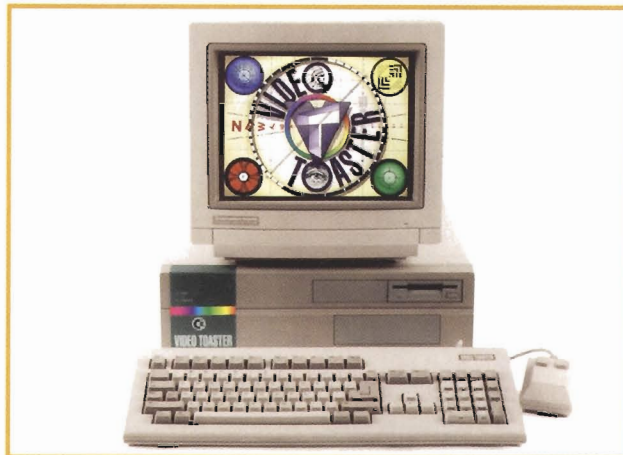
Features:

- Edit with your own style using a combination of the Amiga keyboard, mouse, trackball and joystick. Enjoy editing with the easy-to-use GUI (Graphical User Interface)
- Smoothly perform video and audio insert edits, and the Preview and Review feature ensures they will be recorded perfectly
- "Go To" feature lets you move quickly to any inpoint, outpoint, pre-roll point, or tape location you choose
- Time-saving "Tag" feature lets you tag inpoints, outpoints or durations for source machine, record machine or both
- Trim feature lets you edit quickly with pinpoint accuracy
- CMX list import and export capability plus MS-DOS disk format option for true off-line editing
- Trigger your effects from the Toaster using the programmable GPI
- Full control of Toaster's digital effects. Automatically preloads CG pages for automatic assembly
- Edit list management processing up to 999 events
- AmiLink/CI runs on any Amiga with one MB RAM and is compatible with Panasonic S-pin control (AG-1960) and Sony Control L

CALL



VIDEO TOASTER SYSTEM 2.0



Production Switcher

The Video Toaster Switcher is a broadcast quality production switcher which lets you perform cuts, fades, dissolves, key and color effects between any of 7 sources including 4 video inputs, two true-color high resolution frame buffers and a background matte generator. A separate overlay channel gives you the ability to key images or live video over the switcher during transitions. The switcher's graphic design makes it simple to learn and use while providing access to all the Toaster's breakthrough capabilities.

Additional Features:

- 2 video outputs (Program and Preview)
- Preview output lets you compose the next camera shot or frame buffer prior to performing the transition
- Linear keyer
- External GPI trigger
- 256 level adjustable luminance key
- Automatic or manual (T-bar) control of transitions
- Soft edge wipes
- Animated wipe patterns such as page tearing, spray paint, windshield wiper, heart, clock, iris, spiral and many more
- Organic transitions such as clouds, spilling paint, pouring water, smoke, fire, shattering glass

Luminance Keyer

The Video Toaster's integrated luminance key technology gives you the ability to superimpose a weatherman over a map, live video or still graphics. Luminance keying also works in conjunction with many Toaster Digital Effects to make text or logos fly in over another video source. Text created in ToasterCG uses built-in automatic keying to deliver titles crisply rendered over any video source, even with transparent drop shadows. Toaster Luminance Key does all this and more.

Frame Grabber/Frame Store

The Toaster can grab and save a full frame (in 16.8 million colors) and has sophisticated motion removal algorithms to provide a rock-solid freeze frame. These frames may then be loaded into "ToasterPaint" or "LightWave 3D" for further manipulation. Up to 1000 frames may be saved on each frame store device (depending on available storage space). Stored frames can be loaded and displayed in the frame buffers in as short as 1/5 of a second from RAM or 3 seconds from hard drive. These frames can also be used as inputs to the switcher for transitions and digital effects.

ChromaFX Color Processor

ChromaFX is a sophisticated real-time color processor that gives you complete control of all aspects of the brightness, color and color of your video. It can alter video with color negatives, day for night, sepia tone, monochrome, solarization, posterization, color vignettes, and other totally unique effects such as Nuke, Chrome, Gold, Zebra, and more. ChromaFX also gives you the power to create your own custom color effects from subtle lighting changes or hints to blazing psychedelic effects that will wake up your audience.

Digital Video Effects

The Toaster has the processing power to manipulate live broadcast video in real time, and perform hundreds of network-quality digital video effects as easily as clicking the mouse and sliding the T-Bar. Many Toaster Digital Effects are not possible on any other device including whips, zoom trails, and the "Transporter". Among the effects which are included with the Video Toaster are:

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Toast on the Road:



The LeoAwards

by Joe Clasen
and Susan Ishida

There are big Toaster jobs and there are small Toaster jobs. No surprise there. What may surprise you, however, is that both have their advantages. While the big jobs offer better budgets and greater exposure, the small jobs can provide an opportunity to experiment. Additionally, a job with a small budget can force you to find the most efficient way to get the job done. In short, you learn to get the Most from your Toast. When you apply these timesavers to your next big job, you'll be amply rewarded for having taken the small job as an educational experience.

Did I mention education? Conveniently, the subject of this article is the "Leo Awards," a scholastic awards show modeled after the Academy Awards, but with a slightly less star-studded budget. The ceremony is held annually at Westminster High School in Orange County, California (about an hour south of Los Angeles). Their school district is unusually well equipped with video and multimedia resources, including television distribution facilities at all of the high schools, one of which airs a weekly news show produced by students. Westminster High School, in addition to television facilities, has a satellite dish that allows teleconferencing with other schools, a complete video distribution system and over 250 computers in several labs throughout the school. Apple, IBM clones and Macintosh labs with everything from laser workstations to CAD drafting are available, but I have had little luck sharing my enthusiasm with the Amiga. So when they approached me about doing their Leo Awards, I thought it would be a good chance to show what the Amiga and a Video Toaster can do!

The Leo Awards, like most such shows, tends to be a test of how many people you can cattle-herd across the stage with the least amount of delay. In previous years, the show consisted of a rear projection screen that would present slides of the students as their names were called. It was my job to take all the slides and arrange them in the correct order. This proved to be a monumental, if not impossible task. First of all, the initial job of obtaining usable photos of each award winner, or entering them as framestores, would be extremely time consuming. Secondly, unless you can count on the live show being extraordinarily well directed (something you should never count on) this sort of thing rarely works without mishaps. In case of no-shows or people getting out of order, the picture of John Smith will unfortunately come up while a perplexed Mary Jones is receiving the award.

To prevent such embarrassment for all involved, I decided to forgo the slides and have their names scroll across the screen over a graphic depicting their department, such as Science or Math. This would be displayed on a large rear projection screen (set up next to the stage) as the winners' names were called and they made their way to the stage. Once everyone was assembled onstage, I'd switch to a live camera shot of the principal shaking hands with each winner. If all went well, we'd wind up with all the award recipients on videotape for the proud parents to purchase at a nominal cost. Not a great money-making venture, but it would help defray some of the cost of producing the show. It would also give me the opportunity to show a lot of parents, teachers and our area's brightest students



Figure 1

what the Amiga can do.

Object Lessons

So what have we learned so far? Rule #1: Don't go with an inefficient format just because it's what the client has always done in the past. After all, if they're so pleased with their past productions, why have they brought you in this time? Even if you are the one who has successfully produced their previous shows, any changes that can make future shows run more smoothly should be encouraged.

Rule #2: With a live show, leave yourself as much room as possible for unexpected changes in the program. Expect presenters to present in the wrong order, performers to omit lines or possibly entire numbers. Expect directors to make last-minute



Figure 2

changes and forget to inform you. Always have a few generic framestores or bits of video on hand for emergencies. My favorite standby is still the "art pad," essentially an attractive title screen created specifically for the event. In a pinch, you can always flash that onscreen. Now let me explain how we assembled the show.

Putting It Together

In addition to the art pad, we needed a framestore graphic with titling for each of the school's departments. I elected to create the framestores in ToasterPaint, while my wife created the art pad on her Amiga using DCTV Paint from Digital Creations. DCTV images can be saved as 24-bit files and are quite Toaster friendly. With 16 million colors and a few snazzy paint features not yet available in ToasterPaint, DCTV is a useful companion program.

The art pad would consist largely of the words, "The Leo Awards," with the word "Leo" occupying most of the screen. Loading in a suitable font, the words are typed in and positioned on the screen. Next, with a little fine tuning of the text sizing and placement, the basic letters are in place. To emphasize that the Leo Awards are about the students, a

large number of student photos have been digitized, mostly from the school's yearbook. These will be collaged and used as a pattern over the word "Leo." This is largely done by assembling the photos on a swap screen and using the "rub thru" mode.

By using a low flow rate and repeatedly rubbing through irregularly shaped areas, the different faces can be harmoniously mixed and matched to create a seamless montage. Using the "color closeness" feature, a stencil is created to mask out the background and ensure that the faces will only be rubbed through onto the word "Leo." When the montage of faces is completed, a transparent yellowish-gold color is applied at a very low flow rate over the entire word. This makes the "Leo" more legible and makes the pattern of faces look more cohesive.

Next, a digitized image of a lion is loaded in, resized and added to the graphic in place of the letter "H" in "THE." A clip of the "H" is reloaded, tilted, given a slight drop shadow and stamped onto the lion. With some minor touch-up of the mouth area, the lion appears to be holding the "H" in its jaws. The image will be saved in several versions, one with a solid black background that can be keyed out (see Figure 1) and one with a more colorful background (see Figure 2). Clips of all the separate picture elements are also saved so that they can be rearranged to make quick variations of the art pad.

Rule #3: Once you have a basic graphic element created, make the most of it. Changing the background, using it keyed over video, resizing and repositioning or wrapping it on a 3D object are just some of the ways you can get more mileage out of your graphic.

Finally, the art pad is loaded into ToasterPaint one last time and fine tuned. While DCTV offers more flexible drawing modes and tools, ToasterPaint's sharper resolution allows you to clean up glitches you might have missed in DCTV.

Meanwhile, I set up my video camera and began digitizing framestores for each department. In addition, I pulled a few frames from a laser disk. For instance, a young woman holding up a test tube in a laboratory was used for Science, while a sheep shearing picture was scanned for Agriculture. (In a high-tech school, I always find it amusing that a full-functioning farm is still maintained on the south forty, a throwback to an earlier rural history.) It seems every framestore needs a little help, and a quick visit to ToasterPaint allows me to touch up the edges and make a department title at the bottom of the page. The ability to use ToasterCG in conjunction with ToasterPaint has proved to be one of my favorite features in the software's 2.0 version. Once I decided on the title placement for the first framestore, I was able to use that placement as a template for all the framestores by simply changing the words, but keeping the same placement. This provided visual continuity and saved a lot of time as well.

Rule #4: Some time-saving techniques actually improve the quality of what you're producing. In this case, using CG templates with ToasterPaint gave me uniform graphics and saved time. With the graphics in the computer, I remembered the framestores a couple of times with Diskmaster as the order of the show changed. With those out of the way, I moved on to sound editing.

Sounds Like...

In previous years, the symphonic band would

...Continued on Page 96

play small snippets of music (like the theme from *2001: A Space Odyssey* for Science) as the students from a particular department took the stage. For this show, I was delegated the task of playing back canned music since the band, due to the ongoing state budget crunch, was not up to the task. A major problem to face is not knowing what time length of music is needed. Sometimes the nominees all sit in the front row and appear instantly, while other times they seem to take forever. With Audiomaster IV, I sampled a bit from a compact disc and looped the music. For Math, for instance, I sampled the Beatles' "1-2-3-4...can I have a little more..." several times in a row on a single tape. For all of us who, before the age of personal computers, have tried to splice

audiotape manually with razor blades, you'll appreciate the power of Audiomaster IV in nanoseconds. I then recorded each loop onto an individual tape per department. Even if they changed the order at the last minute, we were ready for them. Ideally, we'd like to be able to write a script for the entire show, press "Play" and let it run. The reality, though, is that live shows require a lot of flexibility.

Rule #5: Keep your graphic and music elements available individually. Keep everything clearly marked and in logical order, but be able to depart from that order if necessary.

In ToasterCG, I typed in the names of each department's nominees. As a scroll page, each name should roll up the screen as the music played in the

background. The "Leo Award" winner was chosen from the nominees, so every finalist and "Leo" winner was entered in ToasterCG as a Key page. When the principal would shook their hand, I would switch from framestores to live camera and overlay their names on top of their images. Also, a couple of special presenters, such as the mayor and superintendent, got their own Key frame of their names.

For reference, I usually group the frames by the hundred, such as 0-99 for Scroll pages, 100-199 for Key frames, etc. This provides extra room for last-minute additions. With most of the show ready, all that remained was to put in the credits for the final roll at the end of the show.

Showtime

When my wife and I arrived on the day of the show, we set up behind the stage just below the rear projection screen. I hooked up the Toaster to the recording VCR and a Eiki LC 300 LCD large screen video projector. Even with the composite input, the picture from the projector was bright enough and large enough to be seen by the entire audience. Onstage, I used stage lighting shuttered away from the screen. Although these projectors work best in a darkened room, I find them more than adequate to display for crowds of 500 to 1,000 in a controlled-lighting environment. The Eiki projector even has a switch for reverse projection. For smaller groups, the projector has a built-in amplifier and speaker—a definite timesaver. What I like best about it, is there is no setup time required! All those hours tweaking tiny knobs for convergence on a RGB projector have been replaced by a casual focus and zoom from the remote control. I positioned my cameraman down front to shoot the action and set up the sound system with my wife running the playback of the tapes. As the audience arrived, we displayed the art pad that my wife had made for the show. Before we knew it, the lights were dimmed and the spotlight was on the Master of Ceremonies (MC).

The show itself was a snap. As the MC announced each department's nominees, I rolled the Crawl page while my wife played back the tape of music until the students reached the stage. I keyed the names of the runners-up and the winner over the live video and then switched to the next department's graphic. I took great pleasure in using the falling sheep Crouton for the Agriculture department, probably the only time I will ever get a chance to use it.

As anticipated, the presenters made a few minor mistakes in the show's sequence, some of the speeches ran long and some of the winners were absent. But with a variety of framestores ready and the option of switching to and from live video, we always kept the show moving with appropriate graphics displayed onscreen.

At the end of the show, when I was introduced as the wiz responsible for the evening's technohoopla, I used the KikiFX cartwheel-across-the-screen wipe. I actually had teachers looking behind the screen to see who had done the acrobatics. After the show, quite a few curious people stopped by to see how the show was produced. I fielded the usual questions like, "What is a Toaster?" and "Is it available for my Mac?" Naturally, I told them they'd find all the answers in *Video Toaster User* magazine.



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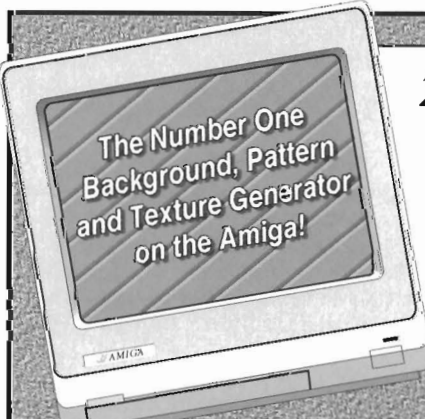


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One-Stop Music Shop

Do-It-Yourself Soundtracks

By Frank Kelly

In the last issue of *Video Toaster User* (Audio for Video, February/March 1993), I discussed sound and music as it relates to video production. I mentioned the *One-Stop Music Shop* in the context of late-breaking developments. To my delight and amazement, I was asked to review the product for this issue.

At this point, I want to make it very clear that I am not a musician. About the only way I can play a tune is to dial my favorite station on the radio. This does not mean that I don't want to express myself musically. On the contrary, like many others, I have deeply hidden aspirations of someday creating my own music. Although in the past I have dabbled with MIDI and computers, typically I purchase a musical gadget that ends up sitting in the corner of my studio collecting dust while it quickly becomes obsolete.

Before you shed a tear over my sad tale, prepare yourself for a bit of a surprise.

After just one afternoon, and without any training, I was able to create a musical composition that, to my astonishment, was good enough to be substituted for professionally-recorded music! Now, there will always be occasions when it is more appropriate to use a professionally-recorded soundtrack. But it is truly exciting to effortlessly create something from scratch that can be used in many production situations.

The credit is due to a combination of hardware and software from Blue Ribbon SoundWorks. The software is *SuperJAM! 1.1*, and the hardware is *One-Stop Music Shop*. (*One-Stop* comes with a demo version of *SuperJAM!*, but to save your compositions you'll need the fully-functional version.) *One-Stop Music Shop* is a circuit board that fits inside your Amiga 2000/3000/4000. Its components also constitute the core of the Proteus sound engine.

E-Mu Systems, creators of Proteus, are sampling and sound synthesis hardware pioneers. Their technology is based on "sampled waveforms," which are synthesized sounds that sound like real instruments. E-Mu's venerable line of sampler/synthesizer hybrids is standard equipment in recording studios

around the world. Many current motion picture soundtracks, commercial music libraries, and jingle productions make extensive use of E-Mu's products. A good portion of the technology used in E-Mu's high-end product line has filtered down into the Proteus sound engine.

Let's Talk Sounds!

In addition to the over 200 real-world instrument sounds, there are sound effects and emulations of popular synthesizer sounds.

In technical terms, *One-Stop Music Shop* features 32-voice polyphony, which allows it to respond in stereo to all 16 MIDI channels simultaneously. It's also multi-timbral, which means that a different instrument can be played by

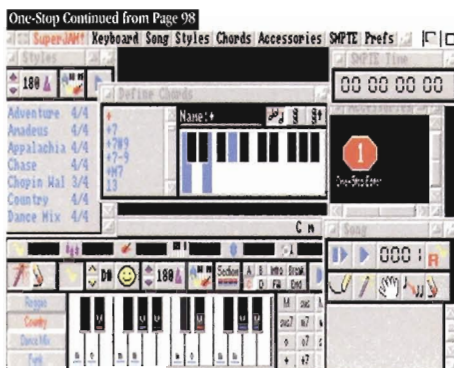
each of the 16 MIDI channels. This gives the unit a fantastic range of available sounds for simultaneous playback. All samples are 16-bit, providing remarkable fidelity. Most of the preset instruments sound completely realistic, particularly the strings and acoustic string-based instruments, such as pianos and guitars. Horn and reed instruments aren't quite as convincing, but within the context of an entire composition that doesn't rely on horns or woodwinds as lead solo instruments, the sounds are very useful. I found that the drum sounds were absolutely faithful to their original counterparts. Sound effects, although sparse, were very good and could easily find their way into custom drum kits or interesting uses in multimedia applications.

While on the subject of sound quality, let me emphasize that these are synthesized sounds based on sampled waveforms, which means that they can be changed. If you don't care for the way a particular instrument sounds, you can call up the included *One-Stop Editor* and alter it to your heart's content. You can even create new sounds, using the furnished waveform patterns as a base.

A Closer Look

Installation is easy if you've ever installed a board into one of your Amiga's internal expansion slots; if not, your dealer can perform the installation. There are left and right audio output jacks, as well as a nine-pin connector that attaches to a special cable with connectors for MIDI In and Out.

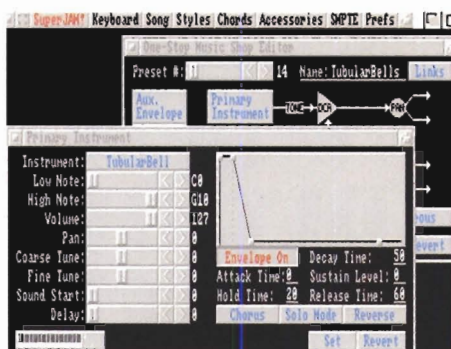




SuperJAM!

You can play One-Stop directly from your Amiga keyboard using the supplied demo version of SuperJAM!, or from an external MIDI keyboard by using a supplied utility program and your own MIDI cable. With the MIDI file player, you can play back sequences created by other software. If they use the MIDI file specification, which assigns certain instrument sounds to a specific MIDI patch number, each part will be played by the correct instrument. Blue Ribbon supplies a few sample files so that you can hear One-Stop playing music right away. Through MIDI, a sequencing package can access One-Stop just as it would any other MIDI controlled instrument. All parameters, such as MIDI volume, velocity, modulation wheel, pitch wheel and patch changes, are available.

Although One-Stop has a built in MIDI interface, it doesn't allow for MIDI Thru in its stand-alone mode. It's best to install it last in the "chain"



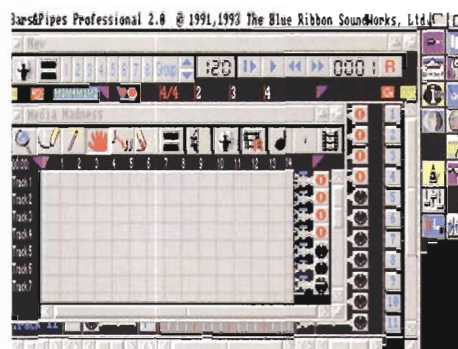
One-Stop Editor

if controlling several MIDI instruments. Understand that the built-in MIDI interface can't be used to control other instruments unless you are using Blue Ribbon sequencing software.

One-Stop's MIDI interface does have some distinct advantages, though. First, if you don't have a MIDI interface, you don't have to buy one to use One-Stop. Second, it doesn't require the use of the Amiga's serial port. If you already have a MIDI interface, One-Stop can provide an additional 16 MIDI channels.

Making the Blue Ribbon Connection

One-Stop is fully supported by the entire line of Blue Ribbon's popular software. Using One-Stop, you can access, edit, and reassign all of the One-Stop's sounds from both SuperJAM! 1.1 and Bars&Pipes Professional 2.0. Actually, thanks to the terrific job Blue Ribbon has done integrating their software with One-Stop, it doesn't make



Media Madness

sense to use anybody else's.

While in SuperJAM!, I was able to select a starting rhythm from a list of pattern styles, experiment with various tempos, key changes, instruments and their overall stereo placement and volume. Making a usable background music track complete with intro, breaks, refrains and a plausible ending was not only easy, it was the most fun I've had with my computer in years!

Using Bars&Pipes 2.0, I was able to expand the control of the One-Stop's sounds via a SMPTE "hit list." Bars&Pipes 2.0 is without doubt the most feature-rich and comprehensive MIDI sequencing package available on any platform.

The latest Blue Ribbon release of special interest to Toaster owners is *Media Madness*. This Bars&Pipes module lets you load a Toaster project, bringing up a screen that looks very much like the Switcher. From this screen you can select transi-

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tions, load CG pages, freeze and store frames, switch sources, etc. Nearly all the power of the current crop of standalone Toaster sequence generators is packaged in this Bars&Pipes add-on. I was able to create a Toaster transition sequence as part of a multimedia presentation that was also included Deluxe Paint animations and music supplied by One-Stop. However, the Toaster portion of the sequence was played without accompanying music from One-Stop.

Because of multitasking limitations, you cannot play music from One-Stop during a Toaster transition. Also, Media Madness uses the ARExx library to control the Toaster, so if you don't have ARExx installed in your system, you will not be able to install the "Toasty" tool into Bars&Pipes Pro.

An obvious multimedia advantage of sequence-based control of One-Stop is the ability to have the computer generate music for your presentation without having to access a pre-recorded source for playback. This allows for flawless fidelity and the ability to easily change the composition as needed. You can even program your multimedia application to allow for user interaction to trigger specific musical changes in real time. Media Madness supports a host of other devices such as most major genlocks and editing controllers.

Final Thoughts

For those of you who have dabbled with the idea of creating your own music for your videos but have been afraid because of a lack of musical training, the SuperJAM!/One-Stop combo is tough to beat. In fact, I would go so far as to recommend that if you do not have any previous musical experience

or other MIDI sequencing software, that you also put SuperJAM! 1.1 on the "must have" list. Once you play with the included demo version of SuperJAM!, you will find yourself wishing to save your work in progress, something that can't be done with the demo version.

I also recommend purchasing a reverb unit. The hallmark of a professionally-produced musical score is a final mix that has "presence" (sounds as though it were recorded in a performance hall). Adding a digital reverb with MIDI interface lets you achieve and control this effect. If tapping the One-Stop output, you can use a reverb unit that doesn't have MIDI control and it will still enhance the overall sound.

For those already familiar with MIDI on the Amiga who would like to add the wealth of instrument sounds that the E-Mu Proteus engine offers, the One-Stop is a great choice. Its 16-bit fidelity and variety of usable and editable sounds make it a bargain when compared to a standalone sound module with the additional price of a patch editor factored in. Blue Ribbon, a longtime leader in innovative MIDI software, has hit another home run; this time with hardware that integrates seamlessly into their current product line.

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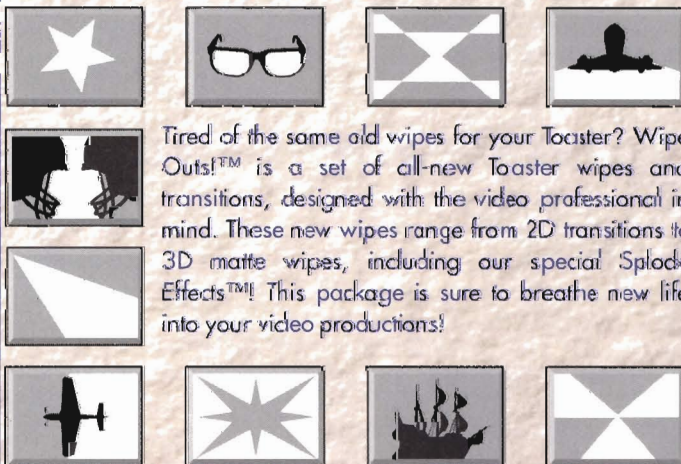
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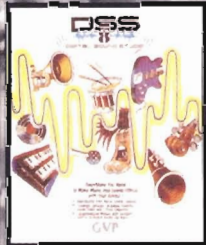
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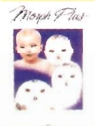
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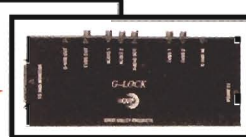
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PIXEL 3D PRO

Polygonize Your Bitmaps

by David Duberman

LightWave and Modeler are generally acknowledged to be one of the best combinations of 3D software available on any platform. And with the upcoming major revision, they may just become kings of the heap for a while. But even with all that power, there's quite a bit they don't do—such as 2D-to-3D conversion—and that's where Pixel 3D Professional (P3DPro) comes in.

P3DPro couldn't be easier to use. There are two versions (for those with and without accelerated machines), and installation simply involves dragging a drawer from the appropriate floppy to your hard disk. Its predecessor, Pixel 3D 2.0, required you to make certain decisions before loading anything, but programmer Scott Thede has smartened up this version so the front end can automatically distinguish between many different forms of data.

First, it can recognize an Amiga-format IFF bitmap file of up to five bitplanes (32 colors). The program does not load HAM or 24-bit images. P3DPro automatically converts loaded images to planar objects which can then be manipulated in a variety of ways.

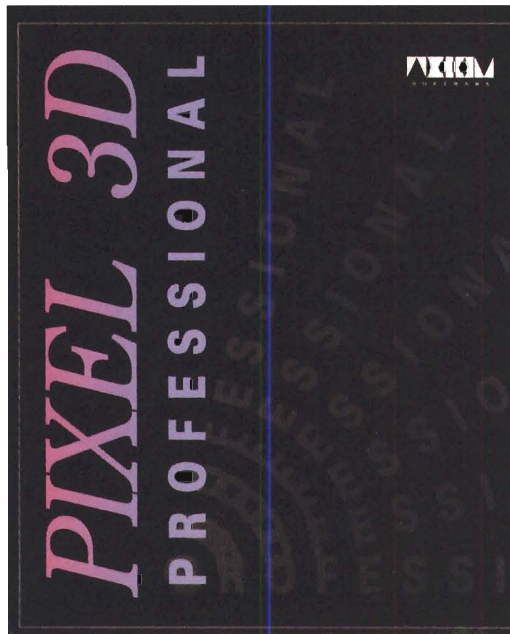
P3DPro can also recognize and load objects in the following 3D formats: LightWave 3D, 3D Professional, Turbo Silver, AutoCAD DXF, Wavefront, Digital Arts, VideoScape Binary, VideoScape ASCII, Imagine, Sculpt 3D, Draw 4D/Pro/Aladdin, Caligari, Vista Pro DEM and Scenery Animator DEM. It can save in any of these formats as well, plus in a Router-Bit format used for beveling, described later.

Since text conversion from 2D to 3D is probably the program's most common application, P3DPro has a special provision for direct font conversion. Using the Text tool, you can type a phrase from the keyboard, select a font, and have the program automatically create the 3D text for you. This is where another major improvement really comes in handy.

When converting bitmapped text, no matter how large, a certain amount of smoothing must be applied to avoid stairstep zigzags on curves. In previous versions, smoothing had to be applied to all or nothing, but now you can apply smoothing only to selected letters or parts of letters. For example, in the word VIDEO, a large amount of smoothing would be applied to the straight angled edges of the V, and less to the curved parts of the letters D and O. But I'm getting a bit ahead of myself.

Getting Loaded on Bitmaps

In most cases, you load two-color images, such as filled text outlines (or use the Monochrome option—discussed below). Logos digitized with the Toaster and converted to RGB (IFF24) with ToasterPaint can be reduced to two colors with image-processing programs such as ASDG's Art Department Professional and Black Belt's ImageMaster. And, as suggested by the manual, they should first be cleaned up with a bitmap editor, also known as a paint program. The best all-around paint



program available for the Amiga is Deluxe Paint. If you don't have it, get it. Even crusty old Version 2, which is probably the earliest one that can still be found, is great for touching up and creating images for use in P3DPro.

In the default mode, when you load a bitmap image, P3DPro ignores any pixels using color 0 (or the background color), which is usually black. The program creates discrete polygons from contiguous areas of other colors, faithfully following the stairstep pixel pattern. If you then perform smoothing, you can see gaps between the polygons. Figure 1a shows an eight-color image as originally drawn in DPaint; Figure 1b shows it as loaded into P3DPro; Figure 1c shows the Smoothing requester; and, Figure 1d shows the polygons after smoothing using the Large preset.

Two other load modes are set before loading an image. Monochrome mode sets the program to ignore colors, treating the image as though the foreground and background are simply two different colors. Grid mode creates a "fractal landscape" of your image, with high points where the image is brightest and valleys in the dark areas. You can also set up default values for various sections such as Smooth, Extrude, Bevel and Spin.

You Old Smoothie

P3DPro offers far more smoothing control than any other program. Parameters include Line Smooth to specify the deviation amount, Running Minimum to plot a course through segments smaller than the set criterion, and others such as Running Step and various spline-fitting controls. The Anti Jaggie function helps eliminate stairstep artifacts, and the Vertical and Horizontal Lock controls let you preserve vertical and horizontal segments of the specified size or above. Fortunately, the three useful presets, Small, Medium and Large, let you avoid these details most of the time. Figure 2a shows a letter H that I created in Deluxe Paint in low resolution, using the Curved Line tool. Figures 2b, 2c, and 2d show the polygon after applying smoothing, using the Small, Medium, and Large presets respectively. Figure 2d comes close to what I had in mind, but could use a bit more smoothing.

For best results with curved and intricate designs, create your bitmap in the highest resolution possible. But keep in mind that the maximum bitmap size that P3DPro can use is determined by the image size and the amount of free Chip RAM in your system. Also, P3DPro reserves 512K of Chip RAM for itself. In my system with one megabyte of Chip RAM, I could load a two-color image of 1800 x 1800 pixels, but not one of 2000 x 2000 pixels.

Extruude Me!

After Smoothing, the next commonly-used tool is Extrude. This process is analogous to pressing PlayDoh through, say, a star-shaped hole to create a solid star shape. Figure 3 shows P3DPro's Extrusion Settings requester. As you can see, the three extrusion methods are Normal, Color and List. Normal extrudes all polygons by the specified Extrude Value. You can optionally specify distances (in pixels) for



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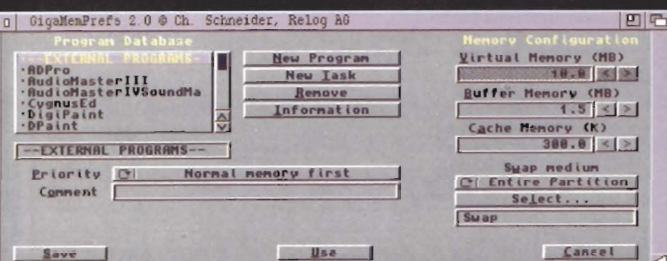
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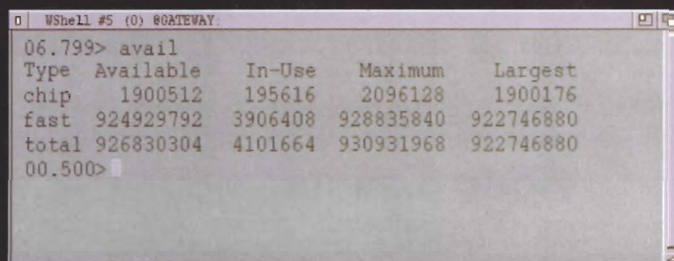
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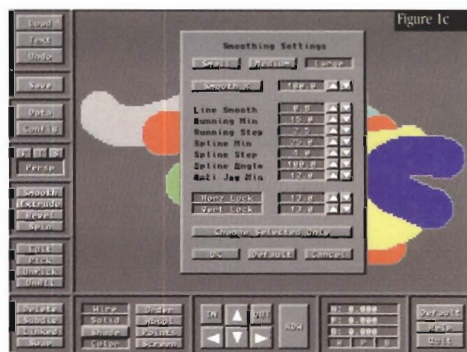
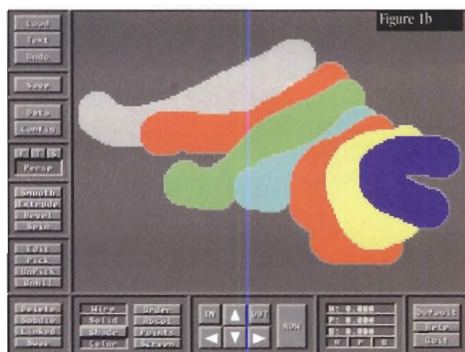
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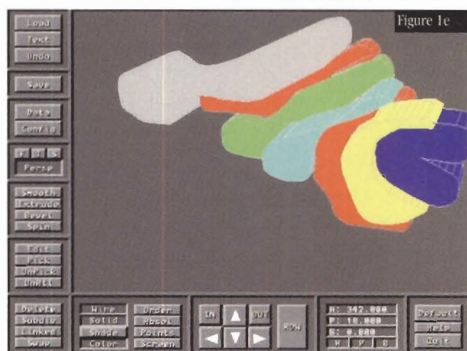
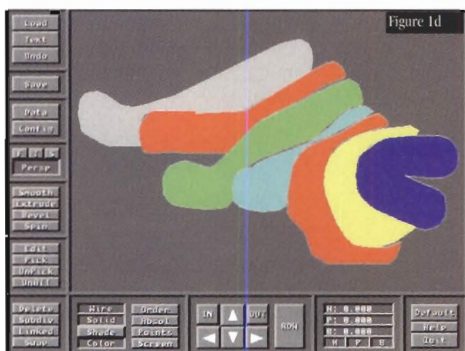
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the extruded polygons to be skewed horizontally and vertically (Offset X and Y), as well as colors for the extruded front, side, and rear surfaces. Colors are specified in 24 bits using sliders or keyboard, although the program can display only a few of these.

The Color extrusion method automatically creates objects of varied height, using the polygons' original color's brightness to determine the shape's height as a percentage of the total Extrude Value. Thus, for an Extrude Value of 100, areas with colors of medium brightness would extrude to about 50 units. Figure 1e shows the drawing from Figure 1a as extruded 80 units using the Color method.

Finally, the List extrusion method, while the most labor-intensive, offers the user maximum control over how the original image's colors are to be extruded. For each of up to 31 colors (remember, the background is ignored), you can specify the extrusion amount, X and Y offset, and different colors for the front, sides and rear.



One's Bevel Best

The refined 3D logo designer knows that simply extruding a phrase isn't enough. To give it that sophisticated edge, bevel it. P3DPro can bevel an extruded object's front and back surfaces with optional phong smoothing (see Figure 4a). This process actually removes the beveled surface, creating a new

smaller one in front of (or behind, in the case of the rear surface) the original, connected to the letter's sides with new angled surfaces. Actually, while the new surface is smaller, its holes are bigger to create a uniform flared appearance to the sides. The Bevel Inset value determines how far "inward" the beveled surface goes, and the Bevel Height sets the new dis-

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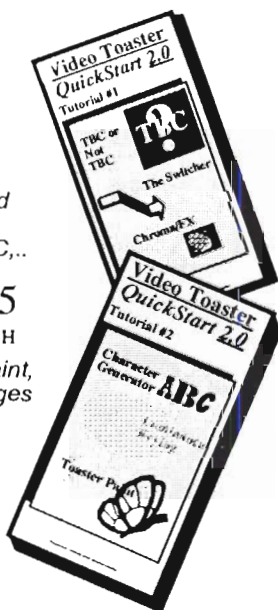
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tance in front of or behind the beveled surface. Since these two actually form right angles to each other, you can use Archimedes' Principle ($a^2 + b^2 = c^2$) to determine the width of the beveled edge, or the side opposite the right angle.

What if you don't want a simple flat surface connecting the new front surface to the sides, but prefer something rounder or more ornate? P3DPro's unique Router Bit option lets you specify a polygon whose right side determines the shape of the beveled edge. Figure 4b shows an example of a router bit polygon; Figure 4c shows text extruded with no beveling; Figure 4d shows text extruded with simple beveling; and, figure 4e shows the text extruded with the router bit from 4b. When using router bits, keep in mind that the best results are often obtained with simpler rather than more complex outlines. Remember that each polygon in the router bit outline is multiplied by the number of polygons in the extruded text's outline.

Shape Spinning

The Spin command is comparable to Lathe in other 3D programs; take a shape, replicate it around an axis, connect the edges, and presto! Instant goblet, urn, table leg or other round object. Figure 5 shows P3DPro's Spin Settings requester. You can spin on the X, Y, or Z axis; note that the corresponding requester buttons suggest each's orientation. You can select a spin point near the object's top, middle or bottom, or left or right side. You can set the number of sections, as well as the beginning and ending angles. You can also set an amount by which to offset the spin point from the spin axis, as well as the depth to which the spin goes in the X, Y, and Z planes. You can also set colors for side surfaces, as well as for front and back

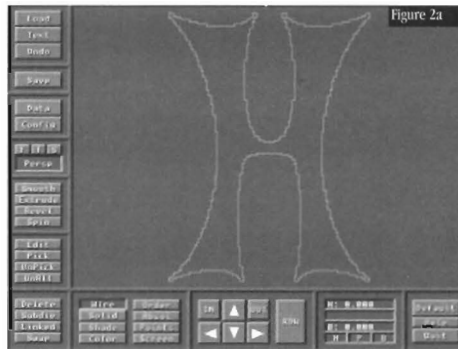


Figure 2a

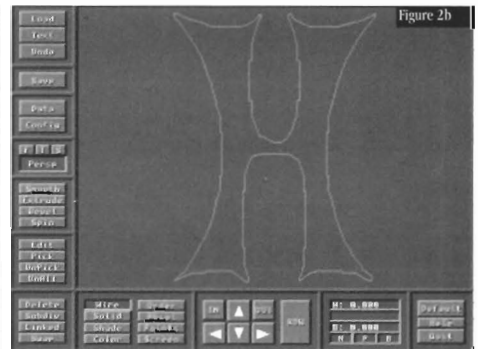


Figure 2b

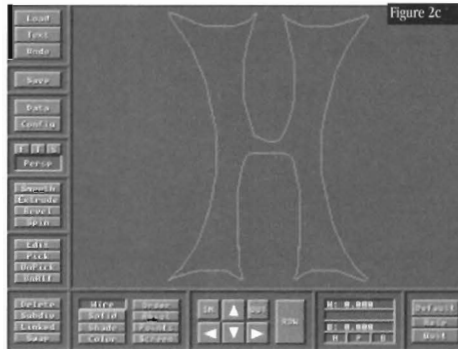


Figure 2c

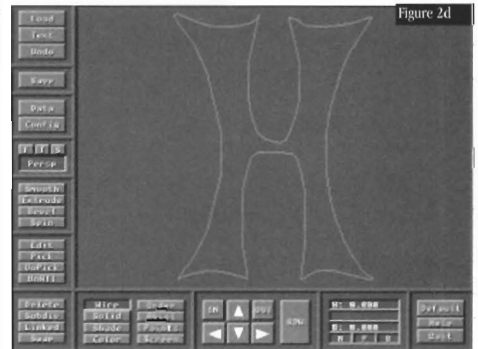


Figure 2d

surfaces in the case of an incomplete spin. Note that, as with Smooth and Extrude, spinning can be applied to selected object parts as well as entire objects.

Data Ain't All!

Figure 6 shows P3DPro's Data Settings requester. Don't be misled; there's a lot of power hidden behind

that modest facade. The requester shows the total number of vertices and polygons, the number of vertices in the largest polygon, and the object's dimensions in pixels.

The first button, Flip, is useful when converting objects from formats that use only triangular poly-

...Continued on Page 108



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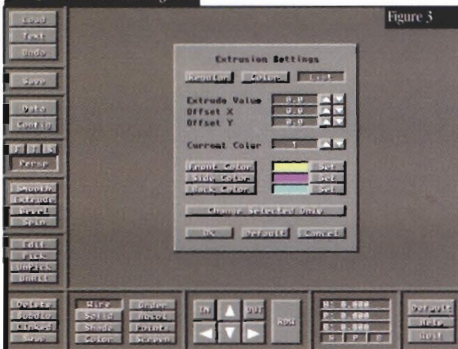


Figure 3

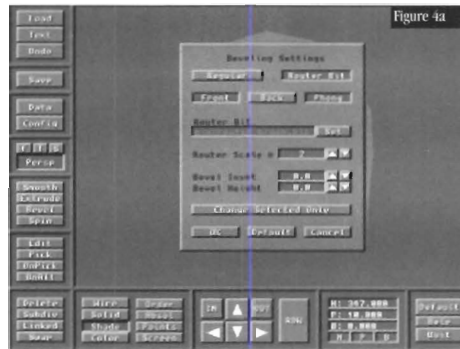


Figure 4a

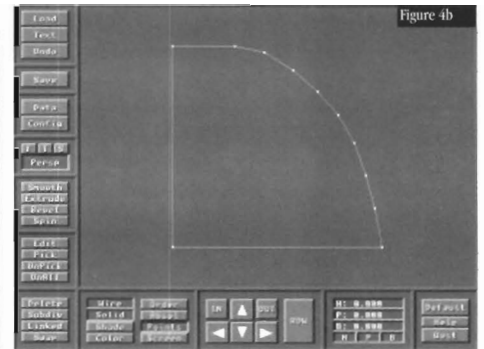


Figure 4b

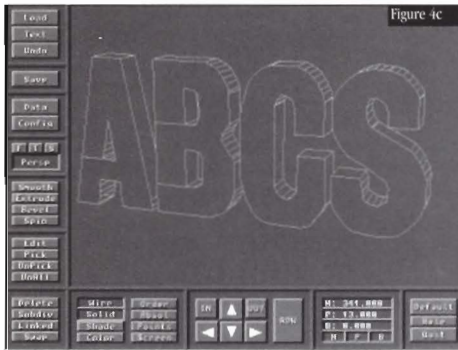


Figure 4c

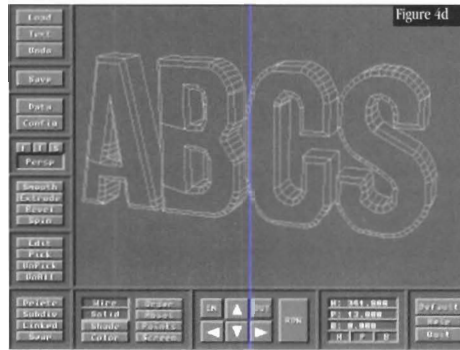


Figure 4d

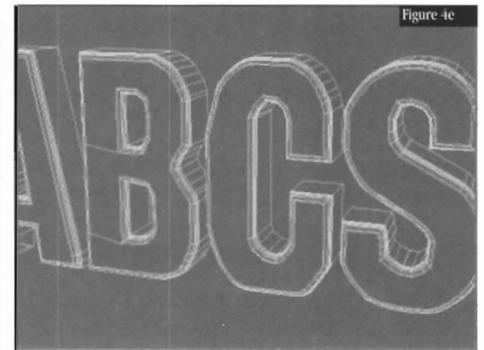


Figure 4e

gons, such as Sculpt 3D and Imagine (which comprise at least half of all readily available 3D clip art for the Amiga), to formats such as LightWave that allow polygons with more than three vertices. In the latter format, if polygons aren't facing "outward," they're invisible when rendered. P3DPro accomplishes the difficult task of figuring out which way polygons are supposed to face, and flips them if they're facing the wrong way. This routine isn't foolproof, so the Double button clones every polygon, then flips it so there can't be any "holes." LightWave has a polygon doubling function built in.

The Divide button splits all polygons with more than three vertices into triangles, which can improve rendering accuracy within the program. This occurs automatically when saving the program in a format that requires triangles, such as Imagine or Sculpt. The Polygon Reduction function converts adjacent polygons at less than a specified angle to each other to single polygons, reducing an object's complexity. Similarly, Vertex Reduction serves to limit overall complexity by specifying an area within which repeated vertices are to be considered redundant. You can also use Data to change selected polygons' color.

Object Editing

Another major new feature is the ability to edit objects on a point-by-point basis. To do this, you must go to one of the three orthogonal (non-perspective) views: front, top or side. You can click and drag individual vertices or groups in a very intuitive way—switching, zooming and panning the view as you go. Unfortunately, there's no provision for hiding vertices, so editing specific parts of very complex objects may be difficult. Also, there is no scaling or rotation. The Subdivide tool comes in handy for adding detail to parts of objects.

Display's the Thing

P3DPro's interface is fun to use. You just click the mouse button on the screen and drag the mouse to change the object's heading, pitch and bank in a very intuitive way using a bounding box. When you let go, the object is redrawn in a perspective view. Display modes include various combinations of wireframe,

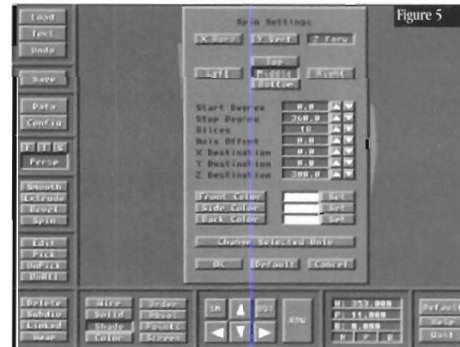


Figure 5

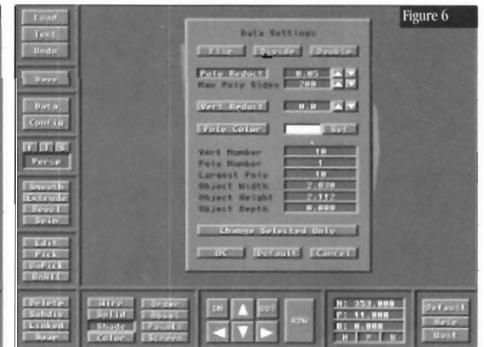


Figure 6

solid, shaded and color (using a limited palette). Other display options include Order, which shows only clockwise polygons; as well as Absolute, which removes perspective from the display; Points, which shows vertices; and Screen, which provides a full-screen display. There are also display arrows that you can click on to rotate or move the display sideways or in and out, as well as a handy "home" gadget to redraw the original display when you've gotten completely lost. There are keyboard equivalents for most of these controls and others, as well as built-in Help screens for just about everything. All in all, a very well-designed program.

The Bottom Line

If all it could do was convert 3D objects between different data formats, P3DPro would be a worthwhile purchase for LightWave users simply by virtue of giving you access to all the great Imagine-format objects available commercially and in the public domain. (Of course, Syndesis' Imagine TIO module gives you the same capability.) And if it only did a great job of converting pictures to 3D objects, it would be a valuable addition to your collection of software tools. But P3DPro does so much more, more than I've even had space here to tell you about, and further capabilities will be added in new versions to be released soon.

I'll go so far as to say that P3DPro should be considered an essential part of every serious LightWave user's software toolkit. It's so easy to use you won't

even need to refer to the manual in most cases. But don't forget to send in the registration card so you can get in on all the new goodies!

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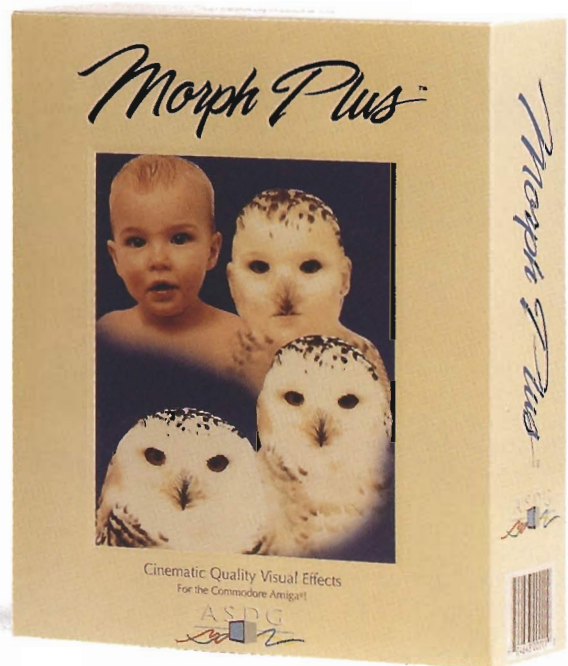
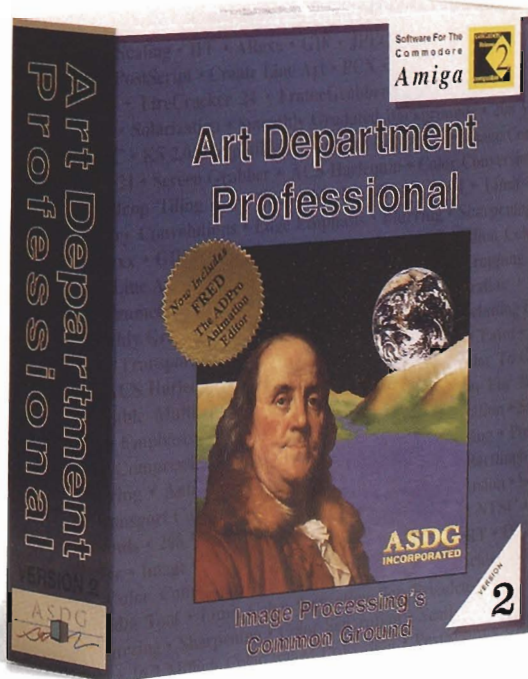
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Interchange Plus

3D Data Conversion Made Easy

by David Duberman

A major part of the Video Toaster's fame can be attributed to LightWave and Modeler, its 3D programs that let you emulate Hollywood special effects professionals in your desktop studio. Modeler is used to create 3D

objects, and LightWave makes it easy to animate and render them with photorealistic quality. Many busy professionals come to the Toaster with the need to broaden their repertoires, but also with overburdened schedules that don't permit learning two new programs, so LightWave invariably wins out over Modeler. While unfortunate, this isn't necessarily a tragedy. Modeler is an important part of the Toaster's 3D software, but it's not necessary ever to touch to the program to create fabulous 3D animations with LightWave. That's because you can load existing objects into LightWave and use them just as if you had created them.

The Toaster software includes a varied and interesting collection of useful objects, including two 3D fonts, a chess set and various household items. Of course, if you need a specific object not represented here, you're back to square one. Perhaps you'll find the required object in a public domain library, or one of the commercial suppliers advertised in this journal. But you might be unlucky enough to find it, but in an incompatible data format, such as that used by the popular Amiga 3D program Imagine, or even one used by some other computer. Or maybe you're an old hand at Imagine and prefer its modeling capabilities, but would like to use some of your custom objects in LightWave.

You might be luckier than you think. With the help of a new Amiga program from Syndesis Corp., you can perform 3D object conversions between a variety of formats, create 3D phrases with different fonts and do much more.

InterChange Plus is the product of years of research into 3D data exchange. True to its forebears, it uses a modular approach. You only need to run the program and one or two modules, also called converters or tools, to avoid unnecessary loading time, ease the update process, and allow for painless expansion. If you consistently use a particular configuration, you can create a script to automatically load only the parts you need. Included is an example script that loads all parts. The program installs easily onto a hard disk and runs from the Workbench, easing memory requirements.

On the surface, *InterChange Plus*' operation is simple. You tell it which objects to load, in which format and where to save them, and then let the program do its thing. As it works, it gives progress reports, but these often flash by too quickly to read. Of course, the program is doing an incredible amount of work, but you're protected from all the details by the foolproof interface.

Here's a list of included converters: LightWave, Turbo, Silver, Imagine, Sculpt 3D, Sculpt 4D, VideoScape 3D, PAGERender, Professional Draw, Aegis Draw,

InterFont, Surface, Statistics, ISHAPE (ImageMaster Shape), Vista, and DEM CAD-3D.

Tools provided are: PointReduce, Scale and GridSnap.

Also, Syndesis offers add-on converters for these high-end formats: AutoCAD DXF, 3D Studio, Wavefront, Digital Arts and Topas.

Note that Caligari isn't included. Since that program can load and save in LightWave, VideoScape, and Imagine formats, it isn't necessary. However, Caligari's hierarchical format isn't supported.

Figure 1 shows *InterChange Plus*' interface. Not much to it, is there? The left side lets you maneuver through your disks, directories and partitions, and the right side displays files selected for conversion. The window on the lower right lets you select the desired converter or tool for output, and the section immediately above lets you assign the output directory. Converted objects use the original's filename plus a preset extension, such as ".lw" for LightWave objects.

In most cases, conversion is nearly as straightforward. The program performs as literal a translation as is possible. That is, it attempts to transfer all points, polygons, and surface attributes

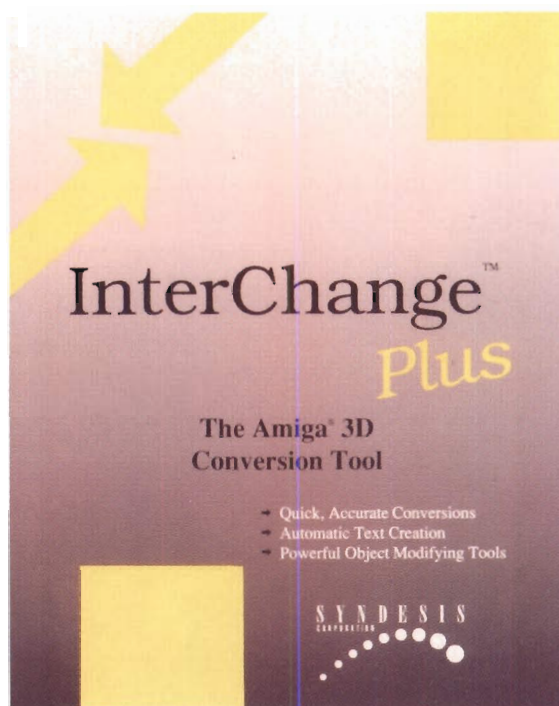
such as color, smoothing and transparency from the original to the new copy as closely as is allowed by the target format. For example, if you're trying to convert an object from a program that allows millions of colors to one that only permits 16, you'll run into some accuracy problems. Another understandable limitation is that bitmap and procedural textures are not transferred, due to the dissimilar ways in which these are implemented in the various 3D programs.

LightWave Hierarchical Conversion

While other programs can convert objects between different formats, none is as accurate as *InterChange Plus*. But where *InterChange Plus* truly stands above the pack is its unique ability to convert between two different hierarchical formats. This is an impressive feature, especially considering the markedly different formats used by Imagine and LightWave.

Hierarchical construction is used to create objects that can be animated internally while moving through a scene. The most common types of hierarchical objects are characters such as people and animals. They're built by connecting parts—such as head, neck, torso, arms and legs—together in parent-child relationships, with parent objects controlling all those below them in the hierarchy. For example, a hand object would be parent to each of its fingers, which could then wiggle independently while remaining firmly attached to the hand, which could be flipping on its wrist.

In Imagine, you build hierarchical objects (called "grouped" objects in the parlance of the program) in the Detail editor, equivalent to LightWave's Modeler. These can be saved as discrete objects, retaining the full grouped structure. If converted to LightWave format by other programs or even Syndesis' own TIO Imagine

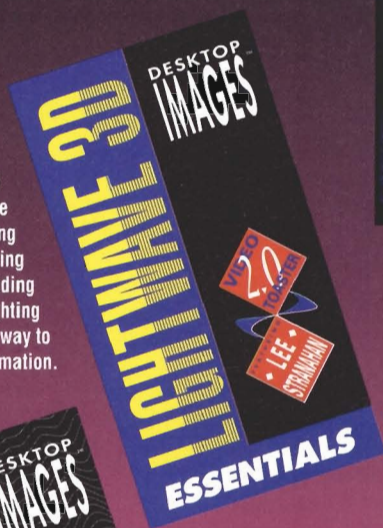


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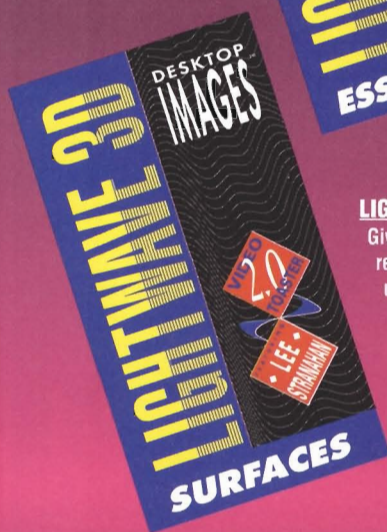
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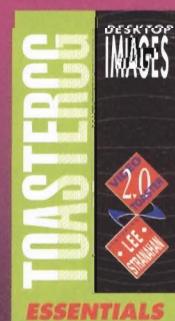
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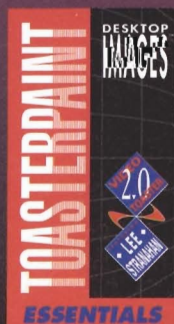
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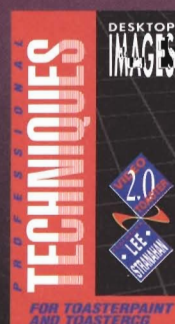
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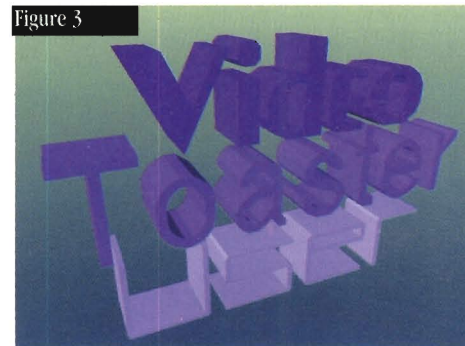
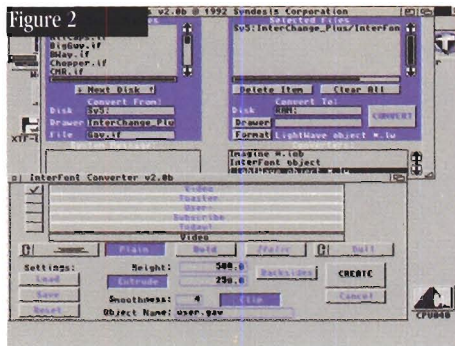
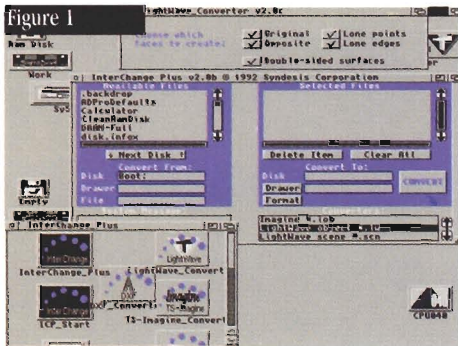
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module (available as an add-on to LightWave to let you load Imagine objects directly), the object loses its hierarchy, with all parts fused together into an immobile monolithic form, incapable of animation.

LightWave also lets you build and animate hierarchical constructs, but only in its scene editor, called Layout, which is equivalent to Imagine's Stage editor. The only way to save a hierarchy is in the scene file, which doesn't contain, but simply refers to objects saved separately.

Complex though it may be, InterChange Plus can handle the object translation between these two very different formats. In the case of conversion from Imagine to LightWave format, it does so by breaking the hierarchy parts up into separate objects, converting them, saving each separately, then creating and saving a scene file that refers to them (all files are saved in the same directory). The program preserves the parts' relative positions and alignments, as well as the location of each part's pivot point. Imagine's

Detail editor is a little more interactive than the Layout/Modeler combination for building and testing hierarchical objects, so it's nice to be able to move them into LightWave for rendering. One thing InterChange Plus doesn't do, however, is convert coplanar triangular polygons created by Imagine into larger polygons for faster rendering in LightWave.

Because of the different ways in which polygons are rendered in Imagine and LightWave, polygons from the former can sometimes seem invisible when rendered in the latter because they're "facing" the wrong way. The LightWave Converter window lets you set whether the new LightWave object's polygons are to face in original direction or opposite that. Of course, typically a converted object will only have half of the polygons facing the wrong way, so you can elect to have all faces created facing both directions (in essence, back to back). Better yet, you can select the "double-sided" flag implemented in LightWave 2.0, which saves memory. The program turns all of

these on by default, so I recommend turning off either the Original or the Opposite flag if using LightWave 2.0. Other flags in the Converter window, also on by default, let you convert lone points to single-point polygons and lone edges to two-point polygons.

Other Converters

One of InterChange Plus' most interesting converters is the Surfaces Converter. This creates a text file that describes all of an object's basic surface attributes. Each item in the list names the surface and gives numerical values for color, reflectivity, transparency (called transmit), overall specularity and specular color, diffuse reflection, glossiness, and whether the surface is smooth and polygons are doubled. Of course, some programs, such as Imagine, don't name their surfaces, so InterChange Plus intelligently creates names based on the color values, such as "Strong Greenish Blue" or "Purplish Red."

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AmigaDOS Shell's command line, you can specify a surface file to override the incoming surface values. For example, if you know your incoming object is black and white and glossy, and you want it to be red and blue and flat, it's a simple matter of setting it up in the surface file. Just identify the new surface and its characteristics, then use the keyword "LOCAL" and then identify the surface to be replaced. This extremely powerful feature offers automatic global surface changes, a capability not found elsewhere. Surface overriding can also be used when outputting objects in the Sculpt, VideoScape, and InterFont formats.

Which brings us to another interesting converter. InterFont was originally a standalone program from Syndesis, designed for creating structured fonts for CAD and 3D programs. While no longer available, the format lives on in the form of 23 InterFont-format fonts provided with InterChange Plus.

The InterFont Converter's interface, shown in Figure 2, lets you enter up to five lines of text, each containing as many as 49 characters. Each line can be justified left, right, or center, and styled plain, bold, or italic, or bold italic. Also, attributes can be set to Dull, Shiny, Mirror, Luminous, Glass or Wireframe. You can set the height, smoothness of curves—the smoother the object, the more complex—and extrusion depth. Figure 3 shows three example InterFont fonts rendered in LightWave—from top to bottom: Party, Helv, and Gav.

A few words are in order about some of the other converters. VideoScape is LightWave's predecessor (also by Allen Hastings). Sculpt 3D and 4D were popular several years ago, but there are still quite a few useful objects around in that format. LightWave can

load both formats directly. The Vista DEM Converter can read landscape files created by and for Vista and Vista Pro and support programs, so you can convert actual digitized 3D elevation maps (e.g. Mars or the Grand Canyon) for use in your LightWave animations. The Statistics Converter produces a text file listing all vertices, edges, faces and colors. InterChange Plus' Tools are mostly self-explanatory: the PointReduce tool removes duplicate points; the Scale tool lets you resize objects on any or all of the three axes; and the GridSnap tool realigns an object's vertices to the intersection points of a 3D grid.

InterChange Plus' 130-page manual contains both a table of contents and an index. There's plenty of helpful material, including chapters on getting started, and tutorials on preparing and performing a conversion. Explanatory material includes chapters on 3D concepts, InterChange Plus' internal data format, and answers to common questions.

There's no question that InterChange Plus is a veritable toolbox for the LightWave 3D artist. If there's an object out there that you need, with this program you can harness it and make it yours. There's no muss or fuss; a few clicks and you're there. What could be better?



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The ToasterPaint Chronicles: Achieving Impact with ToasterPaint

by R. Shamms Mortier, Ph.D.

This tutorial assumes that you have a general working knowledge of the Toaster and are also familiar with ToasterPaint. If this is not so, please spend some time acquainting yourself with the Toaster manual's ToasterPaint section. With this tutorial, we begin a series of articles on how Toaster users can make the best creative use of ToasterPaint. We will guide you through several levels of usage, from treating font screens to painting and colorizing objects and backgrounds. Follow along carefully and increase your creativity and productivity with the Video Toaster.

Making Your Own Multicolor Fonts

It's no secret that ToasterPaint does not work with multicolored fonts. There are ways, however, to get all of the colorful attributes that are the mainstay of multicolored fonts without paying the price or suffering the creative rejection. This tutorial will show you how to achieve four interesting textures for use in ToasterPaint text, and two different ways to apply the textures to the letters. You'll also learn how to create the look of weathered wood, chromium steel, mayan gold, and "silk and lace" to our letters.

Weathered Wood

After booting up the Toaster and getting into ToasterPaint, you should set the Range's first color to a light tan and the last color to dark brown. These colors are available from the default ToasterPaint palette. This should give you a nice smooth wood-like range of tints in the Range colorbar on the right. Now select the rectangle and the fill-shape modes.

Select the Transparency and Warping Control Panel icon (the square/circle on the lower left of the tools panel). At the top of the Transparency Controls section on the panel's right side, you will see four areas: a filled rectangle, a circle, a vertical bar and a horizontal bar. Choose the horizontal bar.

Still in the Transparency Controls section, we will experiment with two basic wood backgrounds. For the first, set the left vertical slider at the top position, and the right vertical slider at the middle position. Now draw a rectangle on the screen (see Figure 1A). This background has the look of wood that has a horizontal-lighted central portion bordered by darker edges. Move the horizontal bar to the top of the active area and draw another rectangle. Notice that the lighted area of our wood also moves towards the top (see Figure 1B). Keep these creative options in mind when



designing letter fills. Now set the left and right sliders to the middle position, and move the highlight bar to the top of the active area. Draw a rectangle (see Figure 1C). For our final basic example, draw a rectangle by setting both sliders to the top position, and choosing the "circle" highlight (leave the hotspot in the center of the active area). You should see a rectangle like that in Figure 1D. Save your painting as Example1 (use Save RGB).

Now the trick is to add some texture to our "wood" samples (see Figure 2A-D). This can be done in many ways. One way is to add striations to make the wood look textured. We'll add our textures over the Figure 1 rectangles, producing the examples in Figure 2. Starting with the rectangle you made like Figure 1A, add random lines (choose the smallest brush for drawing, and set its transparency at about half). Make some of the lines form a "knot" as shown. We'll make the second sample look more like a piece of paneling by using the straight line tool (fill off). The third sample will become a piece of weathered and somewhat rotten wood. Use the background color and the freeform-fill option to "eat away" at the wood's edges. Then go back over these "holes" with the Blur setting to soften them up a bit. Now we're going to add a gray wash to some areas in this third sample. Select a light gray color and Normal mode, then set the transparency levels at left-middle/right-bottom. Choose filled rectangle and wash

areas of the wood. You will see gray blotches appear. For the fourth sample, just add little splotches (small brush) of dark brown at random, rather like particle board.

Now the object is to blur and unsharpen the wood, so that it loses that "computer look" and attains a semblance of reality. Randomly apply blurs and transparent washes over each sample until satisfied. If you've saved Example 2, you can always reload it if you really blow it. Experiment and jot down your attempts. See Figure 3A-D for our final wood looks. By adjusting the colors in your range spreads, you'll be able to emulate different wood types.

Chromium Steel

Steel reminds us of high-tech, of RoboCop—of polished perfection and strength (see Figure 4A). Steel surfaces are easier to create than wood, and we can simulate everything from tin to steel to bronze just by manipulating the palette. In general, soft metals like tin have little sheen and are grayish in color, while steel has blues throughout. Other metals like bronze and gold have oranges and yellows among

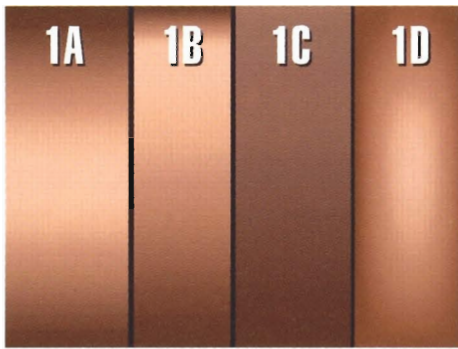


Figure 1

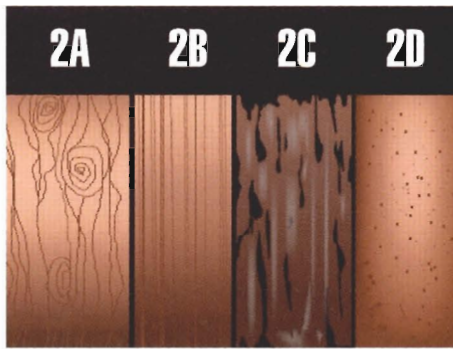


Figure 2

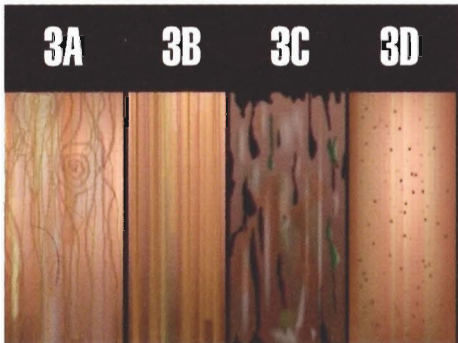


Figure 3

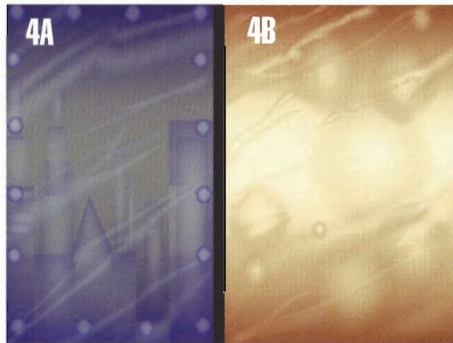


Figure 4

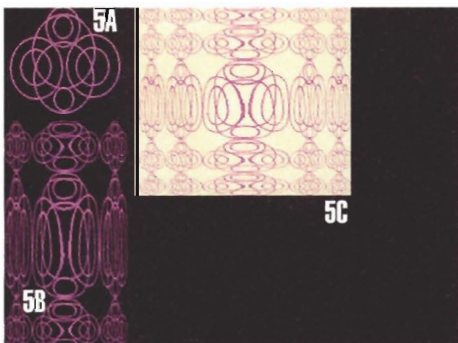


Figure 5

other colors in their palette.

For steel, let's set our Range palette to a 192-224-208 (red, green, blue) bluish-white at the beginning, and a 0-0-112 blue at the end. Use transparency settings of left/half and right/half, and use a horizontal fill mode with a default highlight. Make a large rectangle that takes up half of a ToasterPaint screen. The magic of steel is in its highlights. We can achieve our highlights with a series of transparent washes over the original steel rectangle. These can be applied with a filled polygon brush in an upward left-to-right direction. See Figure 4A for an example of what you might want to attain. Make the highlights almost like lightning bolts. Mimic more reflective zig-zags above those you first set down.

Now, just for effect, draw a filled-cityscape-silhouette wash over the bottom part of the rectangle. This is a common treatment for mimicking steel surfaces. Experiment until satisfied. Add blue washes over the whole surface in a step-by-step fashion. If you want to, add some bolts to an edge by using a large circular brush and a transparency setting that uses a bit more background than foreground color.

Gold has a range of colors that go from light yellow

to reddish-brown, and sometimes tinted with greens. See Figure 4B. (To make copper, just use reddish tints). After drawing a smooth Ranged rectangle in the proper colors mentioned, go in and place random tints of the same range with the circle-fill option. Gold is very shiny, yet diffuses the sun's reflection across its surface. Set the transparency at left/half and right/none. Then use the freeform/fill tool to add more reflections. Gold sheets are usually very thin, so when they bend they also bend the light. See Figure 4B as a sample of what you might achieve.

Silk and Lace

This is a very different texture. We start by creating a ToasterPaint brush which will be used to fill the screen, or portion thereof. Then we treat this filled section. First, create a pattern of overlapping outline circles with a violet-like range of colors (see Figure 5A). Use a fairly small brush.

Select No Background from the Brush menu, then grab this area as a brush. Select Copy Brush from the Swap sub-menu, then select TXMap from the Mode menu.

Go to the Transparency and Warping Control Panel. This time we're going to use the Warp Selector,

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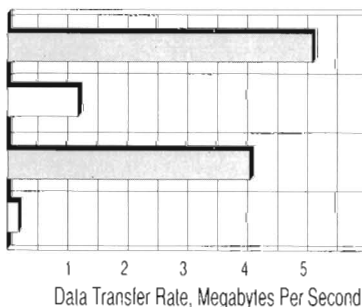
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Toaster Paint Continued from Page 115

the circular area in the middle of the panel. Choose the checkered ball setting (point warping), and the topmost right setting. On the left there are numeric horizontal and vertical controls, which are both set to 1 by default. Set both to 3. Now draw a filled rectangle, and you should see the shape in Figure 5B.

Now draw a plain white or yellow-white rectangle to receive your lacy texture ("Normal" mode). Choose the Fill mode and TXMap again, and fill the rectangle with the textured lace, this time with a 5x5 numeric setting. See Figure 5C.

“Steel reminds us of high-tech, of RoboCop—of polished perfection and strength...”

Making MultiColor Fonts

OK, so you have all of these interesting textures. Now what? First, grab and save each of these textures as brushes (no backgrounds), and store them on disk. You might wish to grab "interesting" parts instead of areas. There are three basic ways to achieve what we're after: using TXMap fills, using RubThru mode to expose background material and using TXMap letters. Each can be varied infinitely through use of the Transparency sliders and with further warping.

The first method requires that you initially write your lettering to the screen, load a texture brush (one of those we just created), select TXMap mode and then the Fill tool. Make sure your cursor is centered on the letter, and click. The texture will be form-fitted to the letter shape, one by one. The second process is even easier in ToasterPaint. Just choose TXMap after a brush is loaded, and go to the lettering requester and type in your message in an appropriate font (use large fonts for best results). The letters will appear with texture fills! The third way gives you the most variance among the letters. Here, we fill a screen with the texture, then use the J command to get to the second screen. Choose RubThru before writing your text. When you place it over the second screen, the area under the letters will "rub through" to that screen, showing the texture. Voila!

Figure 6 shows you some potential results of all of these endeavors.

We hope you stay tuned for more adventures in the continuing episodes of the ToasterPaint Chronicles. Till then, enjoy. See you in ROMulan space!

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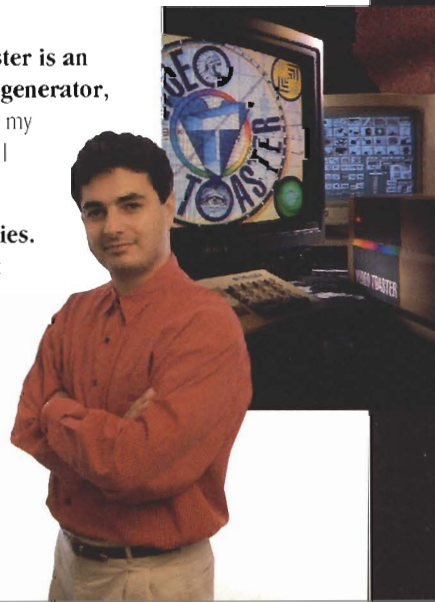
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by David Duberman

FDPro Flight Recorder and DigiPrint Interfaces

If you took a poll of people's secret unattainable desires, one of the most popular responses would probably be the ability to fly like a bird, or better yet like Superman (who isn't at the wind's mercy). Since that's impossible, we invented airplanes. Of course, most of us won't ever be able to fly a plane either, because of time and cost factors. Given all that, it's easy to understand why flight simulation is one of the most popular categories of software for personal computers. There are literally dozens of titles, with new ones appearing almost weekly. While some are combat-oriented, featuring dogfight after dogfight, others are designed for those who like to explore, with varied scenery and missions to accomplish.

What these programs provide is an ultra-simplified form of virtual reality. Now, we're still a long way off from having Star-Trek-type holodecks to play in, but the adventurous few who use 3D programs like LightWave can create much more complex and interesting virtual environments, making them as realistic or fantastical as we like, and then wander through them at our leisure. True, in most cases this isn't in real time yet, but it's worth the agony of single-framing to be able to design a world and then move through it.

Wouldn't it be great to be able to fly through it too? Just like a fighter, performing loops and rolls, diving and banking, and so on. Can you imagine all the work setting up an animation sequence like that?

It would be easy with an actual flight simulator, though. The smart folks at Jaeger Software, makers of popular Amiga flight simulator *Fighter Duel Pro*, realized this before anybody else did. Shortly thereafter Jaegerites Bill Manders, Matt Shaw and Ted Jump brought forth their new brainchild, *FDPro Flight Recorder*.

Originally conceived as a simple flightpath recorder, *FDPro Flight Recorder* has evolved into significantly more. You can record demo data, which lets you recreate a flight within the program, as well as flight data which saves motion as well as all changes in heading, pitch and bank 30 times per second into memory. Its operation is automatic and transparent to the user; you simply tell it which data to record, and it tells you how much recording time is available. With my 17-megabyte Amiga, I had well over an hour available; but, of course, you normally wouldn't use more than a few minutes. The minimum amount of memory required is three megabytes.

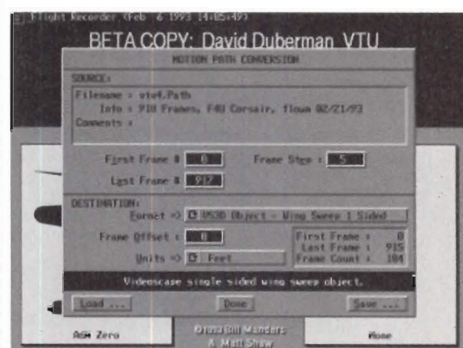
The flight simulator lets you pilot a WWII-type prop fighter, take off and land from various surfaces, and engage in combat against computer- and human-controlled enemy fighters. Among the 16 different prop fighters from four different countries are the F4U Corsair, P51 Mustang, Hurricane, Spitfire I and IX, the infamous Japanese Zero, and three German planes. One of the nifty things about *FDPro*, inherited from its ancestors, is the modem option—you can dogfight against a friend over the phone lines. If that's not convenient, you can set one or two computer-controlled enemy fighters. You can select planes for all, or let the computer do it for you.

To really fly this bird right, you need an analog joystick and an adaptor. The first time I ran the program, I used a digital joystick, the traditional type used for most Amiga games. The flight recorder part worked great, but the flight control, as so often in the past, was less than satisfactory. More recently, I used my \$9.95 Bondwell analog joystick with DigiPrint's new analog joystick adaptor. This plug-and-go unit works with nearly all IBM-type analog joysticks (the popular Thrustmaster is a notable exception). There's

nothing to adjust except a three-position switch to accommodate for slightly different joysticks. The default center position worked perfectly, and I actually had much more control over the planes in *FDPro Flight Recorder* than in most of the IBM flight simulators I've tried. Using an analog joystick with software correctly written to handle the signals is an exceptional experience. If you've been frustrated with computer-based flight simulators in the past, I highly recommend getting the analog adaptor from DigiPrint, plus of course an analog joystick. If you're a LightWaver, get *FDPro Flight Recorder*; otherwise, get *Fighter Duel Pro* and be ready to change your opinion of the genre.

Incidentally, another use for an analog joystick with the DigiPrint interface is as a remote jog-shuttle control for popular editing systems, including AmiLink. Also, if you want a high-quality mouse for your Amiga, DigiPrint has a bus mouse adapter that lets you connect upscale PC bus mice such as the famous Logitech. You'll appreciate the added precision if you use your mouse for graphics.

Once you start the simulation, you can just fly



around, try to land, engage in a dogfight, or whatever. If recording data, the screen shows your X, Y, and Z position as well as your current heading, pitch, and bank values plus frame number, all with constant updates. If the recorder runs out of space during the flight, the program stops and displays a message telling you to reboot the system. To stop before that, use the same procedure—reset the computer. Then, if you run *FDPro Flight Recorder* again right away, and if the data can be recovered intact, the program first displays file requesters that let you save demo (internal playback) data as well as flightpath data files for you and any foes. In both cases, the requester shows the size of the file to be saved—a helpful touch. You can also save comments with each file.

FDPro Flight Recorder's Convert Path menu item brings up the requester shown above. From here you load a flightpath data file, decide which part to use (First and Last Frame number) at which resolution (Frame Step), and the format to save it in. The default format is full LightWave flightpath, which saves all positional and rotational information. An alternative is Chase Plane, which follows the path but always faces forward. Other choices for LightWave users is to save the path in the form of a physical 40-foot-wide "skyway" (the path swept by the plane's wingspan as it flew), with either one or two sides. This makes a great roller coaster template. Additional motion file save formats include Imagine and Vista Pro camera motion, and the program can also save Imagine-format "wing-sweep" objects, plus single-line paths for extrusion. Imagine users can create a tunnel in the sky!

FDPro Flight Recorder could be one of the most

useful tools ever for LightWave animators, especially those who require precise vehicular motion simulation. While only the first release, the program is planned for use by Joe Conti's Toaster-based special-effects production house that's working on Steven Spielberg's new TV show *SeaQuest*. Now is the time for professional animators to get in on the ground floor and help improve a revolutionary product—one for which big changes are already in store.

Here's my list of suggestions: One important factor missing from FDP Pro Flight Recorder is the ability to interact with your 3D environment. It's not realistic to expect that you could create a complex 3D environment and then be able to fly through it in real time. However, it might be possible to load a LightWave scene and just create boxes wherever there are objects, so you could fly around them. It would also be nice to be able to perform translation, scaling and rotation of paths, and to be able to set different widths for the path objects—they're too string-like as is.

By the way, if you already have Fighter Duel Pro, contact Jaeger about upgrading to FDP Pro Flight Recorder.

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Taming the Wave

Taming the Wave is a long-running VTU column about LightWave 3D written by professional animator David Hopkins. It's also the name of Hopkins' new "training system," which consists of two videotapes, two disks of software and a manual. If you've ever wished for an expert to help you learn all aspects of this fascinating program, watching these tapes as you work could be just the ticket.

The longer tape, about two hours, is a Video Reference Manual to LightWave 2.0. After a few demo animations and a brief personal history, Hopkins begins by introducing us to basic 3D concepts. Accompanied by helpful 3D pictures and animations,



he describes the three axes of motion as well as the three types of rotation. The rest of the tape consists of a comprehensive guided tour of LightWave's interface.

The first section discussed is the Objects panel. After briefly describing how LightWave objects are con-

structed, Hopkins starts right in on the actual command buttons such as Load and Save. Here, as in almost every instance, he gives us a lot more than the basic manual description. For example, we're told what happens when you load the same object twice, with a graphic example for emphasis. He offers useful suggestions, such as how to set the maximum number of polygons to save memory.

It's in the context of the Object Motion control that we're first introduced to tweening, which is how LightWave accomplishes animation. This discussion, as well as most others, is accompanied by helpful illustrations. Next is a discussion of the Metamorph controls. Then, while learning about Dissolve, we learn a trick to avoid visual glitches while fading an object in or out.

We close out the main Objects panel controls with an informative discussion of the Shadow options.

Following objects, we move on to the Surfaces panel. The discussion of Luminous surfaces is most interesting, suggesting that they're useful for cartoon-style animation. However, at this point I noticed a mistake. Hopkins offers a somewhat spurious explanation of diffuse reflection, which implies that the Diffuse value determines the amount by which light hitting a surface would diffuse or spread out. He then goes on to define diffusion as specularly. Actually, the Diffuse value simply refers to an object's overall illumination value, independent of its coloration. The most effective way to apply LightWave's Diffuse surface property is with a texture map, which gives you precise local con-

...Continued on Page 120



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Toaster Bites Continued From Page 119

control over an object's brightness.

Fortunately, this mistake is the exception, not the rule; overall, the discussion of the Surfaces controls is accurate and quite helpful. In most cases we're shown groups rotating smooth-edged cubes demonstrating different values of attribute under discussion, making it easy to compare results of varying the setting. This tape truly takes advantage of the video medium, presenting information far more effectively than would be possible in a medium, such as print, that doesn't allow full-color animation. On the other hand, in examples I would have used spheres as well as cubes, for a better idea of how things work on different shapes.

Following this is the all-important topic of lighting. The beginner is gently walked through each setting in turn with extensive explanations and many animations, and should have few questions, if any, after having watched a few times. Next comes Camera, and then Record, with explanation of the various ways of preserving your LightWave animations.

Then we have an exhaustive look at LightWave's staging area, the Layout section. This is the part of the tape during which it's most important for you to load up the program and a sample object or two, and follow along. You'll be stopping the tape a lot, but that's OK. If you do this and pay attention, you'll probably end up knowing more about LightWave's nuts-and-bolts operation than most people.

The rest of the training system's video component is two tutorials on the second tape. The first demonstration, on texturing, takes us step-by-step through the process of adding color and a wood texture to a child's block—with explanations all along the way.

Then comes a full animation project. First we're shown the animation several times: As the camera moves around a giant letter X, doors on the sides open, rods emerge to either side, and the words Negative and Positive flash on the letter's left and right sides. The tutorial takes over an hour and covers a broad range of techniques including metamorphing and lighting. Again, we're given reasons for each step, so we can fully understand why it's performed. This is an ideal opportunity to see an expert's actual working methods.

The tape ends with a cute animation, entitled "Gumballs With an Attitude," which we're challenged to recreate.

The two disks of software contain, in addition to the files used in the tutorials, a number of interesting and potentially useful goodies. These include two 3D fonts contributed by Unili Graphics; some small seamless texture maps for tiling from JEK Graphics' ProFills; a Camaro object from Viewpoint Engineering; and, for those who can't quite get it, the scene file for "Gumballs With an Attitude."

Finally, the 47-page manual contains short question-and-answer sections on LightWave's various parts, some charts and tables reprinted from the LightWave manual and a short metric ruler.

The idea behind Taming the Wave is to convince you to start using LightWave and overcome your inhibitions by demonstrating how easy the program really is to use. It can be kind of scary at first, but if you pay close attention to this tape and follow along, making liberal use of the Pause, Stop, and Cue controls (and several grains of salt), you too can become an accomplished LightWaver. In this, Taming the Wave succeeds admirably. However, keep in mind that the new LightWave will be here soon, many of whose

features are not covered.

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AG 1960 Video and Toasty Disks

Andrew Timmins of Kingsway Productions is a busy young man. Besides working full-time in video production, as he has done for the past 10 years, he runs the Silicon Valley Video Toaster/Desktop Video Users Group. The group, which he started and for which he publishes a great newsletter, has 45 disks of freely-distributable Toaster-related software, called the Toasty-Stuff collection, available at very low prices. On top of all that, Timmins recently produced an instructional videotape about the Panasonic AG-1960 VCR.

The videotape, titled *Secrets of the Panasonic AG-1960*, is an in-depth guide to what many pros consider to be the best editing deck by far in the \$1,000 price range. The AG-1960 is a popular S-VHS editing VCR with a jog-shuttle control, hi-fi sound and many other advanced features. While not single-frame-capable, it's more accurate than most other comparably-priced decks. It's so popular that a third-party market has grown up around it, much like the one attracted by the Video Toaster. Consequently, part of the tape discusses these accessories and modifications.

The tape begins with Timmins talking about the deck and the video, and how he's going to keep things lively by informing us of lots of secret tips about the AG-1960. The view then switches to various sections of the deck's control panels and port areas while Timmins discusses each in detail. He doesn't just give dry descriptions from the manual, but provides suggestions for each's use in day-to-day applications as well as tips for special situations. It's like sitting down with a friendly pro who really knows what he's talking about, and who wants you to be aware of every aspect of the deck's use. As Timmins talks about the various sections, camera shots show the relevant groups of controls. Instead of filling the screen with a closeup of each control or connector as it's discussed, the item under discussion stays fully lit while the scene darkens around it, which lets you see the item in context, so you know where it is in relation to the adjoining controls.

The tape covers every one of the AG-1960's buttons, sliders and ports, including its remote control. In cases where Panasonic's manual isn't quite correct such as in the remote's Memory-Repeat-Search function, Timmins points it out and corrects the information. He also talks about remote-only functions, such as Reverse Play and Frame Advance.

Timmins' detailed discussion of important topics such as use of the jog-shuttle control in insert editing and the different types of audio tracks actually constitutes a mini-primer on video technology, so this tape could even be valuable for people who don't own the AG-1960.

The section on accessories and modifications shows how to use the AG-1960 with an audio mixer and a Future Video edit controller. If you add a time code reader/generator to the edit controller, as shown in the video, you can improve frame accuracy, or index existing footage to help you find particular scenes more

...Continued on Page 122

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Toaster Bites Continued from Page 120

easily. Other add-on products, demonstrated by Mike Ingoglia and Michele Fontana of HT Electronics, include the Amilink CI editing system in conjunction with the Video Toaster's Switcher and the PC-based Matrox Personal Producer. Also discussed are three major audio modifications.

This tape more than fulfills its promise and should be considered a must purchase by anyone who uses or plans to purchase the Panasonic AG-1960 VCR. Even if you've been using one for years and think you know it inside out, you'll probably find a great deal of interest and practical use here. Good work, Andrew! *Note: the Panasonic AG-1960 was recently discontinued and replaced with the new AG-1970, which is mostly identical. Material has been added to the videotape that covers all new features.*

Toasty Stuff

If you're a toastmaster on a budget, or just want more goodies for your Toaster without having to mortgage your home, take a look at Timmins' compilations of public domain disks. There are three *Toasty-Stuff* collections of 15 disks each, priced \$69.95 per set.

The first set includes a number of utility programs (including a great 3D object editor called Vertex), video tools and software for JPEG compression and decompression. One disk contains nothing but ToasterCG fonts—12 styles in different sizes. LightWave objects include a font, various Star Trek space vehicles, human figures, an office scene and a number of objects created by LightWave author Allen Hastings. Also present are a number of 24-bit images ideal for texture mapping.

The second set contains mostly 3D objects and 24-bit texture maps. Images include various types of organic textures, mostly in 24-bit format. Among the objects

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are an alternative chess set, a 3D font, a detailed castle and a terrific model of the Panasonic AG-7400 VTR shown in the accompanying illustration. There's also the latest version of Vertex and an ARexx script for batch image file conversions with Art Department Pro.

The third set starts off with four disks of Kara Fonts—samples of great looking color ToasterCG fonts from the famous Kara collection. Spread out over several other disks is a set of closeup images of various textured paper surfaces captured with a high-resolution video camera and saved in 24-bit format. There's also a number of water-oriented images. 3D objects include more Star Trek ships, a Hitler head (lest we forget) and a dulcimer. And there's a utility for compressing CG fonts to help save precious disk space.

The overall quality of the images and 3D objects that make up the bulk of the Toasty-Stuff collections is quite high. Some of the objects were converted from other 3D formats, and thus may require touch-ups such as smoothing and other surface manipulations to approve their appearance. If you need some particular objects or

...continued on Page 125

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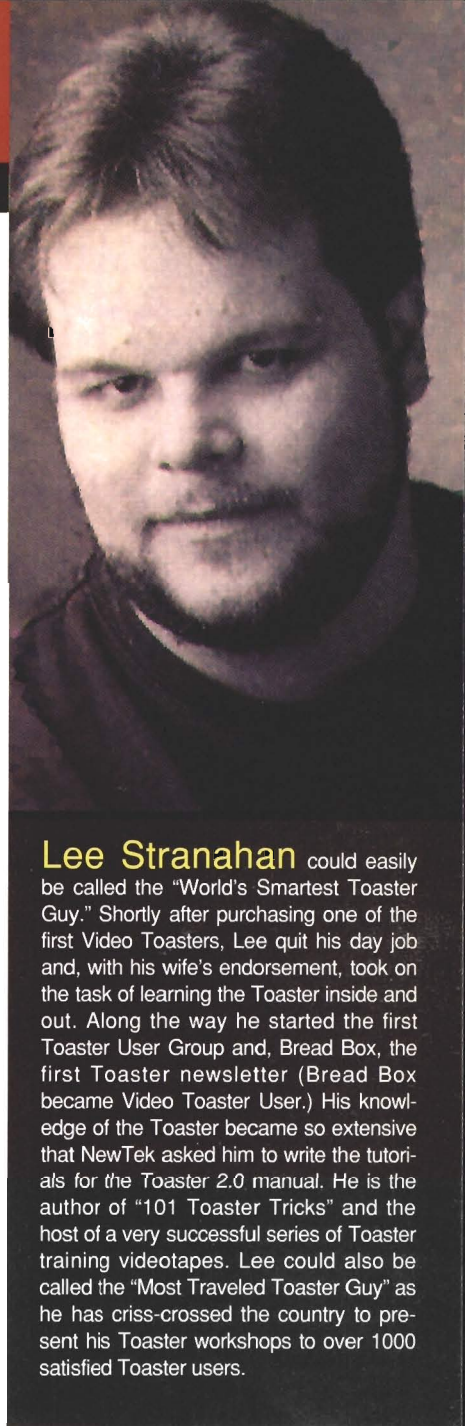
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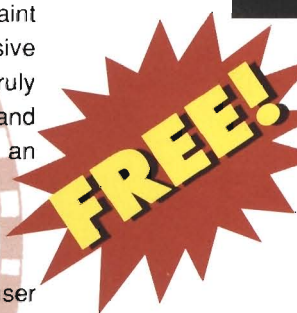
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Lee Stranahan could easily be called the "World's Smartest Toaster Guy." Shortly after purchasing one of the first Video Toasters, Lee quit his day job and, with his wife's endorsement, took on the task of learning the Toaster inside and out. Along the way he started the first Toaster User Group and, Bread Box, the first Toaster newsletter (Bread Box became Video Toaster User.) His knowledge of the Toaster became so extensive that NewTek asked him to write the tutorials for the Toaster 2.0 manual. He is the author of "101 Toaster Tricks" and the host of a very successful series of Toaster training videotapes. Lee could also be called the "Most Traveled Toaster Guy" as he has criss-crossed the country to present his Toaster workshops to over 1000 satisfied Toaster users.



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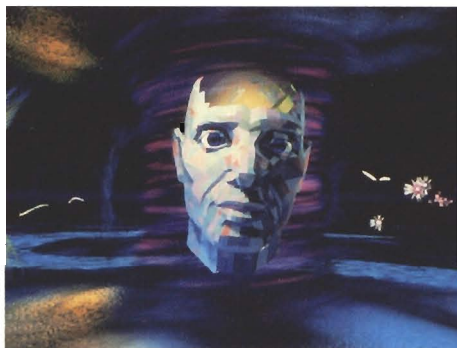
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Although we see 3D computer animation everywhere we look these days, some of us just can't get enough of it. That's the reason behind a recent phenomenon—the best-seller status of a videotaped collection of computer animation called *The Mind's Eye*, produced by Seattle's Miramar Productions. Just out from Miramar, and already a certified hit as well, is *Beyond the Mind's Eye*. This tape contains the best recent com-



puter animation—an incredible variety—shown almost seamlessly, back to back without interruption by titles or credits (shown at the end). The soundtrack is an original rock-oriented score composed and performed by famous solo artist Jan Hammer. While somewhat synthetic-sounding, the music usually does a good job of augmenting the emotional mood evoked by the imagery.

To describe the individual segments would spoil your enjoyment. Well, I will say that some of the particle animation is particularly breathtaking. Get this tape, sit back, relax and prepare yourself for some eye candy of the highest order. But if you use LightWave, you might as well fire up the computer while you watch, because you'll be so inspired by this material you'll probably be pulling all-nighters for the next month.

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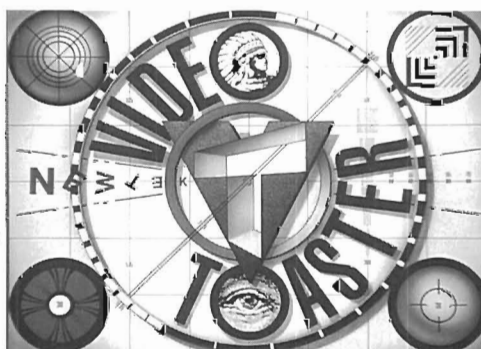
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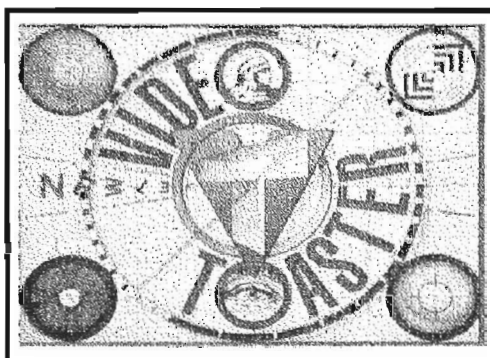
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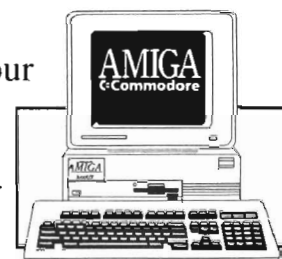
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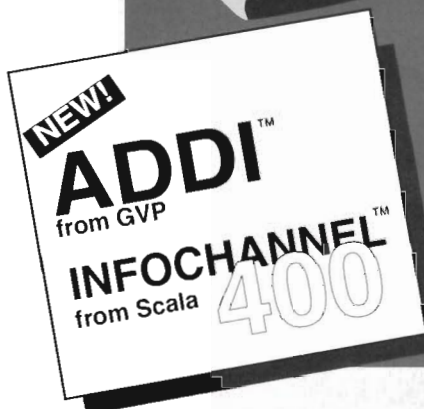
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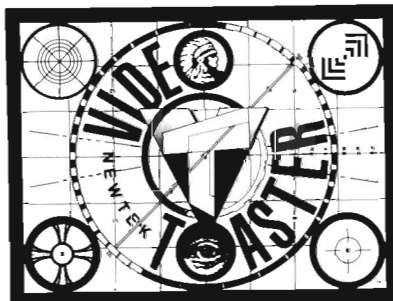
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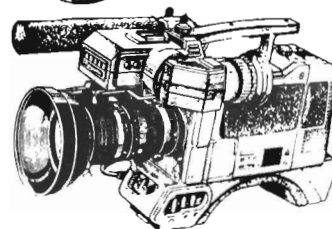
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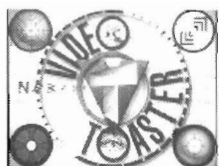
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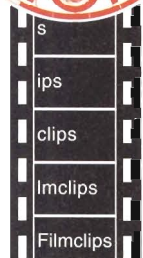
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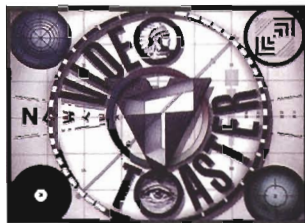
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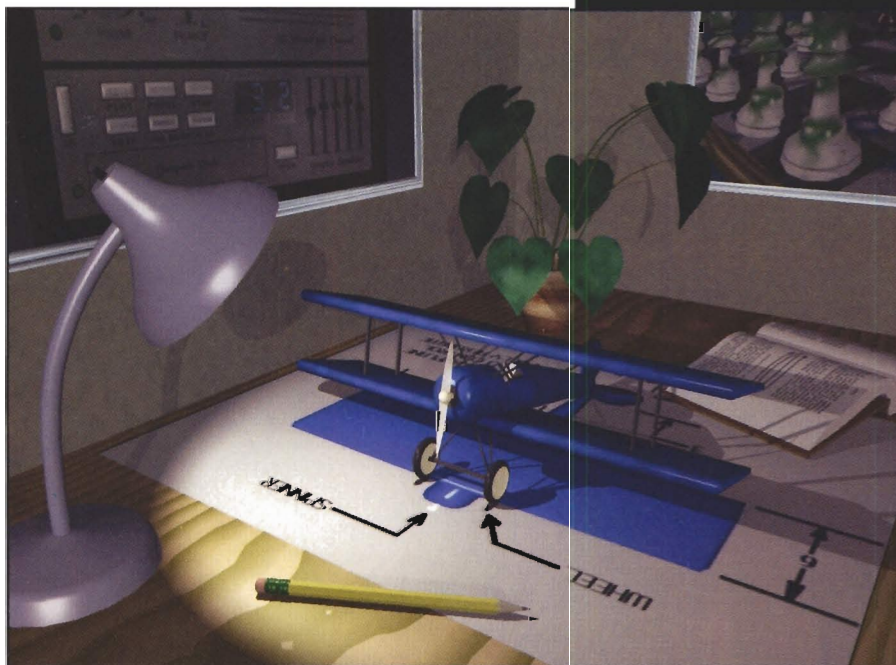
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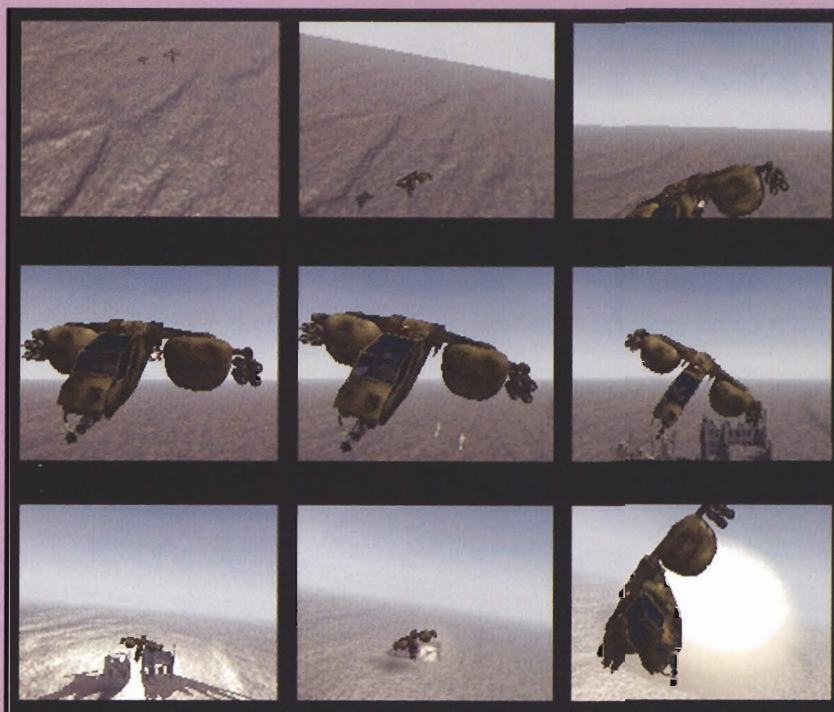
Chewing Gum

James Linehan of San Jose-based JLC Video ([408] 268-2634) created this image as an ad design, which is a frame from an animation in progress. All objects were created with LightWave's Modeler, and texture maps were digitized with a scanner. The entire project from modeling to rendering took about five hours.



Craftmanship

Craftmanship was created by Thomas Dawson of Escondido, CA-based Animation Effects ([619] 746-7507), who also contributed the article *A Complete Business Tutorial for Freelance Videographers* to this issue. The image is a frame from an animation created as an opener for videos from the Volunteer State Model Aviators' Club. The scene contains 5,191 points and 4,503 polygons—the models took about a day to build. The image rendered in one hour in LightWave's Print Resolution mode with a 28MHz 68040 accelerator.



Bombs Away!

Kevin Kipper of Santa Maria, CA included a storyboard with his Gallery submission. To make the storyboard, he rendered nine frames from his animation in Super Low Resolution mode, then created a template with ToasterPaint, and finally loaded and placed the pictures one at a time.

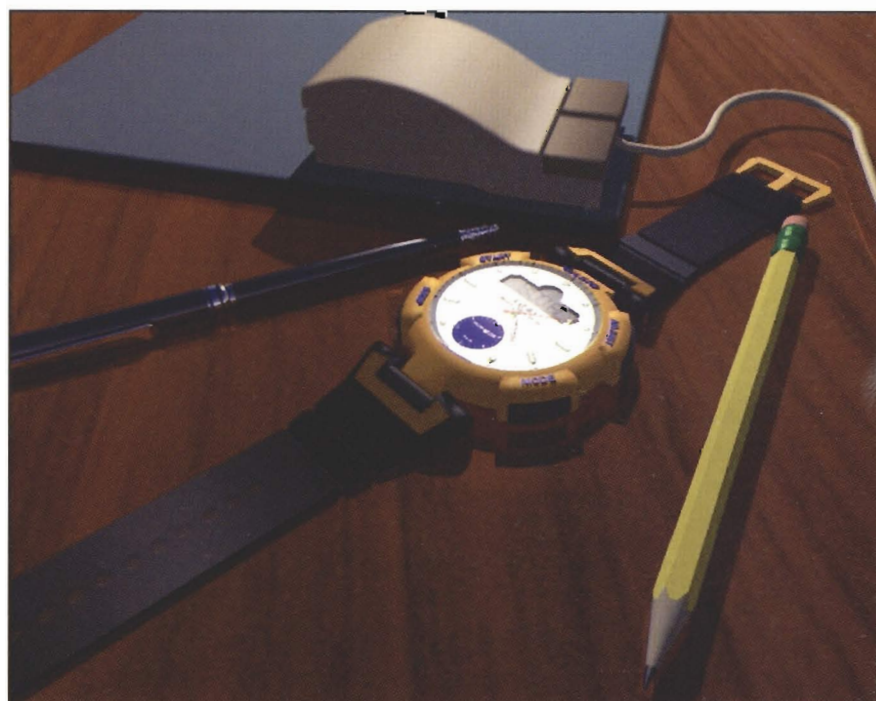
Kevin's helicopter was modeled in LightWave's Modeler, and its image maps were created with Deluxe Paint IV. The five-second animation shows the helicopter flying into the frame, dropping bombs on two buildings, and then flying out of the frame as an explosion whites out the scene.

Kevin is currently compiling a demo reel of his animation work. If you're interested, give him a call at (805) 922-0185.

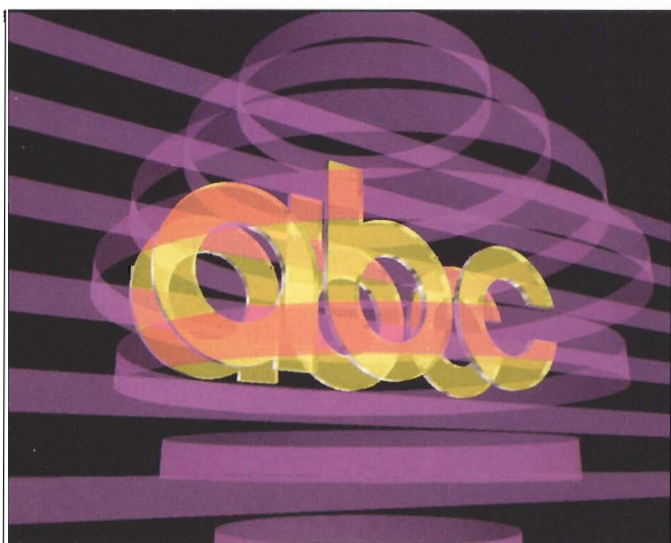
ABC Logo and Casio

Ron Soussan, 24, is a Miami-based graphic artist who obtained his Toaster less than one year ago. He quickly gravitated toward LightWave 3D and set out to master its capabilities. He's now a freelance 3D artist looking for work. Ron's telephone number is (305) 962-9950.

The ABC logo was created as a response to a colleague's challenge. The original graphic was created with AutoDesk's *3D Studio* and was featured in national print advertisements. The LightWave



scene contains seven objects comprised of 2,790 points and 1,848 polygons, and rendered in 15 minutes with a 50MHz 68030 accelerator. The Casio watch scene, from a video co-produced with VRS Media in southern Florida, was one of Soussan's first projects. He modeled all objects, except the pencil (included with LightWave), in a day. The scene, which includes 6,790 points and 7,784 polygons, rendered in five hours in high resolution with all three Trace options (reflections, shadows and refraction) turned on.



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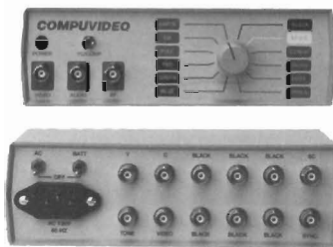
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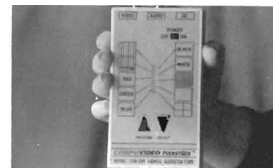
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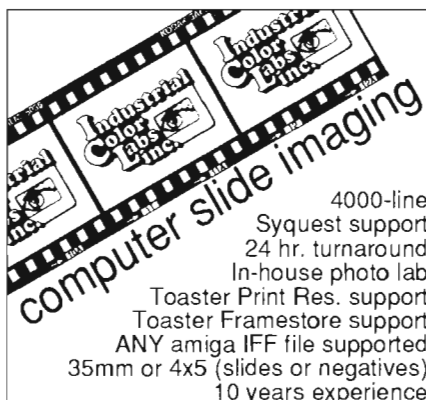
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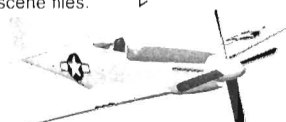
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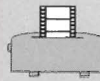
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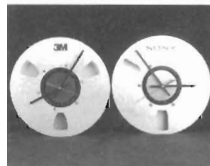
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LAST WORD

When I attend conventions or trade shows, I wear a badge that says "Lee Stranahan, Toaster Guy." I don't really have any better description of myself than that. For about the past two and a half years, my life has centered around the Video Toaster. I work all day, every day, and I haven't taken any vacations so far that don't relate to work.

So I ask you: Am I nuts?

Maybe, but I've got my reasons. What I see in the Toaster is freedom. I've got a vision, and I saw it in a Toaster manual. Here's my story:

A few years ago, my life's goal was to be a TV comedy writer. I'd written a couple of sample scripts, and I had some agents interested. They suggested I move to Los Angeles, so I did.

Why did I have to move to L.A.? Let's ask a broader question: Why are all actors or writers supposed to move to either L.A. or New York? The standard answer is that's where "The Industry" is. The Industry means the people who make TV programs.

Now here comes the big question: *Who* decided that The Industry makes TV? Not anyone who watches much TV, that's for sure. TV viewers generally agree that programming pretty much stinks. So how did The Industry get to be in charge? Here's the secret—they *have access to the equipment*.

TV-production and post-production equipment costs a ton of money—the only people who could afford it were big companies like TV stations or production houses. Think you've got a good idea for a show? Tough cookies. Unless you had cash or connections, you were out of luck.

Cut back to my life. So I'm living there in L.A., without cash or connections. I'm working for a little video company in the heart of Hollywood, making sing-along music videos for tourists. This company buys a brand new product with the unusual name, the Video Toaster. I pull out the manual so I can learn how this thing works and BOOM! My life is changed.

Why? There was a line in the original Toaster manual that read, "*We predict that in five years, your favorite TV shows will be produced by you or someone you know.*"

Wow.

I could see the future. We weren't there yet, but I could see it. In years to come, the reins of TV production wouldn't be as tightly held. If you had an idea,

you could get it produced with a few friends, or maybe even do it yourself.

This was what I wanted. But I could also see that in order for this dream to succeed, the Toaster would have to succeed. That's because there was something even more radical than the technology at work here. There was this totally new idea, and this radical little company promoting it. So I decided to do everything in my power to promote the Toaster.

I consider Allen Hastings, the principal genius behind LightWave 3D, to be a kindred spirit. Allen doesn't think of himself primarily as a programmer. This is probably a complete shock to anyone who's seen his work, because he's obviously a damn fine programmer.

But the deeper truth is that Allen is a filmmaker. If you've seen NewTek's Revolution tape, you know that he's a great animator. LightWave is the result of his artistic desire for better 3D tools. Want to know why the Toaster has the best 3D package ever written for a personal computer? Because Allen Hastings is powerfully motivated—he wants to make movies.

There's a catch, though. Since he spends so much time writing code, Allen doesn't have as much time as he'd like to animate. He's working for the eventual day when he can spend long nights setting up scenes and rendering them.

I'm in a somewhat similar position. Because I spend so much of my time teaching people how to use the Toaster and writing about it, I don't have any time to actually *do* anything with the darn thing.

So why don't I just quit teaching and start doing? For the same reason as Allen, I think. Because I want to make sure that NewTek's promised revolution really happens. I realized early that I was not going to do this alone. If I were the only person excited about the Toaster, it would die. That's why I started a magazine, the first Toaster users group, and spend about 3/4 of my time away from home. I saw the future, and I want to keep people as excited about about it as I can.

Remember one other thing—I got this glimpse of the future from NewTek. If there's one person who can be considered responsible for this concept, it's Paul Montgomery. Paul is generally referred to as NewTek's marketing genius, but I suggest his business card be changed to "Paul Montgomery, Visionary."

Paul saw the possibility of the Toaster back when it was just one of two dozen ideas swimming around inventor (and NewTek president) Tim Jenison's head. Paul knew what it could mean to the video world, saw

By Lee Stranahan, Toaster Guy



what features it should have, and staked his life on its future. Want commitment? Paul moved from California to Tim's garage in Topeka, Kansas, years before the Toaster's release.

Paul's enthusiasm is infectious. I caught it, everyone at NewTek caught it, and so has the world of video. People I talk to really do see the Toaster as more than just chips, software and solder—in one way or other, they've all seen a little of what Paul saw one day years ago. And wait until they see what's coming next...

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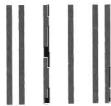
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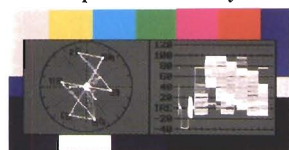
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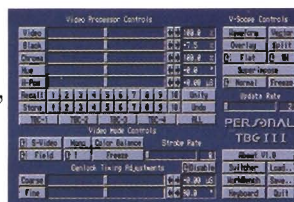


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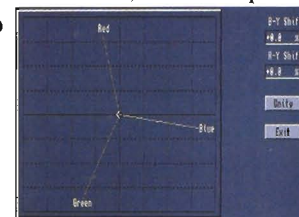
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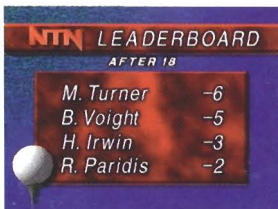
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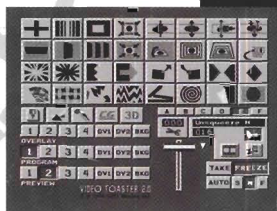


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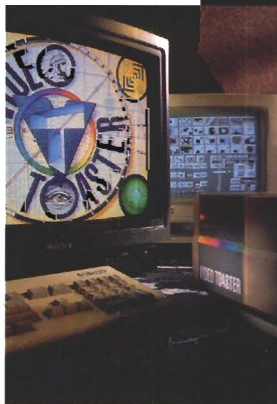
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