VIDEO TOASTER USER

THE DESKTOP VIDEO MAGAZINE
(Formerly Bread Box)

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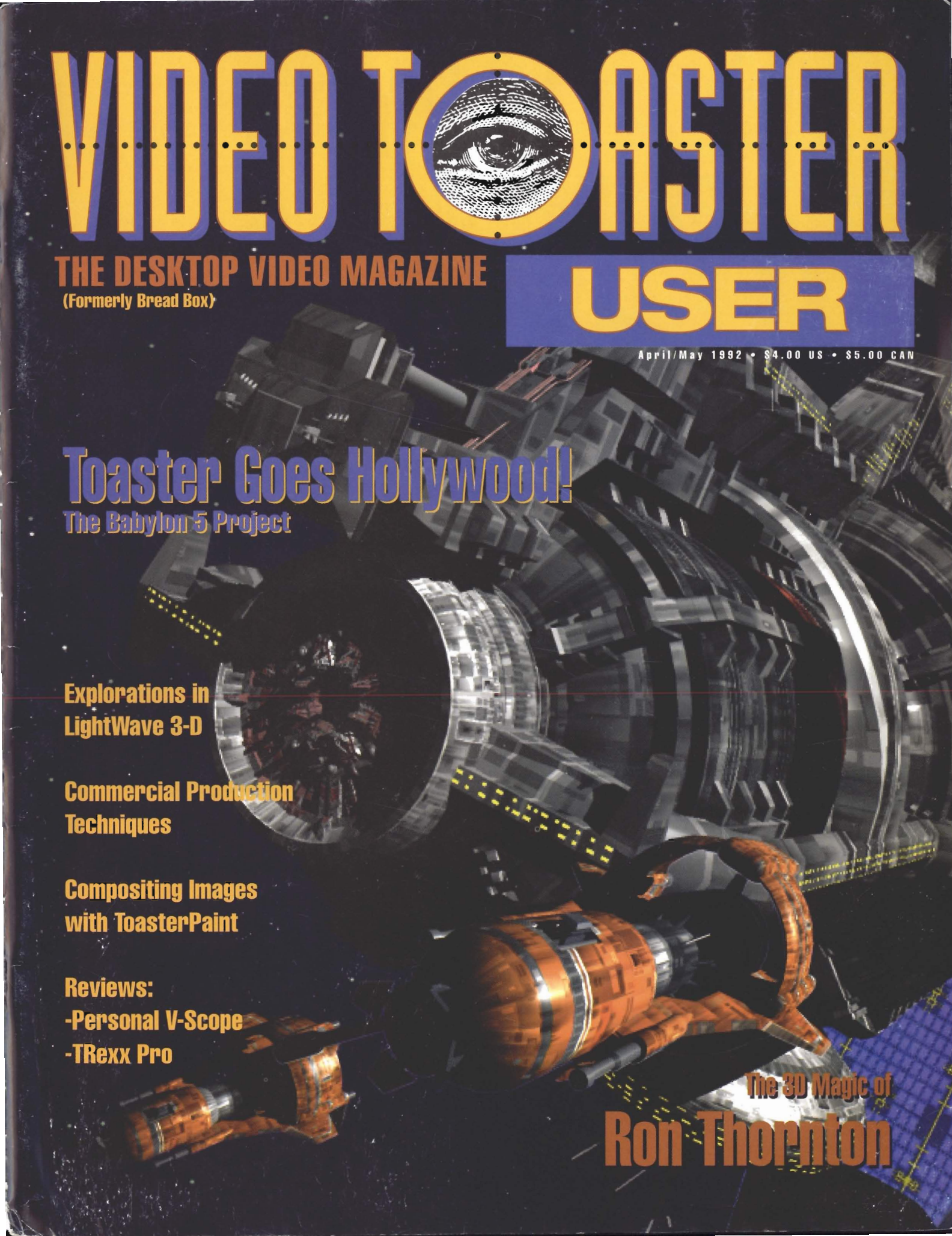

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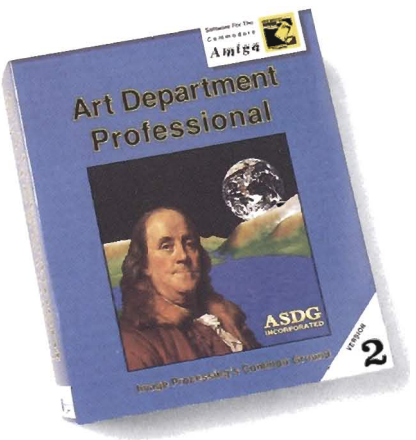

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VIDEO TOASTER
THE DESKTOP VIDEO MAGAZINE
USER

INSIDE

April/May 1992
Issue #5

ABOUT THE COVER:

This month's VIDEO TOASTER USER cover image was provided by well-known LightWave 3D artist, Ron Thornton. This cover image actually began life as three separate images (each ship, and the space station were separate files). These files were provided to us in Toaster RGB (IFF 24) format. The IFF 24 files were converted to TIFF using ASDG's Art Department Professional and the Professional Conversion Pack. These converted TIFF files were transferred from Amiga to Mac using a null modem cable/term software combination. They were then loaded into Adobe Photoshop on the Mac where they were processed, manipulated and, finally, composited to create the single image that you see on the cover. The VTU logo (recreated in Adobe Illustrator) and the Photoshop image were loaded into Quark Xpress where additional text was added, after which the complete cover was output for electronic color separation. Credits: Ron Thornton for original LightWave images. Mark Porter for Video Toaster User logo concept. Tom Twohy for pulling it all together and making a magazine cover out of it.

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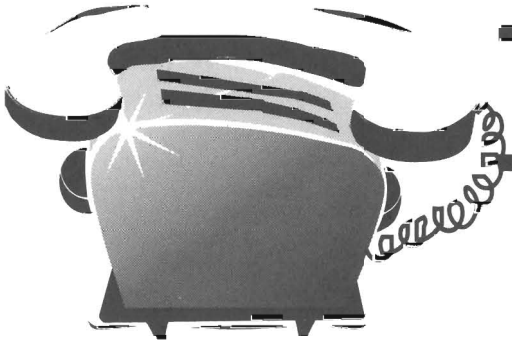

TOASTER TALK

By Jim Plant

Some months are just like that. I mean, you make your best "guestimates" uhh, I mean projections, and you map out your strategy based on those projections. Then, the unthinkable happens: your estimates are way off! This is a bad thing, right? Well, not always. Sometimes, rather than being overly optimistic (which is the most common error), you underestimate the market. This is what happened to us with this issue of Video Toaster User.

You see, I based my projections for this new magazine on my previous experiences with AVID, The Amiga-Video Journal, our other publication. This turned out to be a big mistake. Looking back, I should have known better. After all, the Video Toaster itself has had phenomenal success in the short time that it has been available. I should have known better than to plan only an eight-page increase over the last issue.

As you look through the pages of this issue, you will notice that there are over 40 advertisers targeting their products and services directly at Toaster users. This should tell you something about the dynamics of the Video Toaster market. This exceptional response forced me into a position where I had to decide whether to cut the editorial content to accommodate the unexpected ads or increase the number of pages to publish all the articles. I knew that adding pages would force us to re-design the entire magazine and cause major headaches for our layout staff. Well, I agonized over that decision for about 5 seconds. Yes, it was a lot of work under the pressure of unyielding deadlines, but we think it was worth the extra effort. We hope that you do too.

For those of you who are reading this publication for the very first time, allow me to give you a little background on the magazine. Video Toaster User began life in early 1991 as a newsletter, called Bread Box, published by Lee and Kathy Stranahan. In January of 1992, Avid Publications (that's us) acquired the Bread Box newsletter with the intent of turning it into a full-fledged magazine. This we did with the publication of the February/March issue of the "new and improved" Bread Box. With the April/May issue (the one you're reading right now) we begin with our new name, Video Toaster User (VTU). VTU is currently a bi-monthly publication, but we'll start publishing it monthly beginning in September of this year. We have a lot of exciting plans for VTU, so stay tuned!

(continued)

News From Topeka

OK, let's move on to the Toaster stuff. I paid another visit to Topeka last month to catch up on all the latest NewTek news. I arrived to find a maelstrom of furious activity (this seems to be the normal state of affairs at NewTek). NewTek, like any other company that has experienced meteoric growth, is also experiencing the inevitable growing pains. I found a NewTek that is trying to restructure itself to better serve the needs of its existing customer base (better documentation, better technical support, better customer communication), as well as continue its growth into new and bigger markets. In order to accomplish these goals, NewTek is bringing on some new people to fill gaps and reassigning existing personnel and giving them more focused objectives. I got a very strong sense of a company trying to bring the rocket they are riding under a bit more control. I think in the next year, we will see a NewTek that is more accessible, more responsive and, in general, more reflective of the personalities of its founders, Tim Jenison and Paul Montgomery.

One of the direct results of the previously mentioned NewTek restructuring, is the appointment of Jud Alford as product manager of the soon-to-be-released Toaster/Macintosh interface. I had the chance to spend some time talking to Jud about his plans for this very important phase of NewTek's Toaster development. One of Jud's primary jobs will be to educate the Mac market about the function and potential of a Macintosh/Toaster combination. If the crowds at the last MacWorld exhibition are any indication, Jud will find a large and eager audience for his message. Jud also updated me on the progress of the product itself, saying that NewTek was working on making the Mac/Toaster interface as Mac-like as possible, and also hinting at a strong possibility that there would be batch transfer capability built into the software to allow the most efficient transfer of Macintosh graphics to Toaster framestores. We'll be discussing the Mac/Toaster combo in greater depth in upcoming issues. Jud Alford can be reached through the American-Online network (User ID: VIDEOTOAST) and through the AppleLink developer's system (User ID: NEWTEK).

For years there has been rampant speculation that NewTek would leave the Silicon Prairie and make tracks for a major media center like L.A., San Francisco or New York. My inside sources tell me that a move could come as early as this fall. When all the moving vans have settled, however, don't be surprised to find NewTek still roosting in the Midwest. HINT: they'll probably be much closer to a major airport.

Seminars, Tapes & Stuff

On the way out to start his new job at NewTek, Lee Stranahan, former Bread Box publisher, made some stops in San Francisco and Sacramento to hold some Toaster Training seminars. I was lucky enough to catch the one in San Francisco. This was a full-day seminar that really opened my eyes. Lee has a unique (and humorous) way of demonstrating USEFUL Toaster techniques. He doesn't focus on the Allen Hastings/Ron Thornton kind of 3D animation that requires a lot of time, a lot of Toaster, and a lot of talent, but rather on the more pragmatic everyday kind of Toaster applications that normal video mortals can immediately put to use. I overheard one attendee tell Lee, "that one ToasterPaint/CG technique by itself was worth the entire cost of the seminar."

I happen to know that Lee had scheduled some seminars in other cities prior to accepting his NewTek post. He will, of course, have to satisfy those commitments. This is great news for anyone living near Dallas, Chicago, Champaign IL, or New York City. Here are the dates and telephone numbers for these upcoming events: the Dallas seminar is April 17th. Call 214-702-9119 for details. The Chicago seminar is May 1st. Call 708-232-0009. The Champaign, IL seminar is scheduled for May 2nd. Call 217-333-9436. The New York seminar will be held on May 15th. You can call 818-505-1464 and leave a message asking for details. If you have the chance to attend any of these seminars, I highly recommend you take the opportunity. If you can't make it to one of his classes, you may want to consider his series of videotapes. The tapes cover a lot of the same ground as his workshops. For more information about the "Stranahan Tapes" call 818-841-8277.

Speaking of tapes, we finally received the master from the AVID Animation and Graphics contest that we ran last year. I'm

(continued on page 43)

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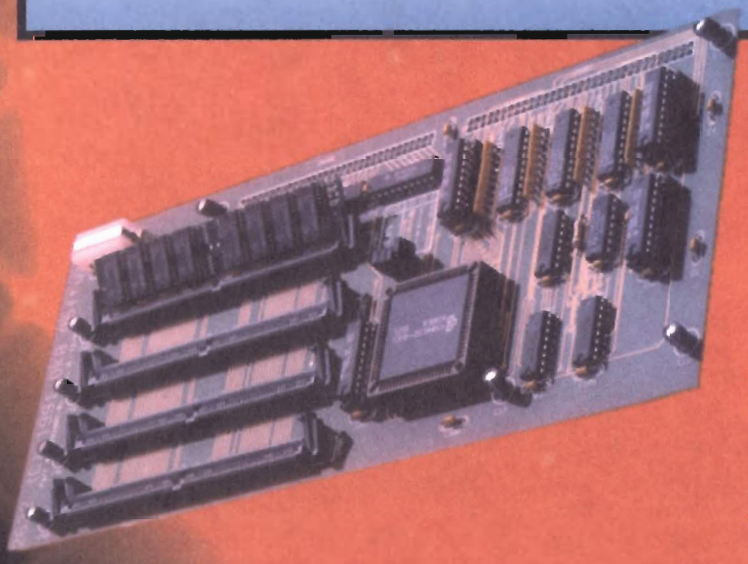

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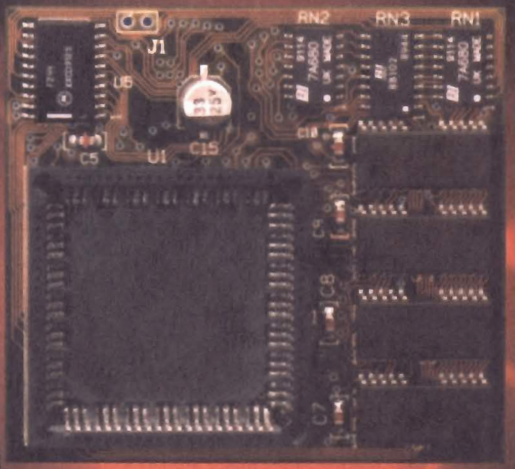

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SLICES

By James Hebert

Inherent in the nature of hardware and software design is the kind of volatility that can drive a documentation manager bonkers. Because the Alcatraz programming team was intent on adding as many new features into Toaster 2.0 as late as possible, there were a few places where the software and the manual quite didn't match up. As a result, the original release of System 2.0 of the Video Toaster Manual included an Addendum containing updates, corrections, and new information. The first print run of the manual for System 2.0 has already run out(!), and the contents of the original Addendum have been incorporated into the second revision of the System 2.0 manual. There is no new information in this revision, it only accomodates the original Addendum material.

Still, there remains the nature of software and hardware. NewTek has learned some new things, so there is now a second Addendum that will accompany the Video Toaster Manual from now on, nicknamed the "Cool Tips Addendum" because it contains cool tips and ideas, a few corrections, and a set of ARexx commands for LightWave 3D (not all of LightWave's functions are accessible via ARexx, yet there are a number of unique capabilities they provide nonetheless).

Owners of the original System 2.0 manual may contact NewTek Technical Support (1-800-527- 3334) and request a copy, free of charge. As soon as it is available, the Cool Tips Addendum will be sent to you. (Owners of the second revision of the manual don't have to worry about this, as the "Cool Tips Addendum" is already included in their documentation.) If you are unsure which revision you have, look in the Introduction for a subsection called About the Manual. If you have a revised manual, it will say "Revision 2" in this section. The original version of the 2.0 manual contains no reference to the revision.

Speaking of LightWave and ARexx, that reminds me of a note I wanted to bring up about LightWave and the Amiga's serial port. A number of people have experienced difficulty with the serial port not functioning as they expect it to when working with LightWave (also with controllers by RGB Creations, Sundance Technologies, DiaQuest, as well as others).

Be careful of the following circumstances when using LightWave:

1 - **Tying up the serial port.** The native Amiga has only one serial port. If you activate any other software prior to entering LightWave, when LightWave goes to communicate with your single- frame controller it will respond "Can't Open Serial Port." This is not a message that LightWave isn't working correctly. It is informing you that some other software is using the serial port, and LightWave cannot access it until the other software is closed down.

2 - **Typing incorrect characters.** Some documentation for single-frame controllers directs you to type "CTRL-M" or "control-m," or maybe you just mentally pronounce ^m as control m. Well, as your parents used to say, stop it! For LightWave, the ^m command is a two-character command created by first holding the shift key and pressing the number 6 on the keyboard (for the ^), and second by pressing the letter m on the keyboard. If you instead press the Ctrl key followed by m, you may enter a string of garbage characters into LightWave that will not be understood. Let the animator beware.

3 - **Entering too much information.** For example, instructions for the DiaQuest DQ-TACO direct you to enter only three commands: an initialization command, an in-point where the editing begins, and a record command. One user also entered a Start Position, because LightWave had such a button and he thought he needed to give it information. Yet somehow LightWave was not functioning correctly. He did not realize that in fact the in-point command already contained this information. Make sure you enter only the information you need, and do so carefully. There have been reports of situations where single frame controllers can cause LightWave (or the Amiga) to lock up or crash if they respond to commands in a certain manner. If you have a BCD controller and are experiencing this, contact BCD for a new ROM that will correct the problem.

There are a number of 'hidden features' that are not immediately apparent within Video Toaster System 2.0. Additionally, there are some functional changes within the Toaster that may cause you to take a different approach than the ones that worked in version 1.0. Here's a miscellaneous collection of tips, changes, and neat work-arounds for achieving results.

ChromaFX is treated a bit differently by System 2.0 in that the effects it renders may be used in tandem with various Switcher transitions. This allows for some subtle and not-so-subtle effects. The new Young Indiana Jones television series uses a creative approach toward the credits at the end of each episode. Footage from the episode itself is rerun, only in sepia tone

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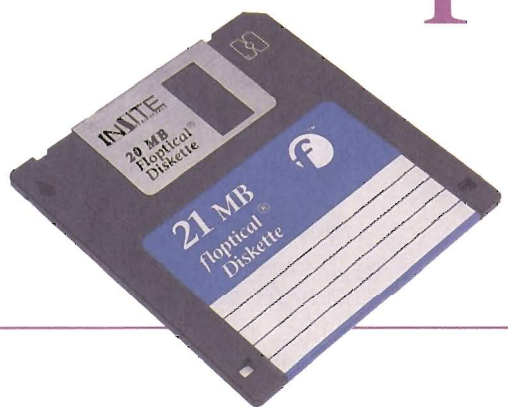

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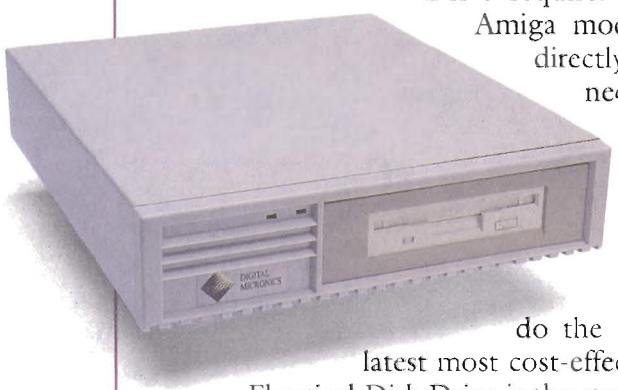

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colors, with a grainy film look, and a jerky, every-other-frame appearance to the frame rate. You can achieve a similar appearance by combining the SepiaTone effect within ChromaFX with the Old Film special effect on Grid F of the effects banks.

1 - Have your video source running on Input 1. At the Switcher, select Input 1 on Program. (If you wish to use a still image, select DV2 on Preview, and load a Framestore into DV2 at this point.)

2 - Go to Bank F and click on the first ChromaFX icon. Instantly, the SepiaTone filter loads into DV1 on the Preview bus automatically. The Preview bus is now processing digital ChromaFX video. Any Preview bus input (except DV1) will now be processed by the SepiaTone filter.

3 - Click Take. DV2 will jump to the Program output, and Program will become the ChromaFX bus. Now the Program Bus is processing with the SepiaTone Filter.

4 - Click Input 1 on Program. Your video source will look old-fashioned too.

5 - For added realism, double-click the Old Film effect (also on Bank F). Your video will look even more old-fashioned, like an aged film. Click either mouse button when you want to end the effect.

If your editing format can take an additional generation, you can run this footage through again for multi-layered effects, or perhaps to run credits over it, a la Young Indiana Jones.

System 2.0 ChromaFX creates its effects filters in much the same way as the original version 1.0 ChromaFX. Multicolored gradients, with smooth, evenly blended colors are useful for CG backgrounds and LightWave image maps. However, if you wish to save the full-screen filter image, for use in these programs, you need to go about it in a new manner.

Version 1.0 ChromaFX used to render a filter into a framebuffer, where you could simply save it like any Framestore image. System 2.0 ChromaFX treats the framebuffer differently. Here's a workaround for it.

1 - Enter ChromaFX.

2 - Select the effect whose framebuffered image you wish to save for use elsewhere. Click on the T-bar to render the effect.

3 - Return to the Switcher. The effect is in DV1. You can see this for yourself. Click on DV1. It will not depress. It use is currently overridden by the Toaster's internal control logic.

4 - Go back into ChromaFX. Do nothing here.

5 - Reenter the Switcher.

6 - Click on DV1. You will see the effect filter there.

There are some interesting notes about this procedure:

• Reentering ChromaFX, then returning to the Swticher, for the second time, interrupts the normal effects logic for ChromaFX and "frees" the DV1 framebuffer.

• If you attempt to save any image without performing the extra step (to ChromaFX and back), you will only save a blank screen.

• Often, the image that is in the buffer may appear slightly different after it has been "freed" by the Toaster. For example, with horizontal effects such as #53 RainboBands, the resulting image displays about one-third of the screen in horizontal bands, and the other two-thirds canted at a 45-degree angle. You would probably need

to go into ToasterPaint to fix this, if need be.

ChromaFX Presets "remembers" their T-bar settings. When you have an effect that you like and wish to use extensively, or for a project that may require several days/weeks of editing, set it up as a preset. For example, you use the Mars filter at approximately 70% one day during editing, then discover the next day that you need to re-edit half of that segment. No problem. Start up the Toaster and reenter ChromaFX. Click on the Mars filter preset. The moment you select it, the T-bar drops to the 70% setting where you last had it. This "unknown feature" can be handy.

Owners of Amigas with Commodore's A2091 Controller have discovered a few minor problems. Older ROMs can be a roadblock to expanding their Amiga.

If you are having difficulty adding a second hard drive, especially an external drive (such as a removeable media drive), you will likely need to update to the version 6.6 ROMs (there are two of them on the A2091). These are better equipped to handle multiple drives, it seems.

If you are planning on adding a 68040 accelerator to your system, contact Commodore to find out the status of the version 6.9 ROMs for the A2091 controller. Reports indicate that the A2091 cannot function properly with an 040 onboard, and this ROM is intended to correct for that.

It should be noted, however, that the A2091 has been a steady controller in the field and, unless you plan on adding heavy artillery to your Amiga, will continue to serve in Commodore's front line. In other words, don't worry if you have no immediate plans for expansion in either of these directions. It won't cause you any problems.

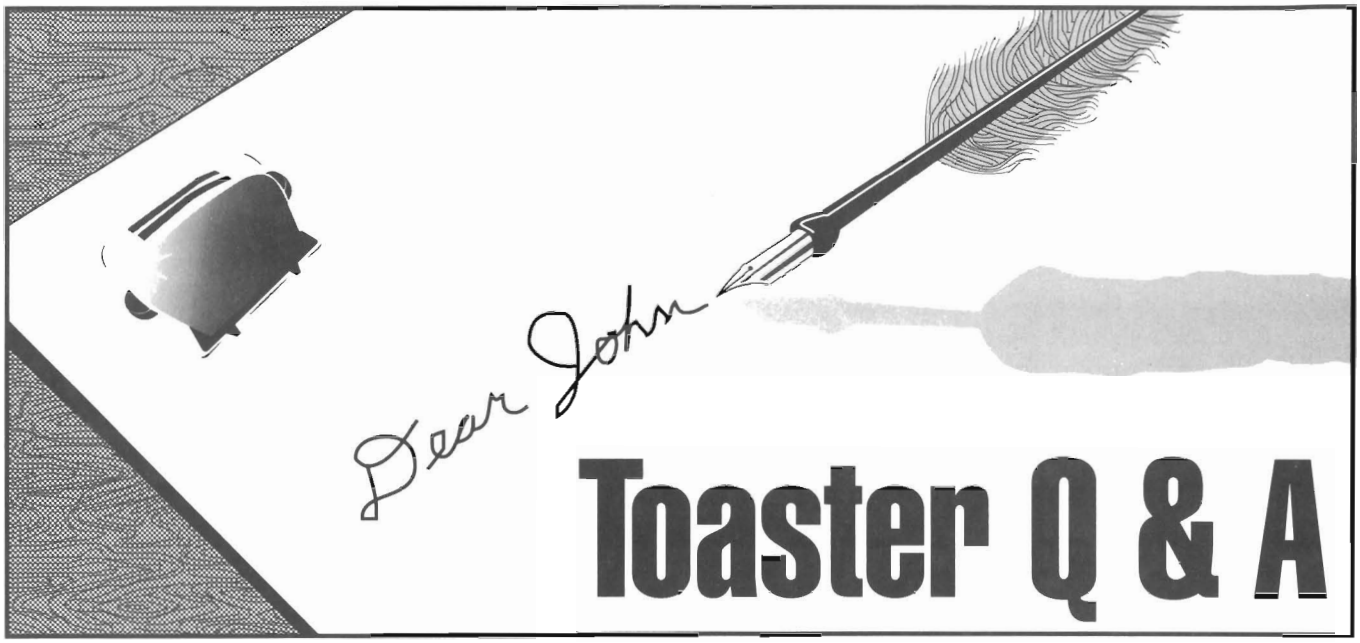
My vote for *Cool Hard Drive Utility of the Month* goes to SCSIMounter by Martin A. Blatter of Switzerland. SCSIMounter allows you to mount and unmount cartridges (i.e. partitions) without restarting the machine, even if you started the machine without a cartridge inserted in the first place. The latter is something I often forget to do, working with the amounts of hardware and software that I do.

SCSIMounter is a public domain program for users with (a) WorkBench 2.0, (b) removable media hard drives, and (c) hard drive controllers that support Commodore's RDB and SCSI Direct standards. Operation is easy once you have told SCSIMounter which hard drive controller you use (via the icon's tooltypes entry). Even if you are a novice, if you own and use a removable type drive, this simple utility is terrific. The author also promises to update the software for users whose hard drive controllers refuse to function properly. Just contact him with information about your system, controller, and controller device name.

You can find SCSIMounter on most bulletin board services. If you cannot locate it for some reason, the author's address is below. Although the program is free, include at least an amount sufficient to cover his response (if not the correct form of currency for Switzerland, then extra blank disks and return postage, perhaps).

Relog AG
Attn: Martin A. Blatter
Bruggerweg 2
CH-8037 Zurich
Switzerland

James Hebert was responsible for writing most of the Video Toaster 2.0 manual. You can contact him by writing to: Video Toaster Technical Support, 215 E. 8th St., Topeka, KS, 66603.



Toaster Q & A

By John F. Gross

Greetings, and welcome to Dear John. Think of me as your Video Toaster Dear Abby and this column as your place to ask any questions pertaining to the Video Toaster. From hooking up camera inputs to modeling cameras in LightWave, this is the place to ask and find out how it's done. If there's something that you'd like to know about NewTek's Video Toaster, you can contact me at the address at the end of this column. I'll look forward to hearing from you.

On to this month's questions...

The company I work for has given me a budget to buy video equipment this year. I have been doing a lot of research and am very interested in the Video Toaster. I plan to do most of my shooting in S-VHS, but I am concerned that the Toaster does not support this format. Do you know if this support is planned for the future, or is there a way to use S-VHS now?

Heidi Berczyk
Caribou, ME

The Video Toaster is compatible with S-VHS right now! Many people falsely assume since the Video Toaster does not have s-video connectors, it cannot accept the higher resolution of S-VHS. Nothing could be further from the truth. The Toaster has over 400 lines of resolution and it processes video internally in the D2/D3 format.

If you connect the composite video output of an S-VHS camera with 400 lines of resolution to the Toaster, the final output of the Toaster will retain all of the original resolution of the camera.

Don't make the mistake of thinking that the composite signal is a bad signal. What makes composite video look bad is the low resolution devices that are often used in capturing and recording video. Remember that the final output of your video is only going to look as good as the weakest link in your system. If you shoot your video in VHS (230-240 lines of resolution) then run it through the Toaster and record it to MII or Betacam, you are still going to be dealing with a final video product that was originally shot at only 230 lines of resolution.

Because of the Toaster's popularity, a number of companies are designing products that take the Toaster's high quality composite output and split it into a Y/C signal. The best of these products also process and enhance the split signals to maintain the highest possible video signals going into a Y/C recorder. You'll probably find ads for this type of equipment in the pages of VIDEO TOASTER USER.

When I choose black as my background color in the Video Toaster, I always seem to get black that is only 10 IRE on my waveform monitor. I need to have black that is 7.5 IRE. Is there any way to adjust the black that the Toaster produces?

Jimmy Rebeth
Bakersfield, CA

It's true that the Toaster's background black is about 10 IRE, but there are two simple ways of getting darker black out of the Toaster without having to do anything complicated.

The first method involves ToasterPaint. Enter ToasterPaint and clear the screen to solid black (RGB values all equal to 0). Save your black screen as a framestore, giving it a number that is easy to remember. When you load this framestore from the switcher, you will have a frame of black that measures out at approximately 7.5 IRE. By the way, if you have Toaster System 2.0, your black framestore will only take up about 15k of hard drive space!

The second way of getting a dark black out of the Toaster is done by choosing a program source (1-4) that is currently not connected to a video source. This will output a super black signal of approximately 0 IRE.

I have been trying to design a nice looking chrome surface in LightWave. I think I'm using the right colors but my object never seems to look like chrome.

Can you give me some color values and other suggestions that I could use?

Gary Daniels
Enid, OK

Chrome isn't really a certain color value as much as it is the reflection of the environment surrounding an object. When designing chrome, it's important to realize that you need a good background or image to reflect onto an object. Usually when chrome is depicted on TV, you will notice that the upper half of a chrome object will have a bluish tint to it, while the lower half will have a brownish-green tint. You can achieve this by setting LightWave's backdrop colors to a blue spread for the sky and a brownish spread for the ground. If you are using Toaster 2.0, LightWave will default to a perfect combination of sky and ground colors. If you aren't using 2.0, try these values: Zenith - 0,40,80; Sky - 120,180,240; Ground - 50,40,30; Nadir - 100,80,60. After setting your sky and ground spreads, try these values for your object: Diffuse - 0%; Specular - 100%; Medium glossiness and 100% reflection map. It doesn't matter what the surface color is because the object is 100% reflective. If you do not choose an image to be reflected in the reflected image box, the object will reflect the sky and ground colors.

Now you need to set up your layout so you have a nice camera angle on the object. When you render the image out you should have a chrome looking object.

If you do not wish to show the background behind the object, you can load an image to be used as a backdrop. The object will still reflect the sky and ground colors, however, you won't see those same colors behind the object. This would be useful if you choose to have a shiny chrome object against a black backdrop.

John F. Gross is a Video Toaster graphic artist employed by Alpha Video in Minneapolis. He has been using the Video Toaster every day since it was first released and is still trying to catch up on his sleep. John also extensively beta-tested Toaster System 2.0.

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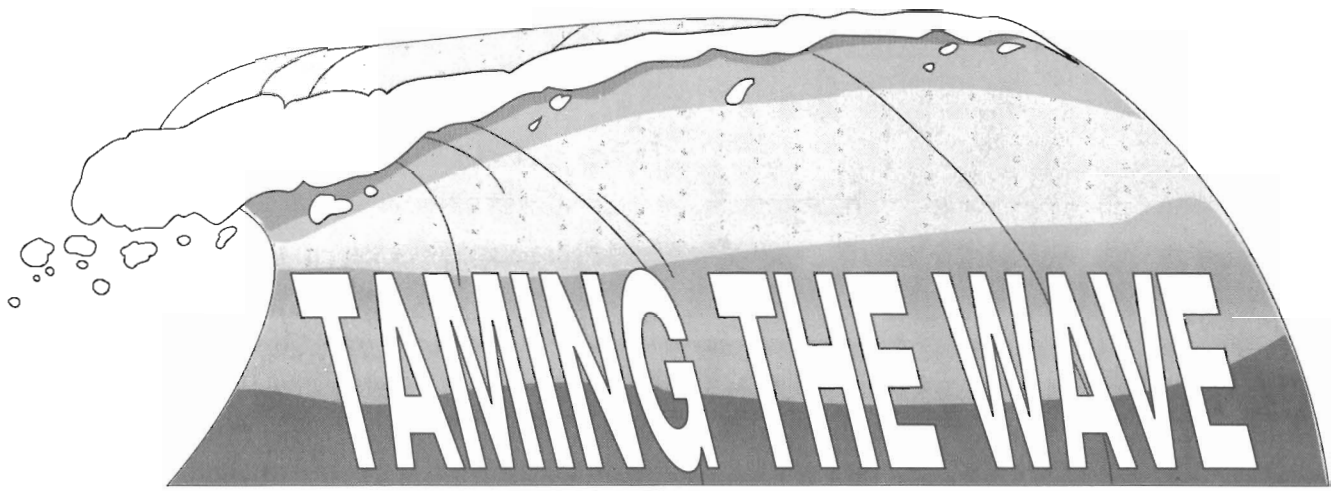


TAMING THE WAVE

Explorations in LightWave 3D

By David Hopkins

Just got back from the NCGA (National Computer Graphics Association) show in Anaheim, California, which was just about in my backyard. Sadly, the show was a major dissappointment. Not only was NewTek NOT there, but the only trace of a Toaster on the show floor was a single machine in VideoMedia's booth (the V-LAN people). There were, however, two Toaster "events." The first, a tricks & tips panel-type meeting, I was unable to attend due to scheduling complications, but I was able to make it to the second. This one, billed as a "Toaster Special Interest Group." didn't get a lot of interest. There were perhaps 10 or 12 people there, only 3 or 4 of which seemed to be current Toaster owners. I was amused to find one of the high-up folks from MacWeek magazine in the audience, soaking in the demo tapes in preparation for the upcoming MacToaster release.

In the "Gee-I-didn't-know-it-did-that" department, I find that a very small number of people realize that you can now use a "lasso" selection method in Modeler 2.0. This feature, hidden deep in the Toaster 2.0 Addendum, allows you to draw a free-form shape around the part of your object you wish to select, and works with points and/or polygons. Give it a go by holding down the right mouse button and dragging...VERY NICE FEATURE!

Have you seen "The Lawnmower Man" yet? If your answer is no, rush out and see it right now. Don't worry, I'll still be here when you get back....OK, good. Pretty amazing animation, eh? While rumor in the business had it that there was some LightWave stuff used in the film, that appears to be false. The companies responsible for all of the visual enticements, Angel Studios and Xaos, used machines such as Silicon Graphics to produce that spectacular eye-candy. Great graphics, good flick, better-than-average Stephen King film...A MUST see for 3D animators!

Alright, so I suppose you'd like to read something useful now, right? Like maybe a new LightWave technique? Well, let me dig into my bag of tricks and see what I can find....Hierarchical animation? Nahh...Surface Mapping? Done it...Ok, here we go....Multiple Morph Targets!

Have you noticed the new "trend" in 3D animation? It's called Organic Animation, and you'll find it in everything from blockbuster films such as Terminator 2 all the way down to dancing mouthwash bottles for broadcast commercials. Well, you can't be part of the "in" group without knowing how to do this level of animation these days. The market is so saturated with its' uses (and abuses) that it almost makes you wonder if it isn't passe, but it never hurts to add a new ability to your animation arsenal, so let's take a look at it...

One of the primary tools needed to do proper organic animation is morphing. Fortunately morphing has been a part of LightWave's vocabulary from its' original release, with the capabilities of the function expanding greatly with the release of LightWave 2.0. While the original only allowed you to morph one object into another, now you have the ability to morph a single object into 16 other objects. The possibilities are fairly amazing with this number of morphs, bringing to mind things such as human (or animal) facial animation. Before you let your imagination run away with you, however, you need to understand that morphing is still one of the more complicated features of LightWave.

In this installment of Taming The Wave, we aren't going to learn how to do facial animation because that's a bit beyond the present scope of the column, but we will do some interesting experiments. Before we start, you need to understand the "rules" of the game.

Rule #1: Morphing objects MUST have the same number of points.

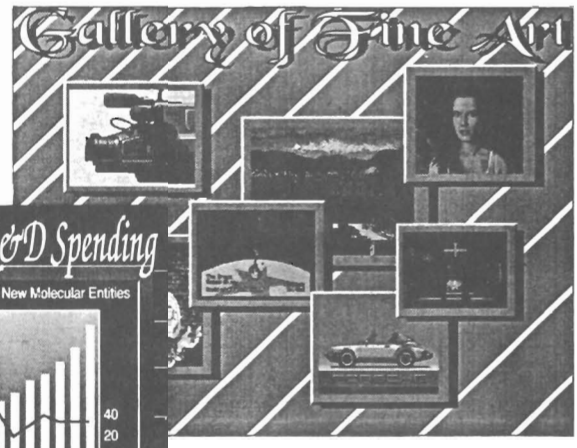
Rule #2: The above mentioned points MUST have the proper relative positions.

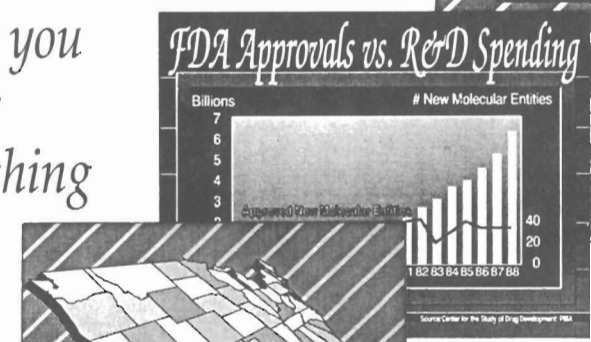
Rule #3: Save does not count as a "mouse operation."

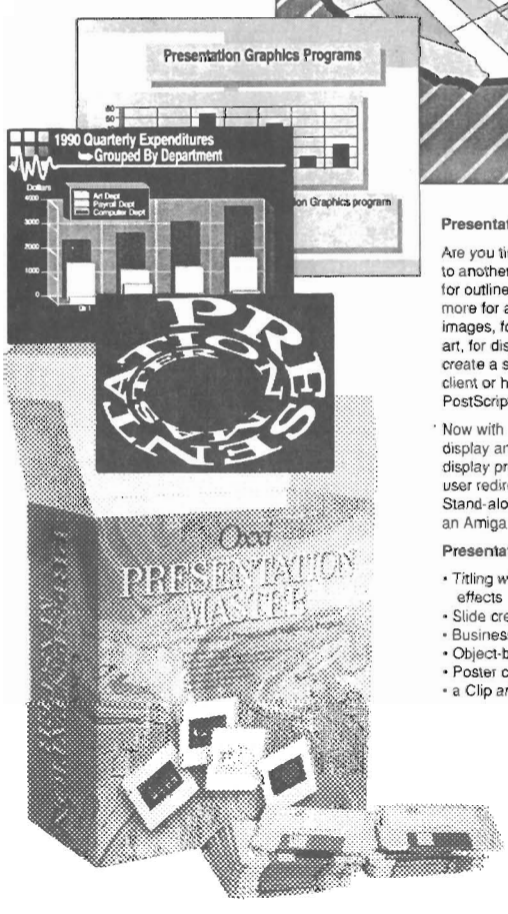
The first rule is pretty simple to understand. Rule #2, however, is what makes morphing truly complicated. When you create points in a layer of Modeler, each one is assigned a number relating to the order in which it was created. Don't be surprised if you have never seen any readout stating point order or anything like it because there isn't one. Since morph moves each point number to its corresponding

IF YOU COULD ONLY HAVE ONE PRESENTATION GRAPHICS PACKAGE...

...wouldn't you still want it to do everything you need?







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position in the new shape. To have point 1, for instance, move into what should be point 5's position would probably cause a mangled morph. 99% of the time this is NOT what you want to happen.

Rule #3 is stated simply because it gives us an easy avenue for creating multiple morph targets, each based on the geometry of the original object. This means that you can distort an object with one "mouse operation" (meaning you have only released the mouse button once since changing from the original form, save the new form, then click UnDo to restore it to the previous shape. If you require more than one mouse operation to get the object into its' new shape, you'll only be able to UnDo the last one, so try to do it right the first time!

So, the question remains: How do you go about making sure that points move into the positions you want them to? Basically, you need to move each point BY HAND into its new position. This is a major ordeal in most cases which involve a complex object, but not impossible. Let's do an experiment with one of the pre-built objects included with both Toaster releases, the chess pawn. You can find our victim in the Toaster/3D/Objects/Games/ChessPieces directory.

Load the pawn (I prefer the black pawn simply because it gives nicer highlights than the white pawn when rendered, but you can use either one) into the first Modeler layer. If you were working on something before beginning this example, you may need to delete what was in the layers before. Press the 'A' key on your keyboard to make the pawn fit into all three views. The first thing we want to do with it is save it again. Why? That way we make sure that the points for the first object are in the order we have right now. Save this object as "MyPawn.lwob"

What we want to do is have this pawn lean back and forth as if it were made of rubber. To achieve this goal we'll need to use the Bend tool to lean the head of the pawn over until it just touches the "ground." Place the Bend crosshairs in the dead center of the pawn's Bottom view. Click and hold the left mouse button while dragging it ALONG A STRAIGHT LINE to the right. Use the X axis as a guide for making this movement straight. The center line of the pawn should lay perfectly parallel to the X axis line. Move in this manner until the very tip of the head is touching the X axis line in the BACK view. Now you have the second object for our morph. Save it as "MyPawnLean1.lwob", then click UnDo. The original pawn is restored if you managed to do this in only one mouse operation, remember?

For our next morph position, bend the head in the other direction until it touches the X axis again. You may be wondering why we didn't just rotate the last position we had until it was the way we need it now. If we did that, the head would pass through the body of the pawn as the points traveled to their new positions. Instead, we will set up our morph in the following order: MyPawn.lwob to MyPawnLean1.lwob to MyPawn.lwob to MyPawnLean2.lwob (the one we are producing now) and then back to MyPawn.lwob. When you have this

object in its' proper orientation, save it as "MyPawnLean2.lwob."

Before we go any further I want to take a moment to explain my object naming conventions. The reason I choose to place a number after each "lean" file is so that they will be grouped together in the file requester. If we gave these substantially different names they may be scattered and we'd waste a few seconds of our time trying to find them. A few seconds may not seem like much, but it tends to build up after a while into a noticeable amount. I tack on ".lwob" to the end of the file because this is the new naming convention recommended by NewTek, and it helps ease the confusion between object files, surface files, image files, and the like. Also, since LightWave is now much more cooperative about using files from other 3D systems, lwob lets me know that this is an object defined in and for LightWave rather than Imagine, Sculpt, or whatever else you might be modeling with.

Alright, let's proceed with our experiments, shall we? Exit Modeler to return to LightWave. If you have a low memory machine, you should unload the Modeler to release whatever memory it may be using. You can do this by holding down the shift key and clicking the Modeler button. If you have anything already loaded into LightWave, delete it now using the Clear Scene option.

Load in each of the files we saved from Modeler. You can load them in any order, but it is best if you load them in the order that we'll be needing them. That would be the original "MyPawn.lwob," then "MyPawnLean1.lwob" and, finally, "MyPawnLean2.lwob." Now load "MyPawn.lwob" again. Why? You'll see in a moment. Once those are loaded in, go to the "MyPawn.lwob" object area (using the small arrows at the upper right of the objects area) and click on the button labeled "Metamorph."

First, we'll need to create an envelope describing the morph actions of the object. In this case, we'll want one loop of the animation to take 4 seconds, so the first object will transform to the second at frame 30. Create a key at frame 30 using the Create Key button. You'll notice that frame 30 is added at the right side of the envelope. Set the envelope value at this frame to be 100%. This will cause the object to be 100% morphed into the next at that frame. Click "Use Envelope" to return to the Objects workspace.

Now, choose the morph target which this object will change into at frame 30. In this case, that will be MyPawnLean1.lwob. You can find that by using the little arrows to the right of the Metamorph Target window. When you've finished that, advance to the MyPawnLean1.lwob object itself, using the Current Object arrows. Again, click Metamorph.

Remember that our first object is taking 30 frames to get to this object. We'll need to create a key at frame 30 and make sure it is at 0. We do this so that when the first object reaches frame 30, THIS object's frame 30 still has it in its normal form, or a morph level of 0. Got that? So now we need a key at frame 60, which is where the MyPawnLean1.lwob will be fully morphed

into its NEXT shape. If you've got the hang of it, you'll realize that we need to set the morph value at frame 60 to 100%. You think you got it?

Alright, click the "Use Envelope" button to return to the Objects workspace again, and set the Morph Target to MyPawn.lwob (2). So, here's where our extra MyPawn went! Why? Because we want the pawn to go from original, to the first lean, to the original, to the second lean, then back to the original. Since we can only set ONE morph target for each object, if we morphed back from MyPawnLean1.lwob, it wouldn't let us morph the upright pawn to MyPawnLean2.lwob. It's morph target is set to MyPawnLean1.lwob, remember? So we use another copy of the upright pawn to "pass the buck."

Make "MyPawn.lwob (2)" the Current Object. Enter Metamorph, create a key at frames 60 and 90. Using the pattern as before, we'll want this object at a 0% morph in frame 60 and a 100% morph in frame 90. Use Envelope, then make "MyPawnLean2.lwob" the Metamorph Target. Got it? We've now gone from MyPawn to MyPawnLean1 to MyPawn (2) to MyPawnLean2, and at frame 90 we're sitting in the form of MyPawnLean2. If you don't understand, reread that last bit, it's not as complicated as it seems.

Finally, make "MyPawnLean2.lwob" the Current Object. Create Metamorph keys at frames 90 and 120, with settings of 0% and 100% respectively. Use Envelope and set the Metamorph Target to "MyPawn.lwob." You may be wondering why it's alright to return to the first object NOW. The first object's morph target is MyPawnLean1, right? That just happens to be the shape the NEXT morph would go to if we continued!

The only problem we have now is that the original object is still morphed. The last key we set for it was at 100%, remember? Go back to the Metamorph window for MyPawnLean and set keys at 90 and 120. Do you know what their values will be? If you said that 90 would be left at 100% and 120 would drop to 0%, you're right! We're telling it to stay fully morphed between frames 30 and 90, then come back to its true shape in frames 90 to 120.

Now it's time to see what we've accomplished. Go to the Scene workspace and set the Last Frame to 120, the end of one loop of our morph group. Click Layout, then Camera View. As you can see, all of our pawns are visible here. We COULD go and set dissolve envelopes for each of these, but that would be another hassle. Instead, just move all of the objects EXCEPT MyPawn.lwob out of the camera's view. If you intend to move your camera around in a scene like this, or are intending to use reflective tracing, you should probably use the dissolves. Finding "morph storage areas" in your animations tends to detract from the scene...

When all of the extra pawns are out of sight, make a Wireframe Preview. You could use Bounding Box, but all you would see is a stretching box. When the preview has finished recording, play it at thirty frames per second. What's wrong here? It looks like the pawn's head shrinks and enlarges as it bends! Well, it does. That's because the points moved in a straight line, rather than a "spline" curve. Fixing that problem is as simple as making "filler" positions for your morphs. This is where you get the controls, my friend. By this point, you should have a handle on morphing concepts. All you need to do is make two more morph positions: one with the pawn leaned halfway to its' position in MyPawnLean1.lwob, and one with it leaned halfway towards its' position in MyPawnLean2.lwob. Your new order of morph will be MyPawn, MyPawnHalfLean1, MyPawnLean1, MyPawn (2), MyPawnHalfLean2, MyPawnLean2, and MyPawn. Use the same methods explained above to produce this and you'll end up with the exact animation we were looking for. Plus, you'll get a bit of extra experience doing these things "on your own." Try to complete the animation without having to refer back to this column!

By the way, while NewTek claims that you can have up to 16 morphing objects, I recently created an animation with more than 100 morphing objects....Adding a few more caused LightWave to bomb, but still...

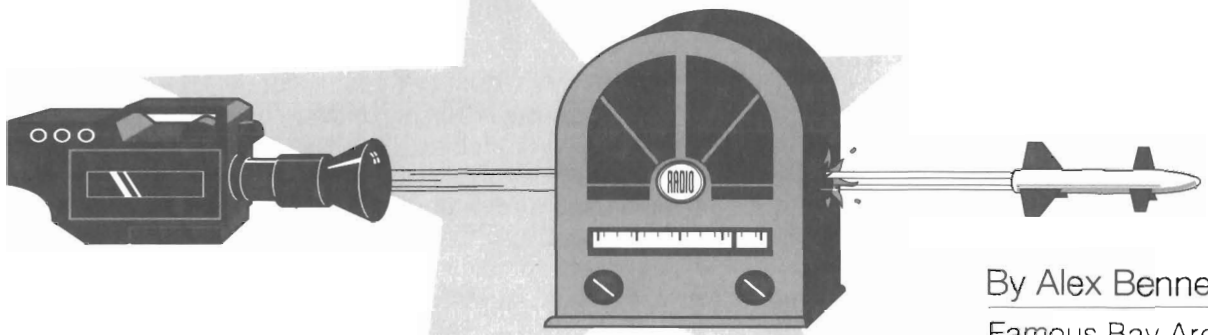
Finally, there is a very annoying change that was made to Modeler which might leave a lot of users in a complicated position. In the old Modeler, you could select a polygon, choose Cut, and you would be left with the points that made up the polygon. In Modeler 2.0, points are now removed

right along with the unwanted polygon. Sure, in some respects this is a good thing, but in others it is tremendously bad! To illustrate the bad: imagine that you need to model....oh....a movie ticket. A movie ticket usually has round "cuts" on the ends, right? The simplest way to make that object (in 1.0) would be to create a flat box (or plane), go to another layer and generate a flat disc, cut away the polygon(s), delete one half of the disc, mirror the half remaining half-circle so it is on both sides of the plane, then reconnect all the points to form your ticket. That was pretty simple, actually. Now, however, the "cut away the polygon(s)" step would be changed to: "select all the points making up the disc, click Cut, click Paste" and then all the rest of the steps listed above. This may seem trivial, and indeed it is in this example, but it boils down to taking three steps to complete a process that used to take just one. Think about how this will affect your work everyday on more serious projects and you'll probably understand my feelings on this. So, why am I bringing it up here, you may be asking? A number of reasons, actually. First, if you try to do any of my previous tutorials from this column or Lighten Up! in AVID, you'll need to modify the steps mentioned or they just plain won't work. Even more imortant, however, is that you can make your opinions on the matter felt at NewTek. Maybe we can convince them to at least put in a button which allows you to toggle between deleting points or not...

Wrapping up this installment of Taming The Wave, I want to take a moment to thank all of you folks for the kind comments I've been receiving. It's really difficult writing for an audience you've never met, and it's nice to know that you're really out there! I hope you'll take the time to write and at least say hello. Let me know what kind of things you're producing as a result of these columns. I'll put you on my mailing list and you'll get some nice discounts on objects and the upcoming Taming The Wave Training Series of tapes!

David Hopkins is an L.A. based animator/producer who also writes a monthly column for LightWave users in AVID, The Amiga-Video Journal. He can be reached at: Mach Universe, 2421 E. Ball Road, #B100, Anaheim, CA 92806. Or E-mail him on Genie at: D.HOPKINS9

HOW VIDEO (ALMOST) KILLED THE RADIO STAR



By Alex Bennett
Famous Bay Area
Radio Personality

I recently came back from two weeks in France and Italy loaded down with six and a half hours worth of tape I shot on a JVC S-VHS-C Camcorder and settled down for 10 days of intensive editing.

As I edited away, I occasionally had to pause in wonder at what exactly I was doing. You see, desktop video for me goes back to the early '70's when I made the same sort of trek with a reel to reel black and white PortaPak.

The camera weighed about 8 pounds and the machine somewhere around 15 to 20. I had a permanent dent in my shoulder by the time my vacation was over. When it came time to edit the footage, it was a cuts-only affair and preroll was a human endeavor in which you used a gauge on the reels that told you how many turns of the reels to make at that point in the tape in order to go back 5 seconds. Both machines were then put into pause and started together. At the edit point you pushed in a big red button the editing unit and prayed. 1 out of 3 times your prayers were answered, the other 2 times you cursed the whole system. I remember doing this whole process on my knees in front of the two machines which were on a bench-style table. Many times I felt as if I was praying to the great god of video. I can still feel the callouses that built up on my knees.

In the next few years, life become a lot easier. I say easier only as a qualifier. The equipment got better, but it also got heavier. I convinced the only friend I knew with any money (Al Goldstein of "Screw Magazine"), to finance an idea I had. We had already been doing a black and white version of a show that I and an editor at the magazine were doing under his auspices called "Midnight Blue". We had gotten it on public access cable and then I convinced Al to go all the way and make the big jump to color, using a new system called 3/4" cassette. We bought one of the first editing systems in this country along with a camera and deck. The camera weighed 12 pounds. It was attached to a camera control unit that came in at another 12 pounds. The recorder was a hefty 30 pounds. Needless to say you couldn't do it alone. At the least it took two people to shoot and if luxury permitted (and you hadn't alienated all your friends with your video mania), three people.

The editing was also an adventure. It had the ability to preroll but not to rehearse edits. You found your edit point and again hoped that it came out O.K. We also had switcher that didn't do much more than fading and keying. There was a genlock but it had this shake in the key that we never really could get rid of. TBC's were out of the question, they ran around $15,000. A/B rolling was the great unspoken.

Then there was cost. The camera was $5,000 and we're talking one tube color here. The portable deck was $3,000. The two editing machines with controller and other $12,000. Auxiliary stuff another $5,000. $25,000 bucks bought us a cuts-only, low quality system. And remember, these were 1975 prices. Money was worth a lot more then. (I now have invested about the same amount of money in a system that revolves around the Video Toaster and the AmiLink VT from RGB Computers & Video. This set-up gives me broadcast quality video production capability and I don't need 3 people to haul it all over Europe. In the immortal words of my favorite TV duo, Ren and Stimpy, "Happy Happy, Joy Joy.")

As years went on I graduated to other cuts-only systems and of course the camera's got smaller. A few years ago all my video experience came into play when I was asked to do two comedy specials for a local TV station. Since I couldn't edit at a union station, I asked that all the footage be converted to VHS with time code on screen. I then went back to my cuts-only system and did a rough edit and then walked into the editing suite with the time code numbers and let the union guy do his job. (Although, not as good as doing it all yourself, this method gave me more con

trol over the final product.) As I watched the union man do the final editing, I began to appreciate how all my previous video experience had paid off. There I was in a big editing suite with a CMX system that controlled and cued all the digital switching. Still, I wished I could have the same functionality and power on a desktop-based system. Well, if you're reading this, then you know that wishes can come true!

I first met Tim Jenison and Paul Montgomery through my association with Penn Jillette of Penn and Teller. They were working on this "thing" that would make my vision of desktop video a reality. It was really the missing link. The system I've recently completed is the system I've always dreamed of. It all revolves around the "Video Toaster". It's relatively cheap by video standards and fits into a small space. My good friends at NewTek have provided me with a lot of guidance and support in building my dream editing suite.

You see I have this theory. In all art as well as language, we use grammar. The grammar of video and film are all the various transitions and effects. Things like dissolves, character generation, fades and so on. The less grammar ability we have available to us, the less effectively we are able to communicate our message to the viewer. We have to be able to speak to him in the proper language he has come to associate with a visual presentation. I remember relating this to Tim Jenison and his response was pure hacker, "Yeah sure, but I built it because I wanted one". The hacker's desire answers the creators dream.

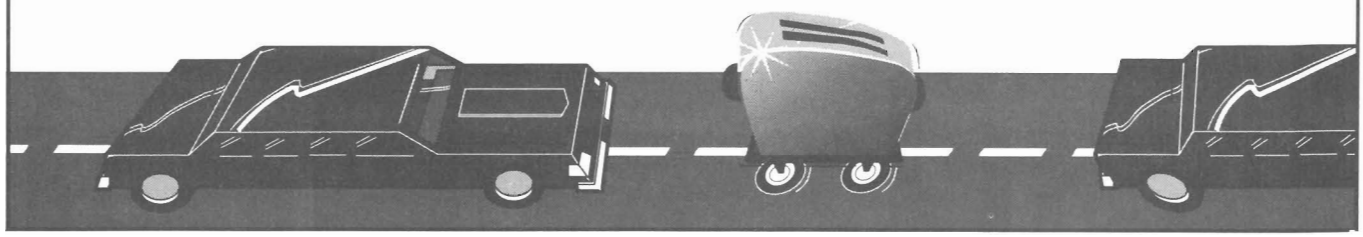
So I built a system that revolved around the Toaster. I incorporated 3 Panasonic decks and to control them, an AmiLink/VT edit controller that pretty much does all the things the CMX system did in the big editing suite. I have a broadcast camera with a S-VHS deck attached but for my trip to Europe I took my camcorder. While the broadcast camera is 3 times as good, the camcorder affords me the ability to shoot on the fly. You pull out a broadcast camera in an airplane and they'll ask you "what the hell are you doing?" and make you purchase an extra seat to accommodate it. Nobody will believe that you are just a private individual shooting for fun. They want to know what network you're with. So you can really capture stuff better when you look like a tourist and can whip it out (so to speak) anytime you see something cool. I have always had this dream that someday, I could have a camera implanted in my head and record everything I saw. The camcorders today almost meet that goal. S-VHS and Hi 8 are so good that even at the lowest end they exceed broadcast cameras of the past.

With the completion of the Europe footage, I really had finished my first major project on this system and the results were amazing, to say the least. It's a real video movie. It has plot, it sustains interest and the editing is the best I've ever done. For the first time in years of doing desktop video, it looks the way I want it to.

I like to think of myself as a nuts and bolts Toaster user. Where others are using it for animation, I use it primarily as a switcher and character generator. Combined with the AmiLink/VT the whole thing worked miraculously.

Now it's showtime. I got a bunch of friends together to watch the finished product. 6 1/2 hours of tape, cut down into a hour and 10 minute show. As it runs I'm waiting for "oohhhs and ahhhs" at every dissolve, every warp, every wipe. Instead there is silence. I want to yell at them, "You idiots, that's a dissolve...do you know how many years it took for me to be able to do that?". They just keep watching. "Hey that picture just wrapped up into a ball and flew away...don't you care?" They still keep watching. When it was all over, they applauded and said "good job". Good Job? is that all? Good Job? Then it dawned on me. They had sat through the whole thing. They had even laughed where I wanted them to laugh. They enjoyed what essentially unedited would have been just another boring video of my vacation....and they didn't even go to the bathroom. I had sustained their interest. I had communicated my "message". I suddenly realized that all my dreams had come true. The reason they didn't notice all the technology is that it was transparent, which is as it should be. They weren't amazed, as you and I would be, at how far we had come. This was simply what they had come to expect and for the first time I had met the demand. The Video Toaster had given me the tools to produce a video that was exactly what these viewers had come to expect from years of watching network television. "Happy Happy. Joy Joy".

TOAST ON THE ROAD II



A Night at the Hollywood Palladium for the T.J. Martell Foundation

By Joe Clasen

The T.J. Martell Foundation in an annual fund raising event celebrates the Neil Bogart Laboratories, and raises funds for research for cancer and AIDS in children. This year's honoree was Ed Rosenlatt, President of Geffen Records and DGC Records. A gala night it was, with limos and stars and a silent auction making over a million dollars in one night. Donations of items in the auction area included a signed Terminator 2 jacket, a Harley Davidson motorcycle (on stage), a basketball signed by Magic Johnson, and over a hundred items donated by the entertainment and sports industries. Roller skating waitresses served dinner and neon set pieces filled the Hollywood Palladium packed with celebrities and media stars. "Bowzer" and the Stingrays, Gary U.S. Bonds, and Martha Reeves and the Vandellas provided entertainment. Dick Clark was the Master of Ceremonies for the night. But in the back of the room, a Video Toaster workstation and an unassuming Amiga 1000 were ready to perform bitplane gymnastics as part of the entertainment.

We had been asked to assist in some video graphics by one of the promoters. He had contacted NewTek directly, hoping they would respond favorably. Pioneer was furnishing a 16-cube video wall and many local lighting and sound companies had offered equipment and technical support. It seems that NewTek was in the throes of trying to get 2.0 written and out the door and had little time for distractions, no matter how good the cause. So a couple of days before the show I got a call asking me to provide "Toaster" services for the event. I got a copy of American Graffiti on Laser Disk to refresh my memory about an era I missed by a few years. With my stock 2500 Amiga, laser disk player, VCR and assorted monitors, cables and camcorder, I arrived on the scene with my secret weapon...my lovely artistic wife and an Amiga 1000.

We set up in the back of the Hollywood Palladium beside the TelePrompter and the video switcher. We set up the Toaster as we normally do, by sending me a program loop. This allows time to set up an effect or Character Generation. In one of my inputs, however, we added the Amiga 1000. It had to pass through the personal time base corrector in the 2500, and it wasn't long before the engineer had the colors in sync on the vectorscope. After talking with the promoters and people running the show, it seemed that they needed a "countdown clock" that would announce the time remaining in the Silent Auction. My wife, Susan, suggested she make a series of animations in Deluxe Paint IV, denoting intervals of 30, 25, 20, 15, 10, 5 minutes remaining. In Toaster Paint, I would make the "Welcome" Screen, the "Silent Auction is Closed" Screen, and generate some scrolling character generation to announce basic directions. These graphics were viewed on either side of the stage by a Pioneer Video Wall on one side and a Sony Projection screen on the other.

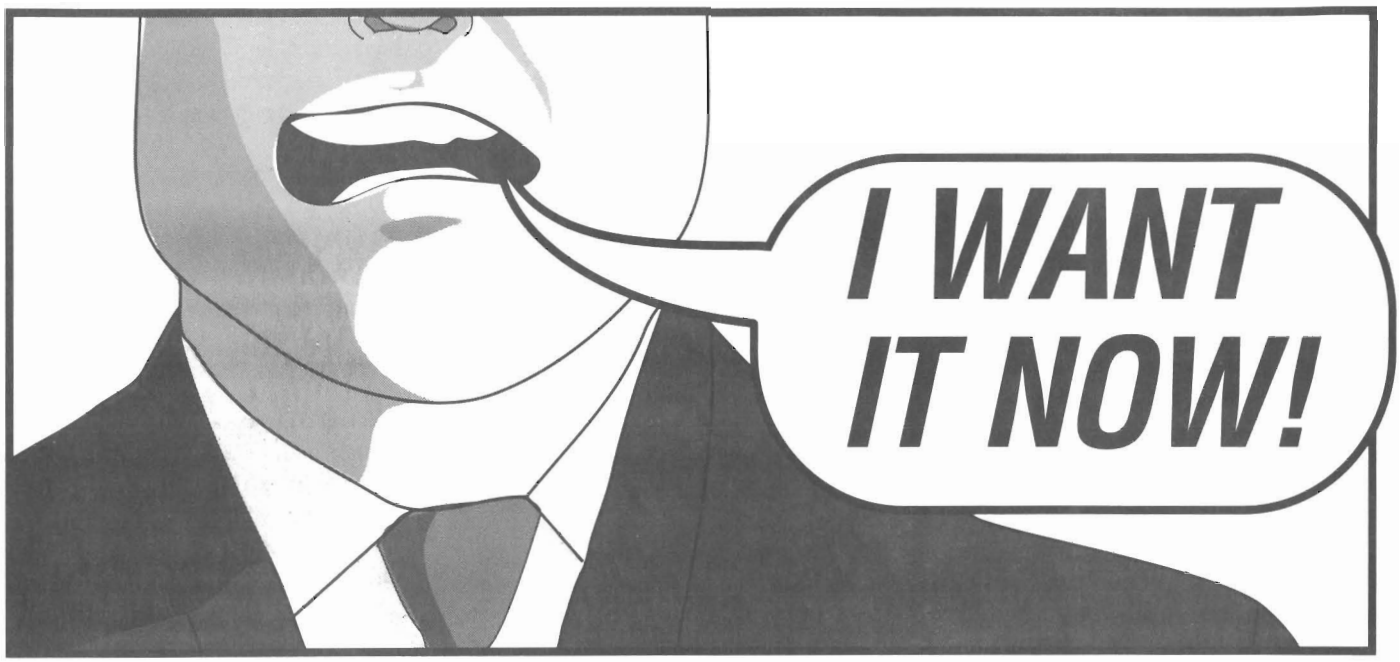
As the afternoon progressed we painted and drew what we needed that night. One small setback occurred when we lost power for a few minutes. I would recommend a battery backed up power supply for these occasions. The power in the Palladium was suspect at best. With multiple neon signs glowing, I suspect more than the usual number of system lockups occur because of poor power conditioning. Susan was producing some great stuff, and people wandered by to watch and marvel at the morphing techniques she was using. Sometimes it felt like the longest live demo ever! The Amiga 1000 has a good composite video output, although Susan cursed having to use a floppy disk-based system. One such morphing animation included turning a poodle into a sign announcing only 25 minutes remaining in the silent auction. Other animations included a roller skating carhop with a scrolling background, a neon fountain glass, and a cheerleader. She was still drawing as the people entered at 7:00, trying to squeeze the last ounce of detail into the animations. She uses low-res 64 color mode. Lower resolution provides extra colors for anti-aliasing and faster playback speed. Not a "jaggie" was seen on the 20 foot tall video wall. As the auction drew to a close, the promoters asked for a minute-by-minute countdown. Undaunted, she quickly modified each animation within seconds to accommodate the request. Grace under pressure!

While Susan was drawing I made a welcome sign for the beginning of the show. I used a frame from American Graffiti that had a generic-looking diner. I layered a couple of titles across the backdrop and had a decent framestore quickly. The podium for the event was a couple of huge dice. To emulate this look I loaded LightWave and rendered two dice that come as objects with the Toaster. I added some brilliant blue and red lights that made the objects seem neon. I could use this screen to run text over or as my end of the "Silent Auction" screen. With that out of the way I ran upstairs and tried to capture the auction items on videotape so I could load them in as framestores. Unfortunately, the light level was so bad I couldn't get a decent picture to capture. We eventually had to send one of the cameras, some lights and a really long cable to capture the images. People started to arrive about then and we decided to play back the video instead of making framestores.

As the event began, the camera with the really long cable went from upstairs all the way out the front door and began to shoot the arriving guests pulling up in their limos by the searchlights. With this input, we keyed Susan's animations on top and various scrolling texts. Switching between the live video source, recorded video of the items and keying between the animations and C.G. kept us busy if not frantic for the first hour. In the midst of this, announcements were made at the podium and vintage video, like American Bandstand, would be switched into the program. As Dick Clark took the stage we showed a short tape about the Neil Bogart Laboratories. After the tape was shown, dinner was served and the video switcheroo began again. Susan fed animations to the Toaster and I keyed black and sent the combined program and animation overlay to the main switcher. This allowed the Main switcher to choose between live video from indoor or outdoor camera, taped video of vintage footage or Silent Auction items. After the Auction finally closed, Shari Belafonte spoke a few words. After the presentation of the award and announcement that the auction had netted over a million dollars, the show opened with Gary U.S. Bonds.

The entertainment portion was a standard two-camera shoot with the Toaster providing MTV-like effects with its' ChromaFX and trail effects. We coordinated switches to use some of the flips and wipes that only the Toaster can provide.

Susan and took turns "toasting" the oldies with every effect we could think of and a few we discovered. It always seems to be the case that you discover more great effects every time you use the Toaster. As the guests danced away the night, we danced with their images up on the video walls, putting a little sixties lightshow flavor into a fifties event. A few framestores were grabbed and used as transitions between bands. In the end, the lights came on and we packed up our computers onto our rolling dolly and left. It was another success for Joe's Desktop Bar and Grill, doing some short-order cooking with our favorite programs, DPaint IV and the Video Toaster.



Toaster Television Commercials

By Frank Kelly

"I WANT IT NOW!" It's inevitable that those words will almost uncontrollably leap from my lips whenever I see a new widget, gadget, or software package that will help to make the various TV spots I produce for local clients stand out from the pack. It's also a commonly heard remark in the business I am engaged in most of the time; advertising. Those of you reading this probably have more than just a passing interest in the Video Toaster; either you own it, use it, or are thinking of getting it real soon now. If you are contemplating using the Toaster for the production of TV spots, you might be interested in some of the "basics" as it applies to the things the Toaster can and can't do in commercials. As much as you might be tempted to just sit down and play the Toaster like a piano and "noodle" out a commercial, it just doesn't often happen that way in real life. Coming from a radio background (a former Disc-Jockey/Production Director) has given me some advantages when it comes to TV production. In the radio business you must learn early to wear many hats, writing copy, voicing spots, and keeping clients as reasonably close to happy as is possible with copious amounts of steaming hot coffee.

This early exposure to "Multi-Tasking" (pre-Amiga) and regular caffeine overdoses helped to prepare me for what lay ahead in the TV production business; a difficulty which I had totally underestimated. In the radio biz, you can grab a couple of sound effects records, use a salesperson as an extra voice and a script scribbled on a bar napkin and do a pretty convincing job of burning Atlanta in your own 60-second radio version of Gone With The Wind. You can produce it in about 20 minutes on a budget of less than $6 or $8. The trick is letting the listener's imagination fill in all the visuals. But in TV that kind of lack of preparation can lead to disaster. The first order of business in TV Production is to understand what the typical demands of a basic TV spot are, namely Concept, Audio, and Visuals.

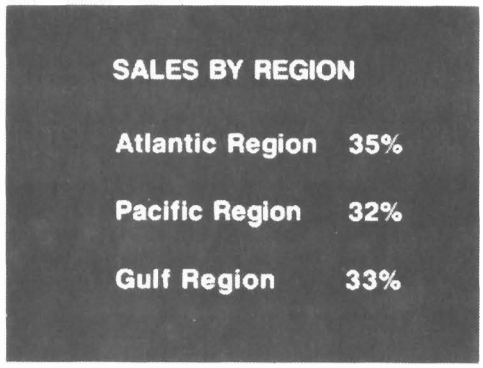
Concept

The theme, concept, or main message is where you start. If you have a sales message to deliver and you only have 29.5 seconds to do it, you better plan ahead. Why 29.5 seconds? In TV you have to allow a quarter-second of black screen and silence at the beginning and end of your commercial—it seems there are no blending segues in TV, no "dance mix" versions of the Energizer bunny or feminine hygiene products allowed. Advertisers want their messages separate and distinct from the previous and those that follow. Telling a story with a beginning, a middle, and an end while creating some continuity between your audio and video usually starts by creating an outline or storyboard. Storyboards are simple sketches at each of the various points in your commercial where visual changes occur. Below each of these mini-windows would be notes for narrator dialog and sound cues such as music & sound effects.

Essentially a scripted outline can be generated from looking at your existing footage if already provided, as in the case of a car dealer with factory footage of new car models cruising down the road or in a showroom. But, in general, you don't just go out and acquire footage and then think up a spot to go with it. You try to have some kind of idea of what to shoot before you hit the streets. Here's where you need to interact

SCREEN-MAKER

lets your AMIGA turn this...



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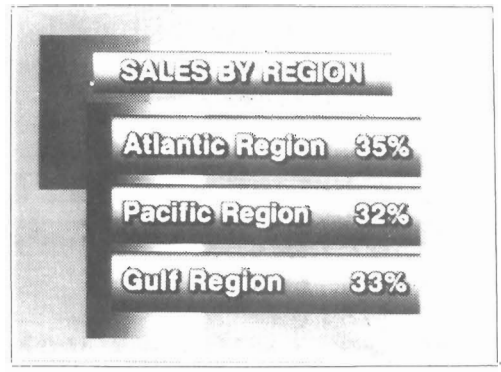
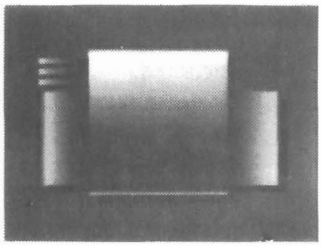
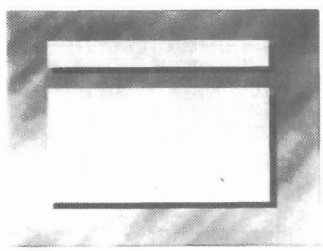
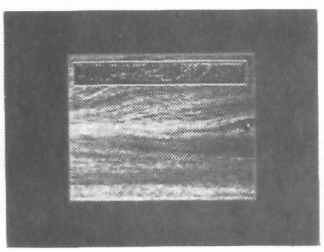






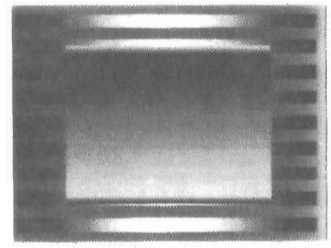


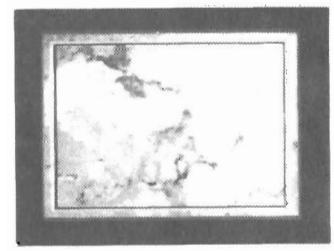
- ✔ TURN ON YOUR AMIGA
- ✔ PUT IN A DISK
- ✔ CALL UP AN IMAGE

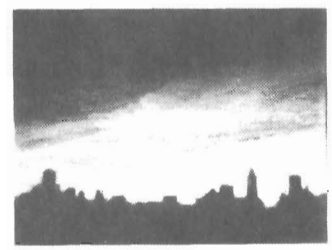
SCREEN-MAKER 100

READY-MADE DEEP COLOR BACKGROUND IMAGES

SCREEN-MAKER images are created on mainframe broadcast computers, and digitally transferred to meet AMIGA 24-bit IFF color specifications.







SCREEN-MAKER images were designed to help TV broadcasters, cablecasters, and major television production centers create better graphics. SCREEN-MAKER can do the same for you.

You can use them as is... modify them... or, adapt them to your specific design. Any way you want to use it, SCREEN-MAKER makes your time more profitable. It's the most cost-effective path to a professional graphic look for your productions.

The new SCREEN-MAKER 2.2 is **Video Toaster** compatible. The 100 images are stored in a proprietary compressed format, on four disks, which will automatically uncompress.

You may keep the images on the original floppy disks, or use 3 MegaBytes to store them in their compressed form, or up to 100 MegaBytes to store them in their uncompressed form.

The Digital Graphics Library, Inc.
1382 Third Avenue - Suite 333 - NY NY 10022
Phone: (212) 978-8508 - FAX: (212) 879-0707

SCREEN-MAKER 2.2 $99.95
100 color images in 24-bit IFF Suggested list price

with your client to set a goal in the making of your message. If the goal is to bring customers in to a specific location for a specific sales event then there will usually be some other advertising involved such as newspaper or radio.

A television version of these "campaigns" should be designed to compliment whatever themes exist, such as those in slogans, logos or copy. Capturing existing logo art or product shots into Toaster via camera into ToasterPaint then "keying" it over store footage is a common but effective way to open and or close a local commercial. In TV production lingo these are sometimes referred to as "Art Cards". Graphic artists would place logo art on a black background, then a studio camera would shoot it into a still store for keying over a different background. The Toaster's digital effects can be brought into play here as well. Once the image has been keyed, many of the Toaster's digital moves can be used to bring it off screen while other footage behind the graphic transitions to other shots. If the message includes rebates or percent-off figures that need to be on screen at the same time the announcer makes reference to them, you will want to build a list of these CGs somewhere on your script or storyboard, then prepare them in advance of your actual edit session.

Audio

I am often asked which comes first, the audio or the video. In almost all cases, you will be editing video footage to audio cues, laying down an audio track, then inserting the appropriate footage. It just wouldn't do to have the announcer continuing to hype the virtues of ladies underwear when you are on a shot of snow tires. There are specific considerations in TV audio you might want to keep in mind, especially in the "mix" ratio of announcer to the music in the background. Because of the size of most speakers installed in TV sets, mid-range sounds such as voices tend to be reproduced more effectively than low and high frequencies. In order to compensate for this you must mix your music "hotter" than you might normally be used to hearing. When you send a broadcast dub to a station they expect to have the full stereo mix pre-balanced. Usually, you will place music on one of the audio channels and the voice on the other on your studio master. When you make your dubs you can listen to the mix through the monophonic speaker of one of your monitors. The output volume of each of the audio channels can then be adjusted as needed for best results. This also allows the option of changing the voice, music, and or sound effects with a great deal more flexibility. An entire book could be written on the various techniques for recording the appropriate kinds of audio for video, such as recording on location, mic techniques, music libraries, etc. In many cases, however, you will be provided a completed audio track.

If you are going to be "rolling your own" audio with the intention of doing "voice-overs," a basic mic/line mixer along with a mic, and a couple of cassette recorders could get you started. There are buy-out music libraries available on cassette. Be careful not to use music that is not specifically licensed for use in broadcast, as you could end up paying some pretty

hefty fines, and maybe land in court. You'll find your local radio station can be a fertile field for voice talent in your commercials. In many cases the radio voices you hear on your favorite stations make only a paltry hourly wage in their on-air jobs and rely heavily on outside voicework to supplement their income. If prompted, most will be happy to provide you with a cassette of their recent work to play for your clients as a form of audition. They may even be able to help you to hire the studio at the radio station to record your audio track.

The radio station is the first place to turn when you don't have your own audio facilities available. I would strongly recommend that you obtain a two-track reel to reel recorder/player since radio stations, jingle companies and freelance voice over production companies will provide you their pre-recorded audio in that format. Although you can obtain acceptable audio performance from an audio cassette, I don't recommend their use except as a last resort. Tape speed can vary greatly from machine to machine, and there is also the possibility of misalignment. I am often surprised to see a production company spend tens of thousands of dollars on their video gear and less than a couple of hundred on their audio. Since the advent of MTS stereo TV, it only makes sense to start taking your audio product more seriously. Your audio quality has to be at least as good as your video or it brings the overall level of the production down. Your selection of voice talent, direction of the talent's delivery as it relates to the visuals that it will eventually be matched with, the background music, and mix levels all can have a tremendous negative or positive impact on your finished product.

Visuals

The coordination of visuals to audio can be extremely effective, or extremely distracting in the communication of your concept to the audience. Here is where the Toaster can really offer a huge bang for the buck. ChromaFX for example, can offer color processing such as sepiatone, combined with the scratchy film effect on the new 2.0 effects panel, and you've got what used to take two passes of tape and lots of external proc amp adjusting to accomplish. Now,it only takes a couple of mouse clicks. This "old-time" film effect is just one of thousands of possibilities the Toaster can give to your production capabilities.

Until the Toaster, 2D and 3D moves, modeled 3D objects, matte transition effects, fly-through logos, and more, were unthinkably expensive, and therefore unavailable to anything less than the highest budget productions. The major danger in having such a powerful arsenal at your disposal is over use. I'm reminded of the Daffy Duck cartoon, where he's trying to get into show business. He's got this great act where he consumes explosives and blows himself into oblivion, a great visual effect, but you can only do it once.

I've recently seen one of the traveling art show & sale spots that was obviously done on the Toaster. It uses the rolling page effect on nearly every transition. No offense intended to the producer, but the use was arbitrary and distracting from the message. Once you begin to produce commercials, you can't help but watch other people's work with a critical eye. I've recently seen the trend in national spots to go completely

away from glitzy digital moves and rely almost exclusively on straight cuts and dissolves. This is revealing when you consider that these commercials cost at least tens of thousands of dollars, sometimes hundreds of thousands (no budget shortages here). Obviously there is something to be said about moderation when it comes to visual effects. I guess I won't be "morphing" my car dealer's logo into a large-busted bikini-clad torso...but one can dream.

Minimum Equipment Needed

Before you embark on your new career in producing TV spots, you should be aware of the formats and standards that are the bare minimum to accomplish the task at hand. No matter what format you use to shoot footage and edit, you will need to provide a finished "dub" of your work on a format that the local TV station will accept. The minimum acceptable format is 3/4" U-matic cassette, even though more and more stations have access to professional "S"; as a general rule they will not accept it as a standard format for commercials. The other acceptable standards (preferred actually by most) are 1" "C" format, and Betacam, BetacamSP, or in some cases 3/4SP. MII is a format that has varying degrees of popularity depending on what part of the country you happen to be in. In my neck of the woods, however, it isn't very widely used as a dub format. By far and away the most popular format for TV stations seems to be 1" C. There are used portable C format machines available for around $5000, and they will usually be more than adequate for dubbing your tapes and more importantly they can also be used to transfer existing work tapes from previous productions into your current project. This "translation" or "transition" format is very helpful in gaining confidence from new clients who have had their previous work mastered on that medium. If you are using the Toaster as a switcher in a edit system then you probably already have a time base corrector (TBC). A TBC is a must when you are making dubs, because when used in conjunction with a waveform monitor, you can properly adjust the video levels, something that you need to pay close attention to if you want to have your materials accepted by the TV station. If you haven't got a waveform monitor, you might want to take your master to a facility that has one to do your dubs. Waveform monitors typically cost anywhere from $300 to $1500 used, but fortunately our friends at DPS (the ones who brought you the personal TBC) have a new item called the Personal Waveform/Vectorscope that retails for under $1000 *[Editor's Note: See the review of the Personal V-Scope elsewhere in this issue]*. The vectorscope is another essential item to have in the studio to help you make certain that your footage has its chroma phase properly adjusted in calibration to the color bars that you place at the beginning of your tapes. Check your public domain library for a handy little shareware utility called Bars-N-Tone from Mike Berro that will create a split field bar graphic while generating a 1Khz audio tone from your Amiga. Although it is not quite as accurate as the split field bars that come from the bars crouton in your Toaster, it is very handy nonetheless. In all instances, when using the "eyeball" approach to adjust levels and hue with a TBC, you must have your monitors calibrated properly. If you don't have the equipment to perform the adjustments, you should pay a professional technician to do it for you. If none of the above is your circumstance because of time or money, then maybe you should reconsider doing TV spots.

Here's a rudimentary quick fix for monitor calibration. Run the split field bars crouton, then place a blue lighting gel over the TV screen (or look through the blue half of a pair of 3-D glasses with the other eye closed) then adjust the hue or tint until you see the most balanced appearance of brightness and darkness between each of the upper row of bars. They should appear light, dark, light, dark, etc. Now, remove the blue screen, and adjust the brightness and contrast levels until you can just detect a slight amount of difference between the black gradations in the lower part of the split field screen. Now when you run footage through your TBC and watch it through this monitor, you will be very close to standard calibration. Using flesh tones to do your initial setup should give the most satisfactory results. Bear in mind that every monitor manufacturer has their own version of perfect calibration, and each has their own characteristics because of the screen phosphors used. JVC monitors tend to yield brighter and more convincing greens, and Sony monitors tend to give warmer reds and flesh tones that are

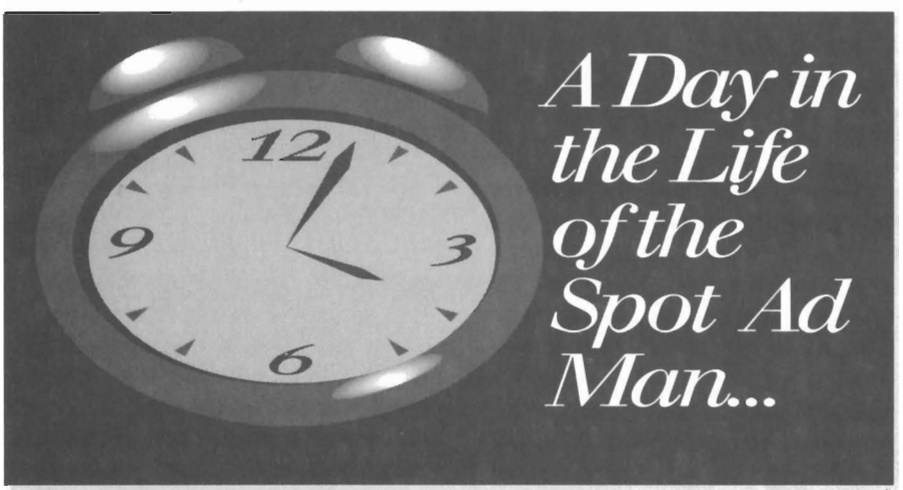
smoother. When you properly calibrate these monitors side by side, one will have a different look than the other, but both will be right. That's why having a vectorscope handy is a must, don't always trust your eyes. Rely on the scope if you are going to adjust colors or you could be seeing purple people on your TV spots. Stations will set up their dub on your bars, not your program material, so watch out!

Not Essential But Put Them On Your Shopping List

My particular set-up happens to be an A/B roll system using 3/4SP as the A & B sources, editing to MII, with a portable 1" machine to use a dubbing machine. I use a broadcast camera to grab artwork on a copy stand and generate sync for the rest of my equipment. Besides various non-essential add ons, like an audio mixer and a second Amiga/genlock downstream from the Toaster, I use an edit controller with SMPTE time code to execute precise edits. The important thing to keep in mind here is that although you don't really need to have all these things to do television commercials (I know of at least one other Toasterpreneur who is editing commercials on "S" then bumping the dubs to 3/4 for air) it helps tremendously in saving time. In a business which marks its deadlines in minus number values, saving time can make all the difference. Being good enough is a foregone conclusion; while being good and FAST is when you can start to realize the profit potential in owning a Toaster set-up that can crank out TV spots. An edit controller with SMPTE time code gives you the precision needed to handle match frame edits for seamless dissolves between your A & B sources. Most of the time you can get by with a single source roll to your master by using the freezeframe function of a TBC, then using that exact frame as your next edit point, simulating an A/B roll. The Toaster's still store capacity makes for a life saver especially if you are using Toaster 2.0. Its new compression routines for framestores makes better use of your hard drive's space and makes loading time much faster. If you haven't invested in Toaster 2.0 yet, you are really missing the boat on some great features, many of which have already been covered in previous articles in this magazine.

Well, that's all for now. In the next Video Toaster User we will discuss other issues of importance to Toasterpreneurs.

Frank Kelly Owns and Operates Spot Ad Productions in San Jose CA.

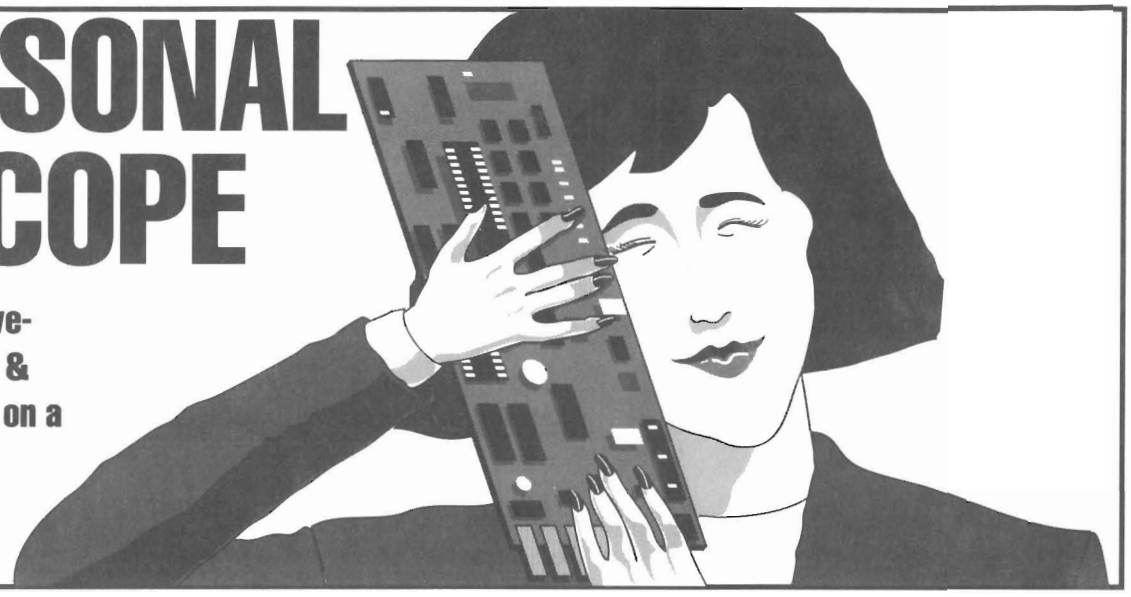


As I enter my office in the morning the first order of business is to check messages, invariably there are at least three that pertain to spots that need to be revised or invented immediately if not sooner. The first two are usually radio spots, easily dealt with later in the day because there is probably some other talent involved that I need to book studio time with based on their availability. The TV spot is the hottest priority because of the extra time it always takes. In today's case I am once again glad that I have the Toaster here on site patiently waiting, ready to give its all to my client's "need it yesterday" deadline. It seems that the rebate offer used in the current spot has been increased to respond to a competitor's recent ad. Fortunately I am the voice on this spot, so I pop into the audio studio, recut the track and walk it into my newly created Toaster post facility. In the past when one of these messages greeted me in the morning, a series of panic calls made to the TV post facility's answering service hoping to "sneak in" between sessions in the day would inevitably bring me many Maalox moments before I could assure my client that indeed the job would get done on time. Now I grab my edit master off the shelf, boot the Toaster, load the project previously saved with all my client's CGs and still stores, insert the new audio track to my edit master, make the visual changes needed and it's all done and ready to make dubs in about 15 minutes. I leave a beeper call to my client, who calls with accolades when I say "it's ready for air, send over the courier." My client will be paying for rush service, I will reap the rewards of having had the wisdom to go into hock up to my eyebrows to put this system together, and the world will once again be a happy and contented place. Until next time...

F.K.

PERSONAL V-SCOPE

Low Cost Waveform Monitor & Vectorscope on a Card



By Tony Gomez

Your author well remembers writing his first Video Toaster article back in December 1990. It was an exciting time to be writing about the incredible breakthrough Video Toaster, and about the third party companies who were developing Toaster support peripherals.

Among the vanguard of companies who "got it" and began releasing milestone support products for the Video Toaster was Digital Processing Systems, Inc. They are a Canadian firm who already had many years of successful experience in producing digital time base correctors, a necessary item for the video industry. The milestone came on the release of DPS' first generation time base corrector on a card, or "Personal TBC" as it was called. The PTBC quickly became the "card of choice" for those wishing to feed video tape sources into their Toaster.

While the original PTBC satisfied most Video Toaster users, some clamored for additional features, such as full processing amplifier (proc-amp) control of video signals, and a true S-Video input port. DPS answered the call with their Personal TBCII, Model VT-2000. But even with their new PTBCII card, there was a need by videographers to more accurately analyze and monitor the video signals processed by the Video Toaster. Again DPS has responded admirably with their Personal V-Scope display card, Model VM-2000. And DPS has just released version the 2.0 revision of their Personal TBCII control software that integrates the use of both the PTBCII and the V-Scope with Video Toaster switcher access.

This article will review the important features of the V-Scope, describe its hardware connections to your Video Toaster, and demonstrate the power of its software control. But first, some introduction about the nature of the displays that V-Scope creates, namely the Waveform, and Vectorscope representation of a video signal.

Introduction: Monitoring with a Waveform Moniter and Vectorscope

Our NTSC video signal standard can be described as consisting of brightness and color information. The brightness or luminance component of the video signal is displayed on a waveform monitor (wfm). Think of a wfm as a highly specialized oscilloscope which displays the brightness of video signals. The waveform monitor display has a vertical axis whose scale goes from -40 at the bottom to 100 and higher at the top in divisions of 10 IRE units each. (These IRE units were convenient units of measure devised by the Institute of Radio Engineering.) There is an alternate vertical axis measured in volts, which ranges from -286 millivolts to +857 millivolts, and for those of you technically minded folks who might calculate this, it represents a total scale of 1000 millivolts or 1 volt. That, by the way, was no coincidence, as the specification level for composite video is defined to be 1 volt peak-to-peak.

The opposite of brightness, called black level or set-up, also requires monitoring. Basically, this is a reference of how "black" the darkest subjects are in the scene. This black or set-up reference level is established as 7.5 IRE units and is seen by a double-hashed horizontal line on the waveform monitor.

The first part of the video line as displayed on the wfm is the horizontal blanking, or horizontal sync, followed by the color burst reference. The horizontal sync reaches -40 IRE on the scale. The color burst reference (40 IRE units) is used by video circuits to process color information. The portion of the video signal following the color burst to the end of the video line is called the active video interval. This active part will range from a low 7.5 IRE black level for the darkest areas, to a peak level of 100 IRE for the brightest areas of the actual video present.

Color information in the video signal is monitored on a device known as a vectorscope. It is so named because the display shown is a "vector" representation of the color signal. The color vector is defined by a certain level and phase angle.

The level of the color vector is given by the distance the trace is from the center of the vectorscope circular display. The actual hue of the color vector is denoted by the angular placement on the vectorscope display. Perhaps the most useful feature of the vectorscope are the so-called color bar "targets." These are the target boxes in which each of the six color bar vectors fall if the video tape the color bars is processed accurately by a time base corrector. More on this later.

Professional waveform monitors and vectorscopes can cost upwards from $5000 for the pair. The newest generation of monitors combine both functions in one unit, but still begin around $3000.

The Personal V-Scope.

The DPS VM-2000 Personal V-Scope is a PC-style card implementation of the most practical features of professional stand-alone waveform monitors/vectorscopes, but at a most affordable price of under $1000!

A waveform, vector, or two different variations of each display (overlay and split) are possible, giving the desktop videographer unprecedented monitoring control. In addition, the waveform/vector display can be superimposed on the video for a clearer display of the signal being monitored.

The V-Scope card fits into the PC-side of your Amiga A-2000x computer. It communicates with the V-Scope software by way of a serial cable that can be connected in two ways; externally to your Amiga's serial control port, or internally by way of the internal serial header connector on your mother board. (This is more difficult to connect up as it requires the temporary removal of any accelerator card in the CPU slot and the connection with the aforementioned serial header on the mother board. However, having your serial connection made internally saves wear and tear on the connectors.)

If you don't use the internal method of serial control, there is a telephone type RJ-14 jack at the top of the card for connection to your computer's serial port. A cable provided by DPS is used for this connection. Before installing your V-Scope you must set the baud rate switch located in a group of 4 dip switches at the upper left-hand edge of the card. You will select either 31.25 K baud (switch 1 up) or 9600 baud (switch 1 down). 31.25K baud is the preferred rate, and you must also change your serial preferences baud rate in WorkBench to match this. (In WB 2.0 this will be found in the Prefs/Serial drawer, and should be set for 31250 baud rate, handshaking-none, parity-none, bits-8, stop bits-1.) Note: if you are also using Commodore's A2232 multi-serial port card, you must use the 9600 baud rate selection.

The other dip switch 2-4 settings can be left in their default (up) condition, which will result in the V-Scope automatically powering up in the full screen waveform display. Other display options are possible, but keep in mind these displays can be easily changed through software control, as we'll demonstrate later.

If you are also using DPS' PTBCII card, a highly recommended option, then you can simply daisy-chain the serial control from the PTBCII card to the V-Scope card. This is done by way of a provided short jumper cable which is connected between the V-Scope's SERIAL INPUT, the third connector back from the top right

hand edge, and the PTBCII's SERIAL THRU, the second header connector back from the top right hand edge. It can also work the other way by first connecting the V-Scope's serial input connector to your computer's serial control port (either external or internal), and then daisy chaining the SERIAL THRU from the V-Scope to the PTBCII SERIAL DATA INPUT connector. So, now that we've made the basic switch settings and jumper connections to the V-Scope card inside of our computer, what about the outside video connections?

V-Scope External Video Connections.

The diagram with this article shows how to hook-up the V-Scope, PTBCII, and two of your most common external video sources (a camcorder and VCR), to your Video Toaster.

Because we are supplying two video sources to the Video Toaster, they must be synchronized. The camcorder video output will serve as the master signal which will synchronize the PTBCII and its time base corrected video from the separate VCR. Source 1, the composite video output connection from any camcorder, feeds the PTBCII's genlock input, the lowest BNC connector on the card. This genlocks the PTBCII card to the camcorder. The next PTBCII connector above that, the Multi-Function I/O connector, has a default setting which is internally connected to this genlock input and passes the camcorder's video on to the Video Toaster's #1 video input.

Source 2, the S-Video (or composite video) playback from our S-VHS or Hi-8 VCR is connected to either the S-VIDEO INPUT (or composite input) of the PTBCII card. NTSC OUTPUT, the time-base-corrected video output from the PTBCII card is connected to Video Toaster input #2. Both Video Toaster input #1 and #2 are now in sync, but not necessarily "in phase." This is usually distinguished on videotape playback by checking the fleshtones. This is controlled by adjusting PTBCII's genlock timing. More on this procedure later.

The Video Toaster's PROGRAM OUT is connected to the V-Scope's VIDEO INPUT. This signal is then "buffered", which means protected from loading effects, and is passed on to the V-Scope's BUFFERED VIDEO OUTPUT, where it is available as a standard Toaster Program source, to be recorded or monitored. The V-Scope's SUPERIMPOSE OUTPUT is connected to another monitor for the purpose of observing the waveform/vectorscope displays.

V-Scope Control Software.

The DPS Personal V-SCOPE comes with two different floppy disk versions of software control-"Personal V-Scope" and "Personal TBCII". "Personal V-Scope" software controls the V-SCOPE card only. "Personal TBCII" software has a wonderful user interface that integrates control of both the V-SCOPE, PTBCII, and Video Toaster Switcher interface. There is also a unique "Personal TEST SIGNAL GENERATOR" (PTSG) program on the V-Scope disk which creates industry standard video reference signals.

Your author has been using the integrated control software (Personal TBCII version 2.0) and it is so powerful and easy to use that I wholeheartedly recommend using your V-Scope in conjunction with the PTBCII card. For original PTBC card owners, contact DPS for information regarding upgrading your original PTBC card to the new PTBCII version card. For early PTBCII owners, also ask DPS about their version 2.0 software upgrade policy.

PTBCII/V-Scope Integrated Control Software

Installation of the PTBCII integrated control software is very straightforward. The usual place to install it is into the same drawer that contains the Video Toaster, but you can also choose your own location. Following successful installation, you'll be presented with the PTBCII icon. After double-clicking on this icon, the integrated control screen is presented. It has a very pleasing neutral gray color with black and white characters (similar to Toaster 2.0) and is very thoughtfully laid out. The entire left 2/3rds of the screen is devoted to set-up of the DPS PTBCII card. The upper half of this contains the sliders for the processing amplifier (proc amp) controls. The lower

half contains the genlock timing adjustments for the PTBCII card.

The right third of the integrated control panel contains from top to bottom: PTBCII video mode control selections, V-Scope control panel, and gadgets to select the Video Toaster's switcher interface, WorkBench, or other features.

V-Scope Control Panel

There are 10 gadgets and one slider which control the V-Scope card:

Waveform Mode Controls and Gadgets.

Waveform mode select gadget, when selected, places the V-Scope in the full screen waveform display mode. This display mode shows the video waveform with the professional IRE scale as previously described. In this mode, you also have a choice as to the variety of waveform display; either 1 or 2 horizontal line method, as selected by cycling through the 1H/2H cycle gadget. 1-H mode provides the best display resolution, while 2-H mode is used in viewing a wider portion of the video waveform. Also available in the waveform mode is the FLAT/LOW PASS gadget. In the FLAT mode, everything is presented to the waveform display. In the LOW PASS mode, color information and other high frequency noise is prevented from influencing the waveform display for much more accurate settings.

Vectorscope Mode Controls and Gadgets.

The Vector Mode Control gadget places the V-Scope into the full screen vectorscope mode. This vectorscope display shows the color information of the video signal with the standard vectorscope reference boxes for SMPTE color bars and the I and Q axes.

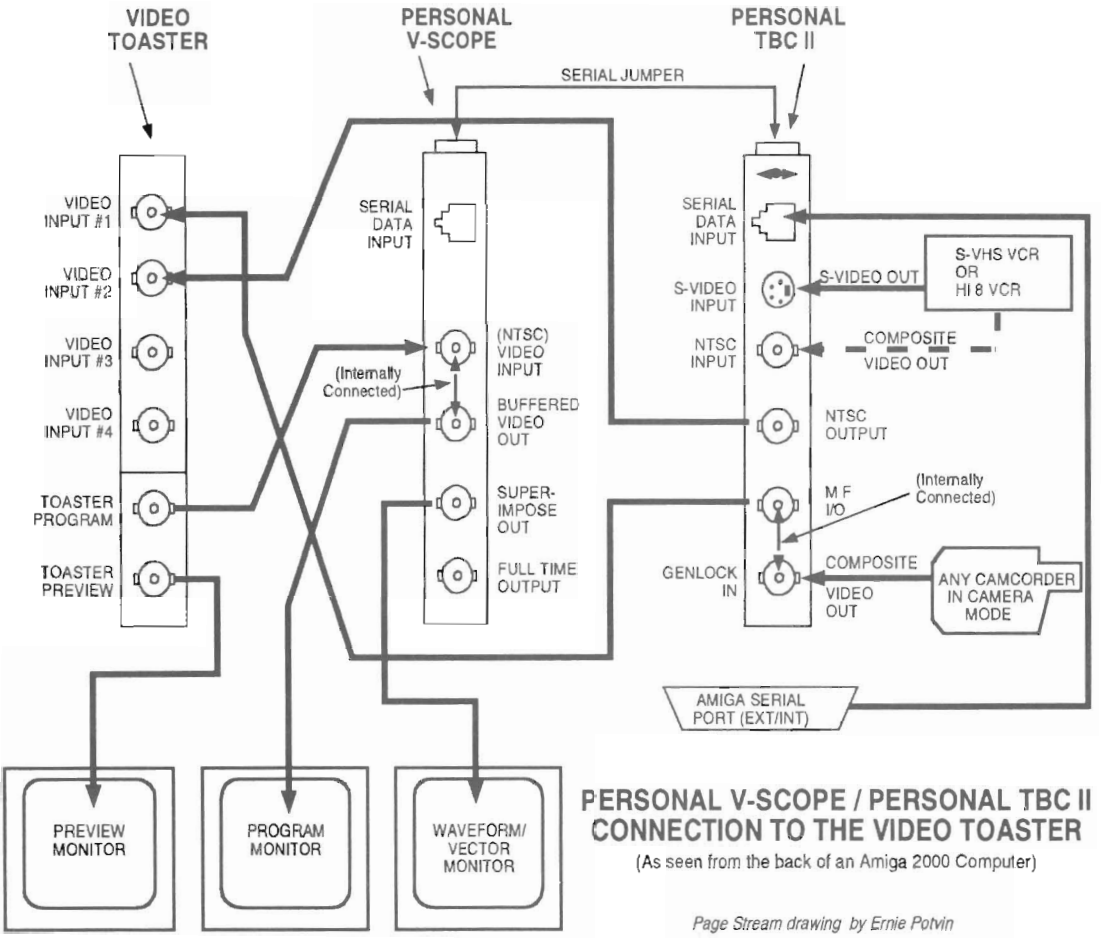
Combined Waveform/ Vectorscope Modes.

There are two additional gadgets which place the V-Scope into combined displays. The OVERLAY gadget creates a screen showing the Waveform monitor and Vectorscope displays overlaid together. You also have a choice of 1-H or 2-H display resolution mode, and FLAT/LOW PASS for the waveform in this combined mode. This overlay mode is very convenient for seeing all aspects of the video waveform; both brightness and color at a single glance.

The SPLIT gadget produces a side-by-side display unlike any other waveform/vectorscope on the market. The vectorscope display is in the lower left quadrant, while the waveform display is in the lower right quadrant. The upper half of the display is the actual video picture. This split display mode is useful to see a greater portion of the video signal as well as the waveform/vectorscope display.

SUPERIMPOSE and TRACE Controls.

Below the previous gadgets are the SUPERIMPOSE and TRACE mode gadgets. Activating the SUPERIMPOSE gadget will create a video picture composed of the Toaster Program Out video superimposed with the previously selected waveform/vector mode. When SUPERIMPOSE is de-selected, the SUPERIMPOSE video output contains a copy of the Toaster Program Out. The trace mode cycle gadget allows the selection of NORMAL, PEAK HOLD, and VARIABLE. NORMAL, as the name implies allows the V-Scope to operate as a real time waveform monitor/vectorscope, with new displays updating every 2 video frames. PEAK HOLD presents a cumulative effect in which the largest video signal peaks are held and displayed. This is useful for unattended monitoring of video tape during playback, storing the highest video signal peaks in memory on the V-Scope, and determining if your TBCII's proc-amp video level setting was properly adjusted. VARIABLE trace mode allows the updating of the V-Scope at selected rates. The update rate is determined by a slider with values ranging from 2 to 127 (or from instantaneous to approximately 5 second intervals). This variable rate can improve certain display modes, such as the waveform monitor/vector combination in 2-H



PERSONAL V-SCOPE / PERSONAL TBC II CONNECTION TO THE VIDEO TOASTER

(As seen from the back of an Amiga 2000 Computer)

Page Stream drawing by Ernie Potvin

display mode (try 4 as opposed to the NORMAL setting).

The trace FREEZE gadget, when selected, makes an instantaneous snapshot of the current waveform/vectorscope being displayed-great for those of you with short memories!

Video Toaster, WorkBench, and other Gadgets.

Beneath the trace mode gadgets are a set of buttons which enable you to go to the Video Toaster or WorkBench, and permit loading and saving of TBCII settings. We won't dwell on these at great length, but the SWITCHER gadget is handy to get in the Video Toaster's Switcher Panel. When you do so, you'll also note a curious new "half-slice" called DPS to the right of the LightWave 3D slice. This is a great way to get to the PTBCII/V-Scope integrated control screen from the Video Toaster switcher screen.

Personal Test Signal Generater (PTSG) software.

A special program on the V-Scope disk is called Personal Test Signal Generator. It is used to create industry standard video test signals as Video Toaster FrameStores. When opening the TSG icon, you are presented with an information page, followed by a selection screen which gives you a choice of selecting either Toaster 1.0 FrameStore or Toaster 2.0 FrameStore versions of the test patterns. The Toaster 2.0 FrameStores are slightly wider than Toaster 1.0 FrameStores. Also, once 2.0 FrameStore versions are selected, you can only use them with Toaster 2.0 software, not the older 1.0 version.

32 test signal patterns are possible, and the TSG software will check your Toaster FrameStore directory to see how much room is available for creating and storing these test patterns. Normally, the best procedure is to clear all of the selected patterns, them re-select the ones which will be useful. The most useful test pattern is SMPTE Color Bars. We'll describe its use in the following mini-tutorial.

Using V-Scope/TSG/and PTBCII with Video Toaster: A Mini-Tutorial

To demonstrate the full power of this integrated control software we'll go through the procedures to properly time and phase the system shown in the diagram with your Video Toaster. Not only must the Toaster's input video sources 2-4 be in time sync with input 1, but they must also be in proper color phase. This is achieved with the genlock timing adjustment sliders at the lower left of the integrated control screen.

The most straightforward way to adjust genlock timing is to compare a known reference signal, such as SMPTE color bars as generated by PTSG's test signal generator, with a video tape playing back recorded SMPTE bars. The comparison is made using both the waveform monitor and vectorscope mode of V-Scope.

Timing and Phasing Procedure.

STEP 1. Using the TSG program, select Create 2.0 Patterns, Clear All, select SMPTE Color Bars, enter starting FrameStore #(say 800 for convenience). Select Create Test Patterns.

STEP 2. When the WorkBench screen returns, select the Video Toaster's switcher with <ctrl><ctrl><alt><alt>. Select the FrameStore load gadget and use the + key to advance to the SMPTE_Bars framestore just created. Select ENTER on the numeric keypad. The SMPTE bar frame store will load into the first available digital video

buffer, DV1 or DV2.

STEP 3. From the Toaster's program bus, select either DV1 (or DV2) which contains the SMPTE bars, and connect it to a VCR/camcorder for recording. Set your VCR/camcorder to the fastest recording speed, and record at least 10 minutes of the SMPTE bars. If you record less time, you'll be constantly rewinding and playing back the bars. An even better procedure would be to record the entire tape with bars. As long as you don't change cables, different grades of tape, or VCR's, this color bar test tape can be used as a set-up each time you prepare a video tape playback for your Toaster.

STEP 4. Verify your connections are like the diagram. Playback your SMPTE color bar test tape (S-Video output connections preferred) into PTBCII. Your other camcorder will serve as the master synchronizing source, but only while in the "camera" mode-not playback mode!

STEP 5. From the Toaster's switcher, select DV1 on the Program bus, and Source 2 (tape bars) on the Preview bus respectively. Select a wipe pattern, such as #151, wipe to bottom, located in Bank D of Toaster 2.0.

STEP 6. Select the DPS half-slice next to the LW3D slice, and make the following V-Scope control settings: S-Video (or composite if you don't have a S-VHS/Hi-8 playback VCR), waveform display mode, low pass, 1H, superimpose on, normal trace rate.

STEP 7. Observe the DV1 SMPTE bars on the waveform monitor. (There is no control from the proc-amp on the TBCII because the bars are internally generated from the Toaster's frame store). Notice the white bar segment at the bottom of the SMPTE Bars seen from the Toaster's Program output is displayed as a signal reaching a peak of 100 IRE units on the waveform monitor. Switch to vectorscope mode, and verify the Y(yellow), R(red), Mg(Magenta), B(Blue), Cy(Cyan), and G(Green) color bar vectors fall very close their target boxes. (Overlay mode will show both displays at once).

STEP 8. Now go to the Switcher gadget, and pull down the T-Bar half-way. You'll probably notice that the tape bars in the lower half will look noticeably off in hue and saturation from the live SMPTE bars. This is due to the TBCII genlock timing which needs adjustment. Return the T-Bar to Program 2 (tape bars).

STEP 9. Select the DPS half-slice next to the LW3D slice (if it's not there, select in the area anyway), and the integrated control screen will be displayed. Select the vectorscope mode, enable the genlock timing gadget, and with the curser on the fine slider, observe the vectorscope display while adjusting. Adjust the fine slider until the tape bar vectors are pointing towards their target boxes. Their level may be properly set, so with the chroma slider, bring the vectors to within their target boxes.

If the vectors all seem to be off in angular distance, then adjust the hue control slider until they fall in the target zones. However, one must note it is impossible to get the tape bars to exactly match the live SMPTE bars.

STEP 10. Select the switcher gadget, bring the T-Bar slider down half-way, and observe the vectorscope display. The tape bar vectors, while notably noisier, should be close to the reference SMPTE bar vectors. Returning to the DPS slice, select the waveform mode, return to the switcher, and pull the T-Bar half-way down, while observing he waveform monitor. The displays should be very close to each other. If not, select the DPS slice again, adjust the video and black sliders until the peak white and black set-up levels are at 100 IRE and 7.5 IRE units respectively. Return to the vector mode, and verify that the settings have not been altered. Adjust accordingly. You can also use the overlay display mode, in which both waveform and vectorscope displays are shown simultaneously.

The end result of all this adjusting is a properly timed and phased system.

Once you're happy with the results, from the TBCII control screen, select save, which will save the results into your S: directory as tbc.defaults. The nice feature about this is that when you use your PTBCII again, it will load up these default settings. Unless you have made changes to your system, everything will remain in proper timing.

Real-World Video Situations

Okay, so you've gotten your tape playback of color bars to be properly synched and phased with your Video Toaster. Now what about your own real world tapes that might not necessarily have color bars on them. No problem!

It's basically a matter of setting the proper video, black, and hue levels.

This is easily accomplished by monitoring the peak white levels of the real video scene, and adjusting the video slider accordingly. Also, the black set up is performed by observing the darkest scenes in the picture, and adjusting the black control until they are near the 7.5 IRE set up level

Hue control adjustment is best done on flesh tones. The Hue is adjusted until the flesh tones appear natural. The color level is adjusted until there is no over-saturation or color blooming.

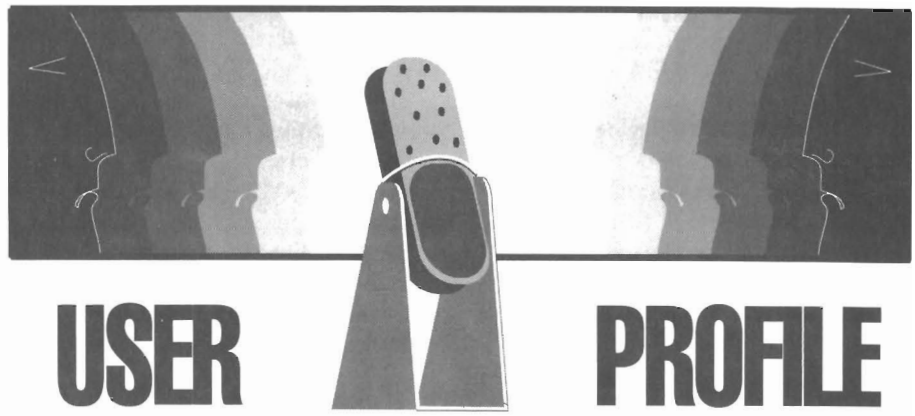
The Bottom Line

So, how does the DPS VM-2000 V-Scope stack up against the more expensive waveform monitor/vectorscope combination units? In a word, very nicely! Of course, one must realize there were some compromises made to produce this breakthrough video monitoring product. You won't get all the bells and whistles of the stand-alone units; selectable line displays, expanded horizontal time scales with much finer degrees of display resolution, vertical interval displays, or subcarrier/horizontal sync phase measurements. But you do get a very practical waveform/vector monitor which will provide the most useful features of the stand-alone units (as well as a unique SPLIT side-by-side mode), while costing thousands of dollars less! You also get a powerful package of integrated control software that is easy to use and understand, and a user manual which not only contains a complete description of the V-Scope features, but also is an excellent mini video reference manual besides. More importantly, the integrated control software communicates with their VT-2000 Personal TBCII card and the Video Toaster's switcher directly for the utmost in user convenience.

For my money, it's a combination that's going to be hard to beat! Hat's off to Digital Processing Systems, for they certainly have "GOT IT!" when it comes to Video Toaster support!

For more information about the Personal V-Scope, contact:

Digital Processing Systems
11 Spiral Drive
Florence, KY 41042
(606) 371-5533



USER PROFILE

An Interview with Nathan Bacher of All Pro Video

By Stephen Jacobs

Toaster owners tend to be "renaissance men" (and women). They're people interested in all aspects of video production and the digital arts. Nathan Bacher, Vice President of All Pro Productions, is no exception. Nathan has been involved in desktop video, and the Toaster, since its earliest days. All Pro Productions is housed in a luxury apartment complex on New York's upper west side. The common, everyday appearance of the outside of the building belies the high technology found in All Pro's suite.

Video Toaster User: How would you describe All Pro?

Nathan Bacher: I would say that we're a video production and post-production house that's able to use the Toaster for 3D animation and other 24-bit services to enhance the value of the product for the client. Our ability to deliver relatively inexpensive, layered 3D animation is frequently the "closer;" the deciding point that makes a potential client go with us, rather than with another house.

VTU: What do you mean by layered animations?

NB: Animations that use different 2D and 3D animations to create one cohesive piece. We have one Toaster equipped system now, and we're looking to add another. In addition, we have several Amigas equipped with other types of video peripherals. I use a single frame controller, the SMPTE Exerciser, developed by Maurice St. Sauiveir, marketed by us, that can trigger up to four machines at the same time. This lets me work with four layers simultaneously.

For example, I can send the first element out of the Amiga with the Firecracker board (a 24-bit RGB display board sold by Impulse, Inc.) into a second system that has a Vista Board running on the IBM side of an Amiga with a Bridgeboard. So the first animation and the second animation are merged. The output of the Vista can go into a third system running a third animation sequence with the Magni Genlock. The output of the genlock then goes into the Toaster, for the last element of the animation and output. This allows us to combine, for example, three very complex, detailed, animated characters on top of a LightWave generated, animated background for very dense animations.

This type of densely layered work is usually very expensive. The economy of the Toaster allows us to be very competitive in our pricing.

VTU: How does this act as a "Closer?"

NB: For example, we were working on producing an industrial tape for Bell's Security. They're one of the largest security companies in New York City. I told them we could do some 3D animations for them and they said "What do you mean?" They hadn't thought about it. So I threw together this 3D bell animation, you know, a kind of "Taco Bell" thing that swung up and hit their name. Then their logo dropped down from it. They went wild over it, so I threw it into the bid for the job and that closed the deal.

VTU: What kind of projects does All Pro do?

NB: At the moment, we're complet-

ing an animated opening for a new syndicated network comedy program and a pilot for a new sitcom for HBO. We have several clients who are in the industrial and wedding video markets. We have a business that produces film industry promotional programming for video walls and places them in movie theatres around the country. We also have a few hardware and software products in development. Some of these are aimed directly at Toaster 3D producers, and wedding video producers who own Toasters.

VTU: How does the video wall business work?

NB: We're a dealer for Imtek Video Walls. We've got one program with the film industry where we're placing the walls to show industry trailers in movie theatre lobbies. We've placed walls across the country. We're also looking to develop another line of programming that shows ads and information in shopping malls.

VTU: How do the walls get programmed for display?

NB: Right now we're programming them primarily with one video source. In the mall advertising systems, we'd like to design a system where the walls can do wipes, switches and multiple sources controlled by a Toaster system driven with an ARexx script. Ideally, we'd couple this with some products from Active Circuits that we're helping to develop.

VTU: Can you tell us more?

NB: Well, we're almost acting as product managers for Active Circuits now. There's a Digital Signal Processing board in the works now that would allow us to develop a series of hardware and software products, some of which can work well with the Toaster. I'd incorporate the DSP board into the Toaster driven video wall system to speed things up.

We're also looking at developing a 3D digitizer and we hope to port Ray Shade to the system. We'd like to work with NewTek to make sure that these products can export files and objects to LightWave, and that the DSP board can talk to the Toaster itself.

VTU: What do you mean by a 3D digitizer?

NB: There are two different types of 3D digitizers on the market. They're used for creating 3D model data directly from real objects. An example of the low-end type is the Mirror Imaging system. The object is placed on a magnetic platform. A magnetic pen is used to enter gridded points on the object. An example of the high-end systems is the Cyberware digitizer that was used to do the Terminator 2 effects. The object is placed in a field that will digitize it, do an infrared scan to determine the materials the object is made from, and do a texture map. All in just a few minutes. We'd like to create a system (10-15K) that will do two of those three functions (it wouldn't do the texture map). We've got the math figured already and that's the hard part.

VTU: That sounds like the 3D market, what do you have aimed at the Toaster wedding video producers?

NB: A lot of the folks in that market bought the Toaster for use as a switcher, character generator and paintbox. A lot of them would like to start taking advantage of animation and LightWave, but they don't have the time to really sit down and learn the program. To help those folks, we're assembling a package of utilities and easily customizable 3D animations, with utilities and instructions. We're trying to target it around $300, so that it's affordable. This package will provide them with enough material so that they can use 3D as their "closer" right away. They won't be hampered by the learning curve needed to start working in 3D.

VTU: You mentioned that you're able to use the Toaster to provide a client with complete 24-bit services. What does that mean?

NB: Well, I mean a few different things. First, we're able to go to film for a client. For 24-bit images, storage is a major factor and going to film provides you the cheapest, highest quality storage. When we get into 2K image sizes, hard drive and RAM space become critical. I like the fact that 2.0 has now started to support film recorders, that's great. I wish that it would be more user friendly to customize. Not all of us are using AGFA equipment. I'd like to see NewTek develop film recorder drivers that go straight through the SCSI bus.

Frequently, a client will want to use frames or images created from within LightWave in their print advertising as well. Now that LightWave 2.0 can support images larger than the screen, we can actually do that print work directly from in LightWave itself. For our print work, we're working with a new process called digital QuickColor to go direct to plate, bypassing film entirely. The process is a Postscript process. We use Professional Page to convert LightWave images to Postscript and then send the file out to the QuickColor bureau to get the plate. The ability to avoid the in-between step of going to film gives our client greater image quality at lower cost. I can charge print work at dramatically lower rates than I could in the past and still make a profit. It's a real winner for us.

VTU: Where do you see this all going in the future? Where would you like to see the Toaster take you?

NB: My ultimate goal is to work on an adult science fiction adventure/comedy type of series. I'd like to do a galactic conquest type of thing where the main characters have escaped the invasion force and are trying to save the galaxy. I see it as a multimedia thing using 3D backgrounds, with 2D and live action foregrounds. And then go to a full length motion picture. That's my dream. Stay tuned.

PIXEL 3D

Using Pixel 3D 2.0 with LightWave and Modeler

By David Duberman

If you use Lightwave for commercial work, you've probably done and will continue to do your share of flying logos. It may not be the most exciting type of 3D animation, but it pays the bills and can actually be fun if approached with the right attitude. One of the best ways to make your flying logo animations stand out from the pack is to use unique typestyles.

If I've caught your attention, you'd probably appreciate knowing about a practically unlimited source for good-looking 3D fonts, beveled or straight-edge. It's a program called Pixel 3D and its primary function is to extrude IFF pictures (up to 32 colors; no HAM or 24-bit) into three-dimensional objects. Feed it a picture of a word and it spits out a 3D logo ready to load into Lightwave and animate. Well, almost ready; as you'll learn in this article, a bit of tweaking in Modeler is required to keep a beveled logo's sides smooth and edges sharp, as we expect of a handsome 3D logo.

Another function of Pixel 3D is to create 3D "landscape" objects derived from grayscale information in bitmapped images. We can use this feature along with Lightwave's powerful morph capability to create some interesting and unusual animation effects, which we'll explore in a future article.

Picturing A Word

There are a number of ways to get a picture of a word in IFF format to use with Pixel 3D. One of the best is Deluxe Paint; any version will do. Run the program and set it to High Res with two colors. Make sure white is the foreground color and black is the background. You can draw the word using any tools, or enter it from the keyboard using as large a font as possible.

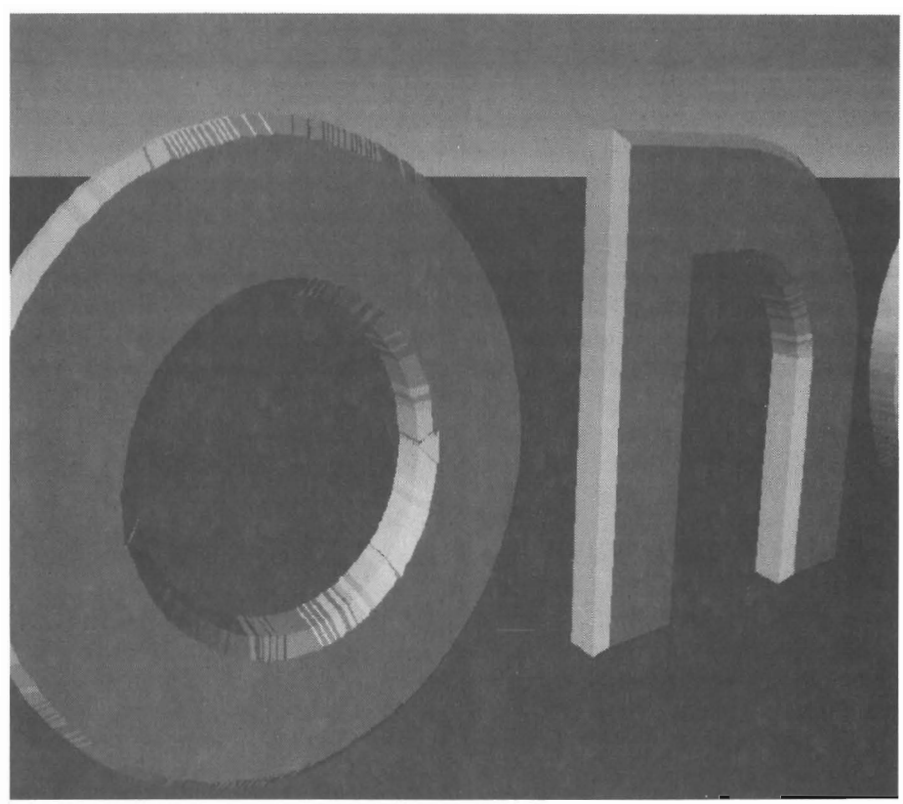


Figure 1

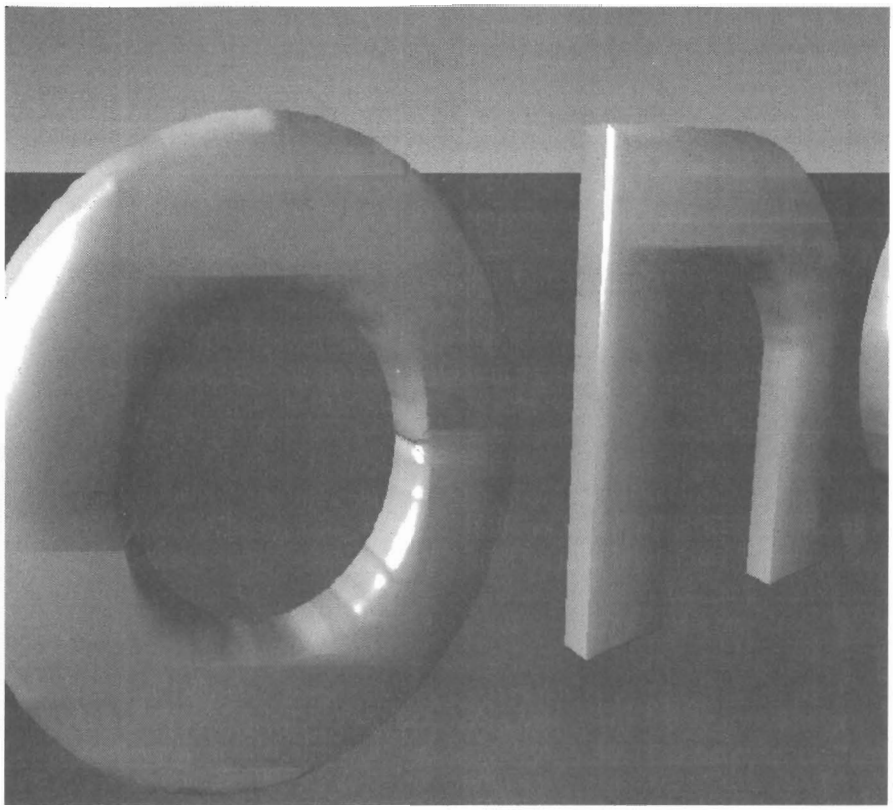


Figure 2

You can get large fonts from a variety of sources; one good reasonably- priced package is Font City from Allied Studios of San Francisco. When you're happy with the look of the text, save the picture to disk.

Because Pixel 3D deals with bitmaps rather than structured images, it'll produce smoother-looking text if you feed it very large screens, assuming you've got sufficient memory in your Amiga. This is an important point; to create smooth-looking curves your objects must contain many polygons, so you need as much memory as possible. Some of the 68040 cards for the Amiga 2000 can hold 32 megabytes; this is not overkill if you're doing professional 3D animation. Although there is a polygon limit of 65,000 in the current version of Lightwave, this will probably be removed from future versions.

Deluxe Paint lets you paint on a page larger than the screen but it's difficult to create a full page of good-looking text that way. The multifaceted Art Department Professional serves well as an alternative method of creating large text screens. The Text_Visual Operator in ADPro 2.0 lets you place text in Amiga fonts anywhere on the background. ADPro reduces the image so that it fits the screen during placement, but the actual drawing of the text takes place at full resolution. In fact, if you have a lot of memory and use scalable fonts with Workbench 2.0, you could create a text screen of 1000 by 1000 pixels or more to minimize aliasing or jaggies in the final object. Just use the Backdrop loader in Fill mode to create a solid black background, then use the Text_Visual operator and set the text color to white. Be sure to set to 2 colors and use Execute so that you can save as black-and-white IFF.

Another way to create large text screens with smoothly outlined letters is with a desktop publishing program such as PageStream or Professional Page. Here's an example. In PageStream I typed the word "Phone" in the 180-point Saturn font onto an 11 by 8.5- inch page (horizontal) page, which almost filled the page. I then used PageStream's IFFILBM printer driver to save the full page to an image file at 300 dots per inch. The picture that resulted was 3,300 by 2,560 pixels. (Actually, when printing a horizontal page to disk, for some reason Pagestream rotates the page 90 degrees, resulting in a vertical object, which is easily rotated back to the proper orienta-

tion in Layout.) Although I have a total of 17 megabytes in my Amiga system, this file was too big for Pixel 3D to handle. By reducing the page size to 9 by 7 inches or 2,700 by 2,112 pixels and leaving everything else the same I was able to create a file that Pixel 3D could load.

Pixel 3D Extrusion

Before loading the image, I clicked on Pixel 3D's Config button and set Extrusion Value 2 to 40, clicked next to Beveling to turn it on, set both Beveling Inset and Beveling Depth to 10, and then clicked on Continue. Next I clicked on the Import button and selected the image file output from PageStream. After the importing process was finished and the 3D object appeared, I saved it in Lightwave format.

I first loaded the object into Lightwave and rendered it without making any changes; the surface was unsmoothed. You can see the results in the closeup view in Figure 1. Although the object was derived from a very high-resolution image, the stair-stepping inherent in the bit-mapped image is very much in evidence.

The obvious solution would be to set Smooth on for the word's single surface, so I tried that. The results are shown in Figure 2. There are a number of things wrong here. While we've gotten rid of the stair-step look, we've lost our sharp edges completely. Also that nasty horizontal streaking is an undesirable side-effect of trying to smooth polygons that shouldn't be smoothed.

It's easy to understand what needs to be done if you know a little bit about how Phong smoothing works. If the angle between two adjacent smoothed polygons is less than 90 degrees and they share one or more edges and vertices, the program treats them as a single curved surfaces which is then shaded accordingly. However if the two polygons don't share any vertices, the edge between them is not smoothed. Therefore we need to create extra vertices at the two edges which need to be sharp, which we do by separating the sides from the beveled surfaces, and the beveled surfaces from the front, then replacing them without eliminating the duplicated vertices. Doing this with Modeler is trivial and only takes a few seconds.

If you're following along, click on Scene and save the scene. Then click on Modeler, wait for the program to load, and click on Modeler again to enter the pro-

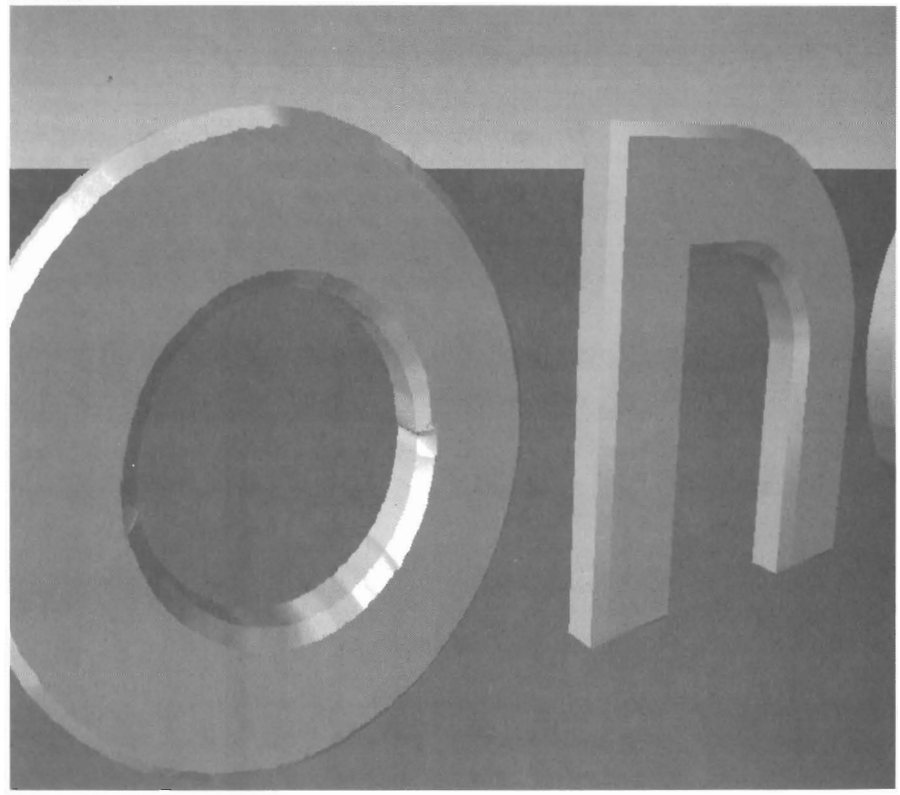


Figure 3

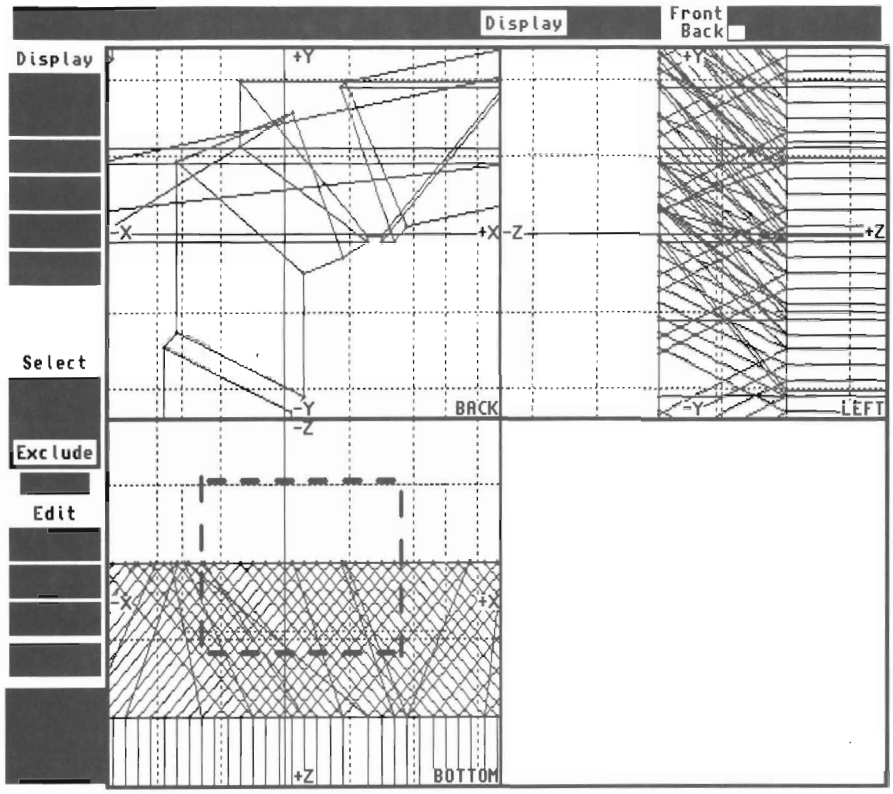


Figure 4

gram. Click on Disk and load the text object output from Pixel 3D. If you're in the default Logo (XY) view, you'll see a closeup of the logo from below in the Bottom view in the lower left quadrant. We want to drag an exclusive volume around the frontmost (i.e. forward-facing) polygons only. Click on Volume on the left side of the screen, then drag a box around the front (topmost in the Bottom view) set of polygons (see Figure 4—heavy lines added for emphasis). Don't worry about left and right; for now we're mainly concerned with top and bottom.

Now we'll zoom out to full view and expand the Volume box to encompass the entire set of front polygons. Click on Display at the top of the screen, then on Fit at the left side. After a few seconds you'll see the entire logo in all three views; you may or may not see the drag box, but if not don't worry. Position the mouse pointer in top left quadrant of the lower left quadrant, that is the Bottom view. Click and hold the left mouse button and move the mouse leftward and upward until the drag box extends beyond the object's left side. Then do the same thing on the right side of the Bottom view. By checking all three views you can verify that you now have a Volume box that encloses the Logo's frontal polygons.

Press the W key and note that there is a relatively small number of polygons in the Volume. That's because the front is flat and can be made up of few many-sided polygons. Click on Ok. Click on Cut on the left side of the screen, then press the W key again. Note that while the Volume now encloses no polygons, all vertices remain. Now click on Paste to replace the cut polygons. The main result is that the front polygons that connect to polygons in the beveled area now have their own vertices, so the program will no longer try to smooth over the edge between.

Now we'll do the same thing with the logo's side surfaces. Make sure you can see the logo's back edge from the Bottom view; pan the view if necessary. Make sure you're in Exclude Volume mode— the volume from before should still be there— and in the Bottom view, drag the top of the Volume box down so it's below the bottom (or back) or the logo. Repeat the Cut and Paste, and save the logo under the same file name, replacing the original object. That's almost it!

It remains only to return to Lightwave and load the scene file you saved before entering Modeler. This causes the revised logo object to be loaded, putting everything back the way it was. Make sure the logo's surface is set to Smooth. Render the object and check out those smooth sides and sharp edges (Figure 3). You may still notice some slight irregularities due to uneven outlines in the original bitmap. The only solution is to edit the bitmaps by hand and/or use larger bitmaps.

Conclusion

You can use this technique with any object, not just 3D text. It might also be useful in modeling architectural objects, for example. In the next issue of Video Toaster User we'll introduce a variant of this technique that lets you create text with a raised shiny chrome outline. As mentioned, we'll also use Pixel 3D's Defined 2 extrusion method to create morphing landscape objects for some very interesting results.

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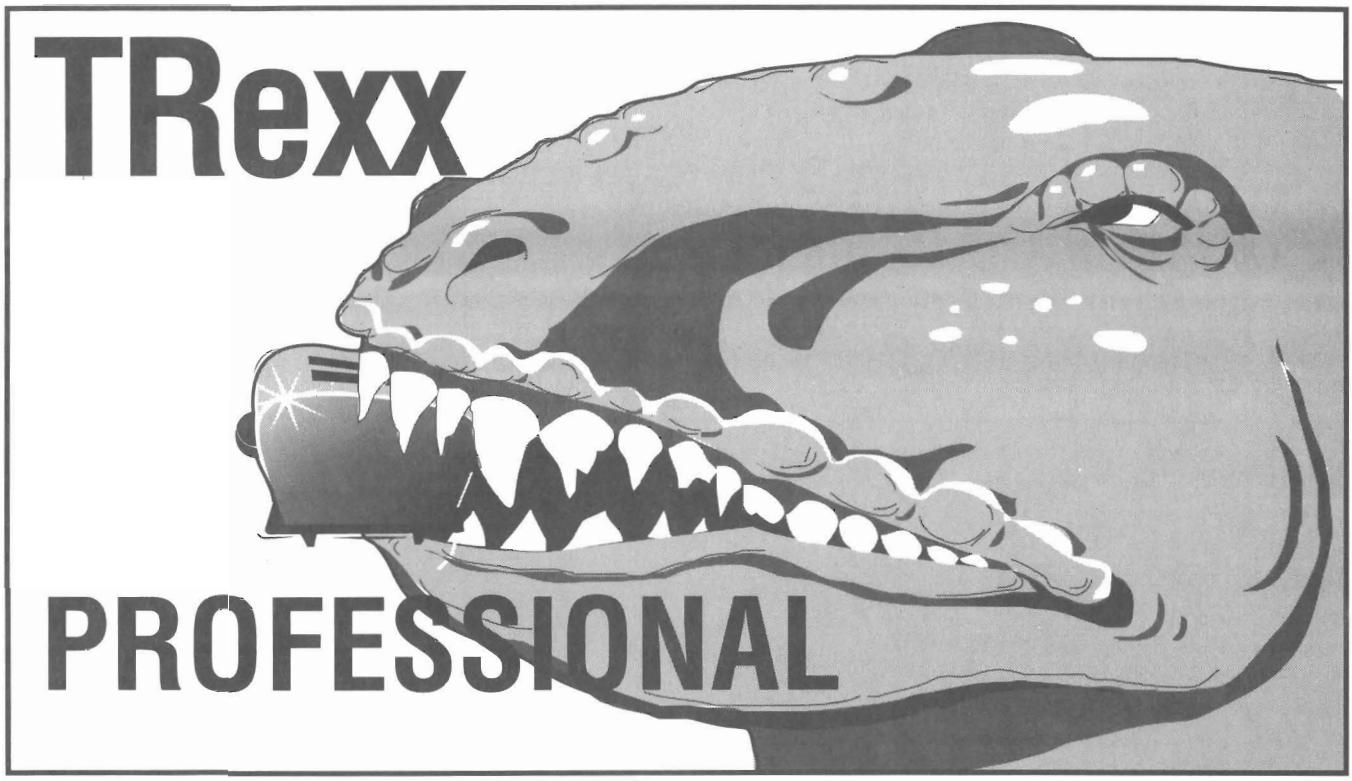

By David G. Powell

TRexx generates scripts for integrating and automating a Toaster-based video studio. TRexx combines an intuitive user interface with control for both the Toaster and the serial port(s) of the Amiga. With access and control of Toaster functions plus equipment connected through the serial port, TRexx introduces a new level of powerful yet simple functionality for integrating the Video Toaster desktop with the rest of the studio.

TRexx works by providing a graphical representation of any Switcher Project that you have in your Toaster directory. (see Figure 1). This includes Toaster 1.0 and 2.0, Positional effects and custom or user modified Projects. You simply select your Project, perhaps Toaster 2.0, and script the switcher by clicking on effects gadgets. A script is automatically generated, line by line as you click on gadgets. Then play back your script through the Toaster by clicking once more. It is simply amazing the first time you use it. TRexx is a multi-system glue that gives you fast and repeatable access to the benefits of a Toaster studio.

In addition to supporting Switcher functions, TRexx can control many video devices which are connected to the serial port(s) of the Amiga. TRexx serial port control provides access to external studio equipment such as laser disc players, single frame animation controllers, matrix switchers, TBC controllers, and videowall controllers. If there is a standard Amiga serial device that can be opened, then TRexx can send commands to the external equipment such as FIND, PAUSE or REWIND. These commands can be entered as needed or stored in a text file as a list to choose from by clicking to add them to the script.

This potential for leveraging the features of the Toaster as well as external studio equipment is all driven by the common language of ARexx, a standardized way for applications like the Toaster to receive and send commands. The beauty of TRexx is that you don't have to code one line of ARexx!

You simply click on the switcher gadget "Kicked Puppy" and the ARexx code is automatically generated by TRexx. Click on "Auto," or touch the space bar, and the ARexx "Auto" command is generated. Finally click on the "Test Script" gadget and watch your program monitor as the Toaster is driven by the ARexx script that you have just created. No programming in the traditional sense is required, just point and click.

There is a terrific List gadget to the left of the Switcher effect gadgets that displays all your script commands in English, not ARexx. So TRexx writes the scripts and then translates them back for you, so that you continue to focus on your video, and not be interrupted by the tool. Editing the script is easy. All of the standard editing commands that you find in any editor are located at the bottom of the List gadget. Editing features include insert, delete, clear,

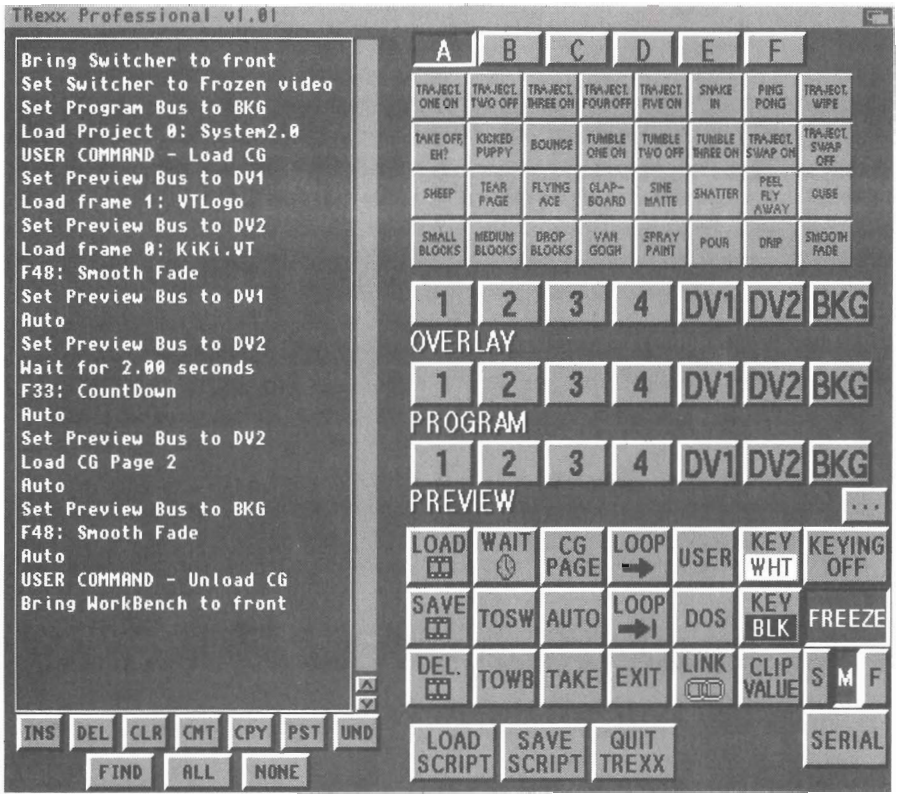

Figure 1

comment, find, copy & paste, and undo. The Link gadget (see below) is also supported as a meta-script creation tool. Scripts can be linked or inserted anywhere within an existing script. In fact the ease of editing scripts makes you think immediately about building blocks of common effect sequences. Then you could slam together a great series of routines with just cut, paste and the Link gadget.

Additional gadgets located in the right bottom corner provide many more Toaster commands such as Load/Save/Rename Framestore, Black and White Keys with a full range clip adjustment, Transition speed, Link tool for making meta-scripts, Script Looping, T-Bar control, Border color, Background color, Load/Save/Rename Project, and full control for the GPI trigger.

There is also a Wait gadget that is set using MM:SS for timing control within your script for your switcher effects and external serial gear. The Wait gadget is also a very useful tool, providing timed execution of a specific point in your script. This is not SMPTE time code, however, TRexx 1.0 does not have SMPTE time code support. *SMPTE support is* planned in a future release to benefit the many users of SMPTE time code reader/generators.

A really nifty feature of TRexx is that the Project in use can be changed at anytime during script creation. This capability, not readily available in the Toaster, would allow you to move from a Toaster 2.0 switcher Project to a Positional effects Project then to your own custom Project all within the same script.

Custom Projects, yes, TRexx gives you the capability of accessing a custom Project. Simply load your project by clicking on the Load Project gadget of TRexx.

If no Project is selected initially, TRexx will automatically read your CurrentProject file in the Toaster directory and use that Project as a default. TRexx uses the CurrentProject file to automatically detect the proper Toaster configuration for the initial TRexx startup screen. TRexx also kindly inserts the initial commands of setting up the Switcher at the top of your script automatically when starting a new file. This lets you focus on the effects sequence you are after instead of wasting your time programming with each new script.

User commands can be entered with the User gadget which currently supports

Turn to Page 56

20 plus canned commands such as Start LightWave or ToasterPaint. The list can be expanded by simply editing a text file and adding your own commands. When a command is selected, the commands are immediately added to the script.

Serial control is also provided through the use of a text file which lists a name and command. Serial control will require that you have at least the documentation for the commands of the serial device. The commands of search, pause, eject or whatever the device recognizes can then be added to the serial control file. The commands then appear as a list when the Serial gadget is depressed. Different command lists could be created for each serial device connected to the Amiga, then easily called up and placed in the script.

One type of serial application could be a connection to a professional matrix switcher. A matrix switcher allows you to switch any video input to any video output in the vertical interval. Although not inexpensive when equipped with a serial port ($2,000+ for 8 inputs x 8 outputs), matrix switchers solve the problem of cable swapping and TRexx can automate it on the fly if the matrix switcher has a serial port.

Several files are provided with TRexx Professional as both example and core TRexx scripts. Examples include Keying, CG, Script Linking, and a script that lets a joystick connected to the second mouse port be used as a "fire" button GPI to trigger the Switcher.

The core TRexx scripts will play back every effect of Toaster 2.0, CG, ChromaFX, backgrounds and positional effects.

Controlling the new Toaster 2.0 Genlock application is not possible in TRexx 1.0, as it has a different ARexx port name than the Switcher. Contact the company if you have ideas on how it would be helpful to you if genlock support was added in a future release of TRexx.

In summary, I believe that TRexx Professional is remarkably innovative both in functionality and ease of use. TRexx is an essential software application that you should purchase if you own a Toaster.

System Requirements: ARexx, (included with WorkBench 2.0), Toaster and compatible Amiga. Requires about 300K disk space. External Equipment must have RS232 serial interface.

Version Information: Current release is 1.01, upgrades to this version or later maintenance releases are $10 for registered users or free by calling the TRexx BBS as a registered user. The manual is 88 pages and quite informative. Suggested list price for TRexx is $129.95

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Publisher & Developer of TRexx Professional
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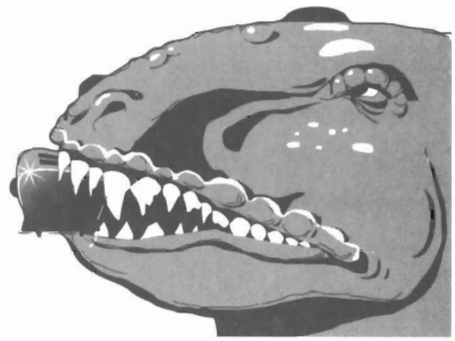
616/786-0740 - Voice



OOPS!

In the last issue we inadvertantly cut off a few words from the last sentence of the Kiki Stockhammer interview, leaving many of you literally hanging on Kiki's last words. The last sentence should read: "The two CAN go together." We apologize for taking words out of Kiki's mouth.

Toaster Talk
continued from page 4

mentioning this in Video Toaster User because there is some really awesome LightWave animations by Jim Flinn, John Gross, Leo Martin and others. The animation I am most excited about, however, wasn't even entered in the contest. I'm referring to the LightWave animation of the AVID logo, modeled, rendered and animated by Jim Flinn. This animation knocked my socks off. No, seriously, I cued up the tape and was just standing there watching the monitor, when the animation began, and suddenly there was this fierce rush of wind and when I looked down, I was standing there in just my bare feet. My toes were even smoking a little. To this day, I have not been able to find the shoes or socks I was wearing at the time. I think they were vaporized in the superheated brilliance of Flinn's animation. OK, I admit my obvious lack of objectivity, but this is some really nice stuff. I can't wait to see what Jim will do with the Video Toaster User logo.

The AVID animation and graphics tape is about an hour long and contains many outstanding examples of Video Toaster and Amiga produced videographics. We are going to make this tape available for duplication and shipping costs only (about $10). See the April issue of AVID, The Amiga-Video Journal or contact us at 408-252-0508 for more information.

In addition to creating great AVID animations, Jim Flinn also runs the ToasterNet BBS. He has created a special access account for Video Toaster User readers to get online and explore ToasterNet. Those of you with modems can call 414-789-8771. At the user ID prompt type: TN 46. Then, type VTU at the password prompt. Have fun!

Pure Speculation

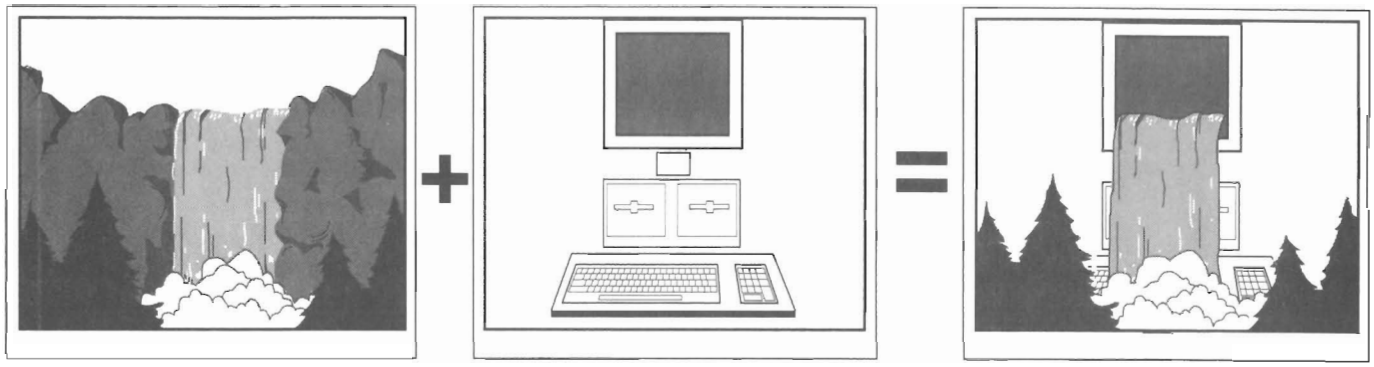
A few weeks ago I got the chance to do a "live" radio show called the Timeline Computer Hour with Paul Cayley. This show is uplinked to satellite and picked up by radio stations all around the country. In previous shows, Paul had discussed the Toaster briefly, but this show focused on the Toaster. It was a lot of fun. After the show, Paul and I and the producer were chatting about the show when the producer proposed a weekly Toaster Talk Show. Naturally, I thought it was a great idea and I promised to pass the proposal on to the right people at NewTek (which I did). I've been giving the idea quite a bit of thought over the past weeks, and I'm beginning to think that this is something I may want to pursue, if NewTek doesn't want to do it. What do you think? Would you tune in to a weekly radio show about the Video Toaster? I think it would be fun to have weekly guests like Allen Hastings, Joe Conti, Ron Thornton, Lee Stranahan, James Hebert, (maybe even Paul Montgomery and Tim Jenison) and other Toaster experts available for interviews and commentary about their specific area of Toaster expertise. If this sounds like the kind of show you'd be interested in listening to, drop us a card or give us a call and let your voice be heard. See the VTU masthead for our address and telephone number.

Another interesting proposal I've heard recently involves the formation of a "Toaster Camp". This would, ostensibly, be the gathering of a group of Toaster experts (probably some of the names mentioned above) for an intense 4 days (a long weekend, perhaps) of hardcore Video Toaster instruction. This would be a good way to gain a tremendous amount of knowledge in a very short time. An ideal situation for someone who has just acquired a Toaster and needs to get up to speed quickly, or even a long-time user who has "hit the wall" in his/her self-training efforts. "Toaster Camp" is still in the early planning stages, but stay tuned to VTU for for information as it becomes available.

Well, that's all for this issue. By the time you read this, we will be deep into the June/July issue. We've got some very interesting features planned, and I think you're going to like it a lot. But, hey, we're getting way of ourselves. You've still got a lot of reading to do in this issue, so get going!

Jim Plant
Editor/Publisher

Advertiser Index



Composites in ToasterPaint

By Tim Doherty

ToasterPaint often takes a backseat to LightWave, the Switcher, and the CG when it comes to recognizing the software components of the Video Toaster. As a full fledged paint package, its quarter screen HAM display and its unconventional icons may initially seem confusing to artists who have used other PC-based paint programs. However, as a tool for manipulating video images, it excels both in speed and functionality. Indeed, it is a powerful compliment to the Toaster's arsenal of innovative video software.

Image compositing is perhaps TPaint's greatest strength. This application can prove indispensable to the creative videographer, with purposes that are as varied as they are useful. I'll show some examples of how you can use compositing to enhance your videos. But first, a word is needed about memory.

Though ToasterPaint's RGB display is limited to 4096 colors (known as hold-and-modify, or HAM, mode), the images being manipulated in memory are full 24-bit files. This requires considerable RAM It also taxes the Amiga's Agnus chip, which handles the system's graphics operations. For users with 8 megs of RAM or less, there are some precautions you can take to ensure that you have the maximum amount of available memory. First, under the Switcher's preferences section, load the Get Small project. Get Small will remove all of your Switcher's effects except Dissolve, thereby liberating more memory. Since the Switcher remains operational, you can still freeze incoming video frames, which you can then manipulate in TPaint. Second, it is a good idea not to load any slices other than TPaint into memory.

I also advise Toaster users who make use of TPaint or LightWave to add DKB's MegAChip to your system as soon as your budget permits. The MegAChip replaces your 1 meg Agnus chip with the newer 2 meg version. The 2 meg Agnus is currently included in the Commodore 3000 series of computers, but not in the 2000 line. Not only will you double the capacity of your Amiga's graphics-handling chip, but you'll add an extra meg of RAM to your system. TPaint will breathe much easier. You'll experience far fewer difficulties in cutting out huge brushes, even with images loaded into the swap screen and swap brush buffers. In addition, TPaint and LightWave multitask much more nicely with programs outside the Toaster such as Deluxe Paint. I've used a MegAChip for a year and a half and like it so much that I think every 2000 should come equipped with one. For more information, contact DKB Software:

50240 W. Pontiac Trail
Wixom, MI 48393
phone (313) 960-8750
fax (313) 960-8752

Some sample images I created for industrial videos accompany this article. Figure 1 shows a relatively simple but effective composite for enhancing a still

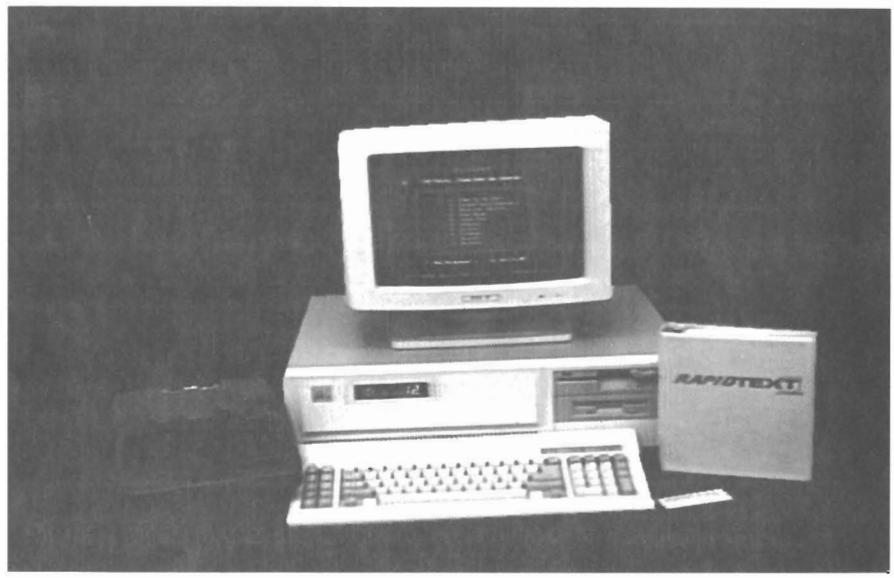


Figure 1

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shot of a product. In this case, components of a computer system were placed on a gradient background created in TPaint. The resulting image looks more professional than a standard video shot. Such a composite also permits items to be added to or removed from the picture. For example, in the original video shot, the piece of equipment on the far left was outdated. I found a current shot of this equipment in other stock footage, which I then inserted into the composite.

Creating a composite such as this is fairly effortless. First, grab the frame or frames from which you will be clipping video. Save these, then load ToasterPaint. Select a color range. This is done by activating one of the two Range Color Boxes, then clicking on a color from the palette. Changing either or both of the two color boxes will alter your gradient spread. If you are using a hot spot gradient, remember that the color on the left corresponds to the shade in the hot spot's center, while the color on the right corresponds to the edge. Hotspot, horizontal, or vertical gradients are selected via the appropriate icon in the Transparency menu. Access this menu by pressing F1, then click on one of the small squares above the large hotspot icon. The slider bar can be used to change the direction of the range for horizontal or vertical gradients. Press F1 again to return to the main menu, then press "shift-W" to turn on the flood fill tool. Make sure you are in Range Mode, either by activating one of the range color boxes or by pressing the "1" key. Click anywhere on your canvas, and the gradient will draw on the screen.

Jump to the swap screen ("j"), then load in the image you'd like to composite. If the frame is already centered and sized correctly, as mine was in Figure 1, an easy way to combine it with the background is by simply removing everything in the picture that you don't want. Turn on RubThru Mode ("5"), pick a single pixel brush ("."), then select the filled polygon tool (shift-V). Draw polygons between the edge of the screen and the parts of the picture you wish to keep. This will erase the unwanted material and replace it with the background you created. When you have finished, you might want to select a larger brush, activate Blur Mode ("6"), then use the unfilled freehand tool ("s") to trace an outline around the areas of the picture you kept. In so

doing, you'll blend harsh edges, eliminating jagged lines.

If pieces of the picture need to be resized, recentered, or rearranged, you'll have to clip them out using the Filled Polygon (shift-V) and scissors ("b") tools. Trace around them in your original framestore, then switch to your background screen ("j") and paste them down. Resizing and anti-aliasing can be achieved by selecting TextureMap Mode. After you've cut out your brush as described, go to the brush menu, highlight "Swap" and then "Copy this brush". Turn on TxMap Mode ("7"), then select the filled rectangle tool (Shift-R). Your brush will disappear from view, but will be redrawn in the rectangle you drag out on your screen. You can keep the image proportional by holding down the ALT key as you drag your mouse. It may take a few tries until you are able to place the brush properly. Press F10 to look at the image on the program bus, then undo it ("u") if it isn't correct and try again. When the placement is satisfactory, undo it again, turn on anti-aliasing ("?"), then press "a" to redo the last painting operation. It will then be redrawn and anti-aliased. This

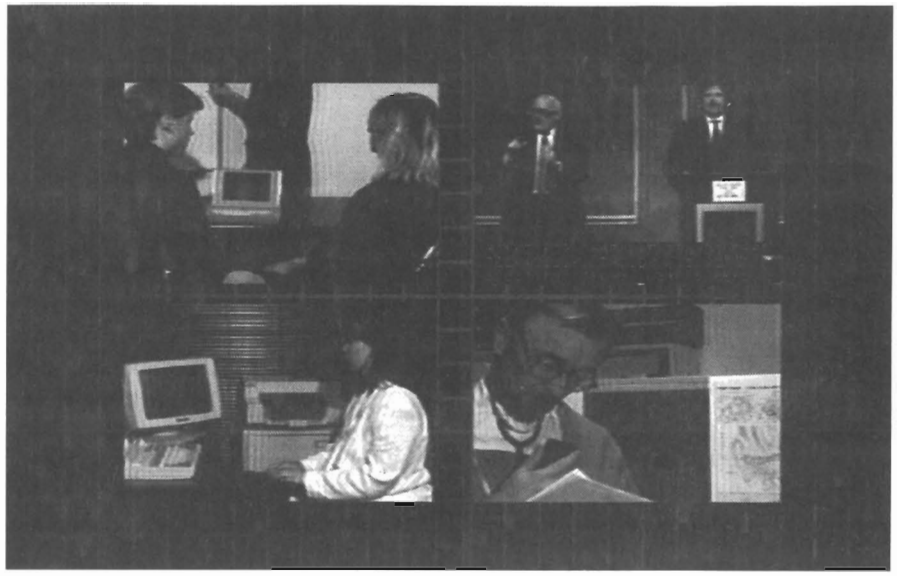


Figure 2

was the technique I used to remove and replace the outdated piece of equipment in the original framestore from which Figure 1 was created. RubThru was used to erase, and TxMap was used to add.

Figure 2 shows another composite used in the same video project. As a narrator recapped each of the four primary applications of the product being sold, a corresponding image faded on screen. In addition to providing a nice graphic which enhanced the appearance of the tape, this composite allowed previously shown video shots to be reused creatively without being repetitive.

Deluxe Paint was used to create a grey

grid against a black background. This was saved under the name Grid.pic. I then drew four rectangles atop the grid, aligning them where I wanted the composite shots to go. This was saved under the name Placement.pic.

After loading the Toaster, then grabbing and saving the necessary four frames, I entered TPaint. I created a gradient background, then switched to the spare screen and loaded Grid.pic. Selecting black as my current color, I chose "No Background" from the Brush menu. I activated the filled rectangle and brush tools, then picked up the entire screen as a brush. (Using "w" to pick up the screen won't work here, because "w" does not recognize the "No Background" option.) Jumping back to the gradient screen, I turned on the coordinates ("g") and pasted down the brush at 376x240. This image was saved as a framestore named Series0. Next, I returned to the spare screen, loaded Placement.pic, and picked it up as a no background brush. This was then pasted down atop Series0, with care being taken to keep the brush as close to 376x240 as possible while matching the grid already stamped down. This was saved as a framestore called Series4.

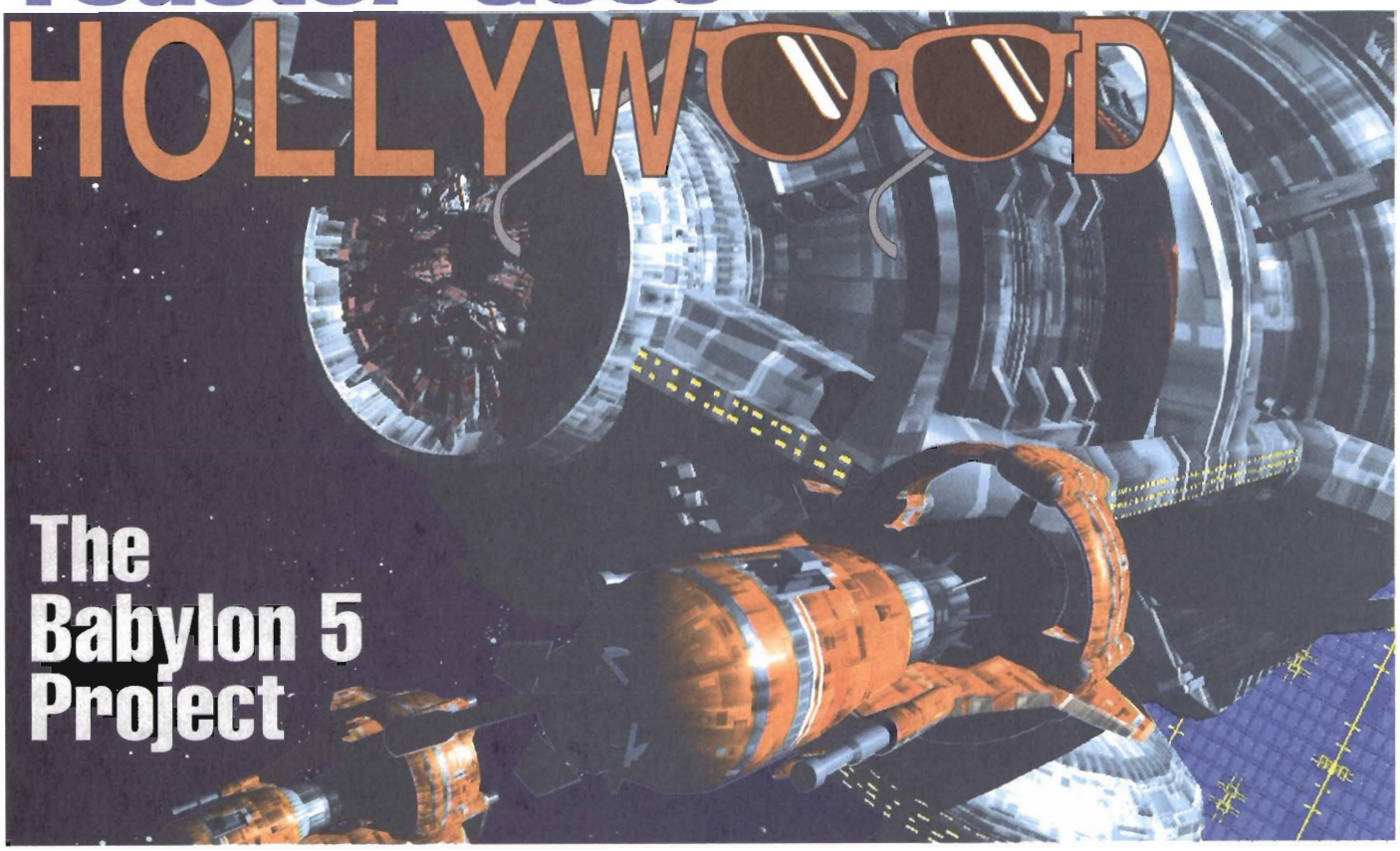
The first grabbed frame was loaded onto the spare page, from which I cut a rectangular brush containing the image I wanted to composite. I made sure to allow extra room so that I could crop it. This brush was copied to the swap buffer and TxMap mode was selected, with transparency set to 50%. Using the Alt key to keep the image proportional, I painted it down atop the first rectangle of Series4. The transparency setting allowed me to see how well the image was cropped inside the square. When I was satisfied with the results, I turned off transparency, turned on anti-aliasing, and then pressed "a" to redo the drawing. This process was repeated with framegrabs 2, 3, and 4, until all four rectangles of Series4 were overdrawn. The image was nearly complete, but the excess areas of the brush which overflowed the rectangles had to be trimmed. I therefore jumped to the spare screen again, loaded Series4, activated the Filled Rectangle tool and Rubthru mode, and traced over the rectangles. This copied only the cropped image area I desired from the other page. The resulting picture is shown in Figure 2.

There was one last step. After saving my finished Series4 framestore, I jumped back again to the spare screen, loaded Series0, then returned to Series4. Using RubThru, I drew a filled rectangle over the bottom right composite, leaving me with only 3 composited images. This was saved as Series3. I eliminated a second composite, saved this as Series2, and finally eliminated one more: Series1. These 4 images were then loaded and dissolved to in order. When edited onto tape, the results simulate the sizing and compositing capabilities found on more expensive systems.

While this technique may seem very long and involved, it actually is relatively easy to do. Using similar methods, I've prepared TV bumpers, added buildings to landscapes, and even combined shots of different people from separate videos in such a way that they appear to be interacting together. More applications abound. Like so many other uses of the Toaster, you can become as sophisticated as your imagination permits.

Tim Doherty is an Amiga animator whose work has appeared on NBC, PBS, and cable TV. Write him at TKD Animation, PO Box 242, La Mesa, CA, 91944, or call 619-589-6540.

Toaster Goes HOLLYWOOD



The Babylon 5 Project

By Mark Swain

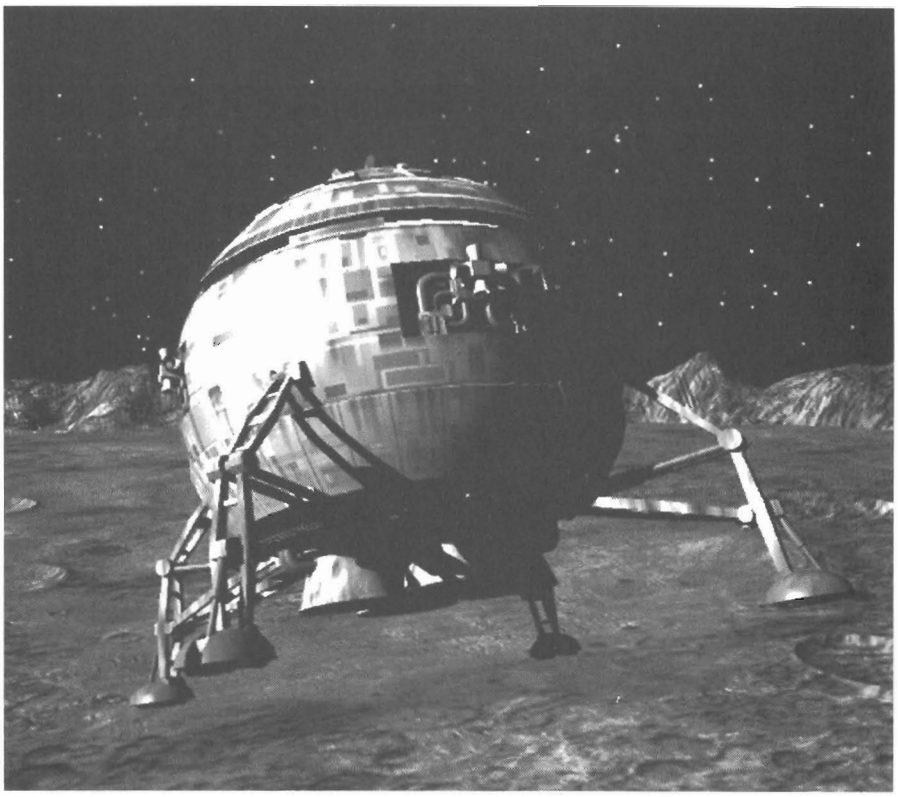
At the far reaches of space, a massive five-kilometer space station rests at the junction of five potentially hostile federations. Many attempts have been made to place a neutral port-of-call in this sector of space, but all have met with startling fates. The first, second, and third were sabotaged, and the fourth mysteriously vanished 24 hours before becoming operational. This leaves one last hope, Babylon 5.

The Earth Alliance constructed Babylon 5 as a last desperate attempt to gain peaceful relations between a hundred worlds. The station is a refuge to all who enter, but some are bent on personal rewards and power. This leads the Earth Alliance on an exotic, perilous adventure through Babylon 5 that promises to change television science fiction forever.

Babylon 5 (B5) is the brain child of writer/creator J. Michael Straczynski. The station and strange band of characters were created for all those who love science fiction. B5 will not only please diehard sci-fi fans, but will also feature the storytelling power found in a series like Hill Street Blues. When Straczynski was first developing B5, he attended many science fiction conventions and participated on panels with names like, "Why can't television get it right!" This, of course, was in reference to the many failed attempts at producing good science fiction programs for television. Shows like V (the series), The War of Worlds series, and the New Twilight Zone all met early television demises. The problems with producing science fiction for television are many, but include simplistic plots, over-budget episodes, and the mistaken notion that science fiction is nothing more that a few snazzy special effects.

Straczynski insists that B5 will be different; taking a much more realistic and traditional approach to science fiction. "No cute kids and no cute robots ever!", is the unofficial slogan that has been appearing on buttons at sci-fi conventions. Space shows in the past have had plot lines that feature the new planet of the week, the kid that saves the universe, or the adorable robot that becomes more than a star-born comic. Special effects have also been a substitute for good sci-fi: you know, fly a few spaceships, fire a few laser blasts, and zonkers you have science fiction concept that most television executives would jump at.

Babylon has a very different set of goals. The show will have a look that can be called a cross between Alien and 2001, and will not only contain the action of good science fiction, but plots that delve into the lives of all who enter her docking bay. "Everyone involved in the B5 project is a



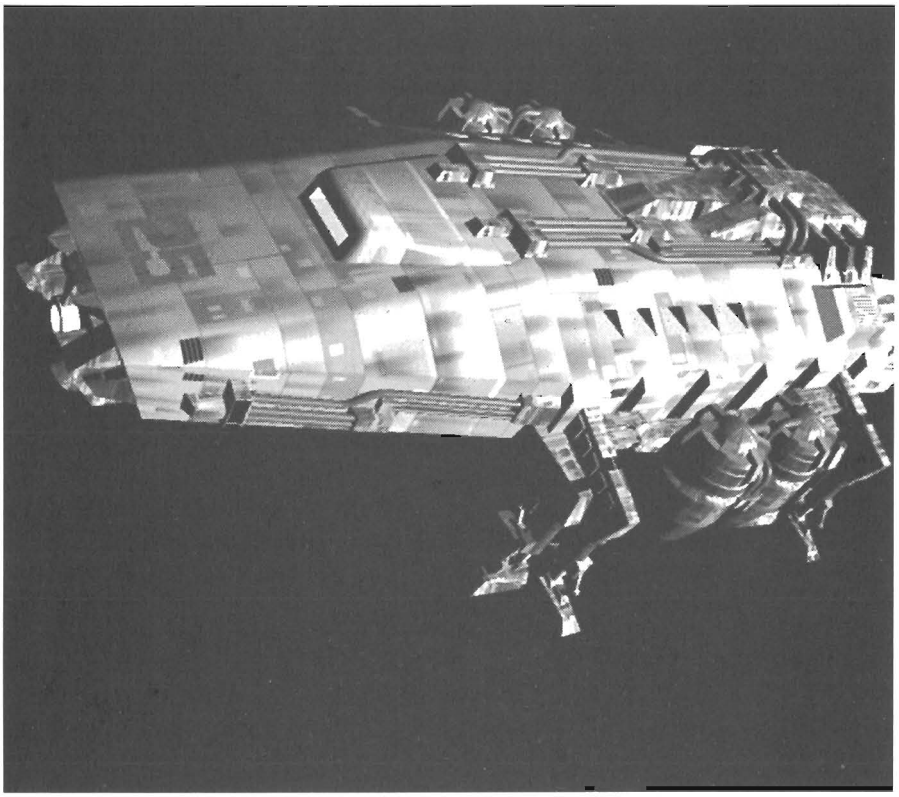
fan of the science fiction genre, and they all want to knock the viewers socks off," effects coordinator, Joe Conti, explains.

The general conception of sci-fi, thanks to many lofty-budgeted space movies, is that science fiction is primarily expensive special effects and, therefore, too costly for television. True to its genre, Babylon 5 is also filled with dozens of complicated, nearly impossible special effects and, initially, this caused considerable concern at Warner Brothers. When Babylon 5 was first proposed to Warner Brothers, the executives examined the script and quickly reached the conclusion that B5 could not be done. The show might be possible with an enormous feature film budget, they said, but for television? Never.

What the executives at Warner did not realize is that the world of television special effects is rapidly changing due to new cost-effective digital technologies, like the Video Toaster. These new technologies allow special effects to go beyond the impossible and create the building blocks for an entirely new universe without breaking the bank. Many Hollywood producers have not yet come to grips with the fact that models and motion control are fading into history, and digital imagery is the future. Computer graphics techniques have been around for years, but only recently has this power begun to make its mark from the desktop.

Just a few short years ago, Straczynski worked on another series that relied heavily on computer imagery. He remembers numerous problems dealing with computer generated special effects. One of the primary obstacles was creating a convincing animated character with computer technology. "Computer-animated characters are still on the edge of technology even today, and back three years ago, during the production of Captain Power, it was over the edge," he recalls. It was a struggle to produce just a few seconds of animation with the technology at that time." But times, and computers, have changed. The desktop systems of today are much less expensive, several times faster, and possess the kind of sophistication and raw power needed to satisfy the producers of Babylon 5.

While it was generally acknowledged that sophisticated computer graphics were essential for Babylon 5, the problem was convincing Warner Brothers execs that they could be achieved cost-effectively. At this point Straczysnki realized that the



expertise of a computer-oriented special effect artist was needed. He called upon Ron Thornton to produce a sample scene that would demonstrate the creative possibilities inherent in the B5 project. "Ron produced a brilliant animation that simply knocked everyone on the floor." The scene was a test version of the Babylon Five space station in orbit around a planet. The computer camera in the scene traveled 15 kilometers to almost inside the docking bay of the station in a single shot.

The pivotal scene was completed in about a week by Thornton working on a single Video Toaster system in a spare room in his apartment. A shorter version of the actual scene that helped sell Babylon 5 was included on the Video Toaster 2.0 reel. Straczysnki was very excited that such a scene could be completely finished by *one guy*. He remembers thinking to himself, "just think what we can do when the show goes into full production with a staff of effects artists, it's almost mind boggling."

Once the digital effects had proved themselves in the various pitch sessions, Straczynski and producers Doug Netter and John Copeland, of Rattle Snake Productions, were given the green light to produce a two hour Babylon 5 movie pilot for syndication. "The movie pilot is to prove that Babylon 5 can be done on time and in budget for television," explains Straczynski. With the new technologies like the Toaster backing B5, he has total confidence that a syndicated series will soon follow the movie premiere.

Many of these new technologies are being explored in the heart of Burbank. Near Warner Brothers Studio you will find the home and effects studio of noted LightWave 3D artist, Ron Thornton. Thornton has been involved in special effects for years, but strangely enough started out as a flight officer in an airport near London. While dispatching flights, he daydreamed of creating the kind of models and effects built by special effects artists like Bill Pearson and Martin Bower who were both model builders for Alien and Outland. Before long, he gave up his airlines job to pursue work at the BBC on such shows as Doctor Who and Blakes 7. In 1984 he made the big move to Hollywood and began working and building models for feature films such as Real Genius, and more recently Addams Family and Terminator 2. He continued to build movie models using traditional methods for years, and his work seemed to gravitate toward science fiction.

Thornton's life changed dramatically in October of 1990 when he bought a Video Toaster for his Amiga 2000 computer system. He wanted to find out if it was possible to produce a space ship that would look as good as one that he might build from bits and pieces of plastic. "It was no sweat," he recalls. "At first it took me a few weeks to figure out LightWave and Modeler, but after that it was a snap to produce truly realistic images." With these very successful tests behind him, Thornton immediately sold his motion control, and optical film printing equipment to pursue what he is convinced is the future for television and movie effects: computer-generated graphics.

Soon Thornton was asked to produce a test animation of the B5 station, and explain to a room full of "suits" how computer animation would revolutionize a show such as Babylon 5. "We can do the impossible on a television budget," he told them. Digital effects opens the door for new effects that are not possible using any other method. Take for example the Babylon 5 space station, this thing is five kilometers or three miles long. It would take a couple of sound stages to build a real model at the same detailed level that the computer can achieve." One example of an effects shot that Ron is creating for B5 starts out several hundred miles from Babylon and zooms all the way into a close-up of the station. It then zooms into a window that actors are looking out of, picking up the conversation of the characters inside the station, before flying out another window.. "Try doing all of that in single smooth shot with a physical model," he laughs.

The digital effects are so vital to B5 that some of the scenes were rewritten to accommodate the technology. The normal method of producing shows that have complicated effects is to consult with the effects team to make sure that what is in the script can be done. When Straczynski finished the first draft of the script he ran it by Thornton and the other effects people, and they told him that the effects in the script were modest and could be scaled up. The producers found this astonishing. Usually the effects in a script are far more ambitious than what can realistically be done within the budget, but this time the effects were actually enhanced. "The

general intent and story will not be affected by new effects such as impossible camera movements, tracking shots at warp speed, and many others that merely furnish the audience with a more visually stimulating show to watch," says Straczynski.

Up to this point, all of Thornton's creative efforts have been used in in the pre-production stage of the process. When Babylon 5 goes into full production in a few weeks, he will be joined by effects coordinator Joe Conti and technical supervisor Paul Beigle-Bryant. The three have tentative plans to use eight Video Toasters networked to a 486 PC clone as a server. Their plan is to have the Toasters render around the clock, storing all of the images to two massive hard drives. The rendered images will then be transmitted in RGB format to a Digital Disk Recorder (A-64). This method provides for the highest image quality and no generational loss. This method also allows for easy and clean post-production onto D1 digital video. The system will need to be well-tuned for the production to finish on time, as there is a maximum of only 20,000 hours of rendering time available during the production. This sounds like a lot of time, but with over 15,000 frames at an average of one hour and fifteen minutes per frame it leaves little room for mistakes. Thornton and his team feel confident that the digital effects will not only be finished on time, but will be spectacular, as well.

Thornton says, "This is only the beginning. It has only been recently that the power to generate high-quality special effects has been in the hands of so many, and with the ever-evolving technology it is sure to become a dominant force in the effects industry." With new and exotic hardware and software products coming out of NewTek in the next few years, there's no reason why the Video Toaster shouldn't be riding the crest of this wave of effects technology.

The story is science fiction, the plot massive, the effects extraordinary, and all of this will be premiering November 17 on a syndicated station in your area. Babylon 5, a two hour science fiction event now exists through the graphic magic of the Video Toaster.

Mark Swain is a California-based freelance writer who does video post-production and computer animation.

Ron Thornton: LightWave Master

Ron Thornton has been continuously producing some of the finest images ever created with the Video Toaster. His images have ranged from space battle cruisers, moon landers, and recently a steel mill filled with smoke, molten metal, and showers of sparks. The question on most people minds is how does he consistently produce such stunning imagery? The answer is simple: lots of experience. Ron says, "There are lots of computer graphics effects people today, but most of them do not have the years of traditional special effects experience that I have developed over the years." Working on numerous feature films, Ron has stored up a vast arsenal of techniques that he can transfer into his digital special effects work.

The way Ron starts most projects is by designing the "look" or the style of the image that he wants produced with a quick sketch. Once the basic look is designed, such as the space station in Babylon 5, he breaks the models needed down into sections and begins sculpting the objects in the LightWave 3D Modeler. One thing that is very apparent in Ron's models is that there is no skimping on the number of points and polygons. There are literally thousands of surfaces needed to produce the fine details that exists in his models. Once all of the sections of the model have been created and surfaces named, they are assembled into the finished object.

Ron's models are very complicated, but his texturing methods are even more intricate. The texture maps are all painted in either Deluxe Paint and then taken into ToasterPaint for 24-bit modification, or started from scratch in ToasterPaint. The patch work of metal panels that are used on Ron's space ships are created using various levels of transparency in Toaster Paint. Once the basic patch work is created, he then will blur and smear the image to obtain a weathered or battle-scarred look. One other trick that he often uses is texture mapping using diffuse, specular, and transparency. These attributes allow surfaces to react differently to light in a given scene. For example, if a specular map was used, then some areas of a surface would appear glossier than others, much like real world objects. *[Editor's Note: Thornton has plans to package his unique models and textures to be released when Babylon 5 premieres.]*

The motion paths or keyframing is the next step. For this process the actual, fully detailed models are not used. The reason for this is that they have far to many points and polygons to be easily moved and keyframed. A simplified model is made from basic geometry, the exact size and scale of the detailed model. With a few key features on the simplified object for correct orientation, the model can be easily keyframed and lightning quick wire frame motion tests can be generated. An object's motion and camera angles are the single most important part of this entire process. After all, what will the audience see once you have completed the final animation, it most likely will not be a CAD accurate model. "You have to be as much a film maker, as an effects artist with computer animation. After all the final shot is the only thing that matters once it has been edited into a given project", Ron explains.

These are only a few of the methods that Ron uses to create such splendid LightWave images. It is true that Ron has had years of special effects experience, but he is using the same tools that are available to any Video Toaster user. LightWave programmer Allen Hastings puts Thornton's creativity into perspective, "Ron Thorton is an amazing talent that programmers like myself need in order to push our software to the edge of its possibilities."

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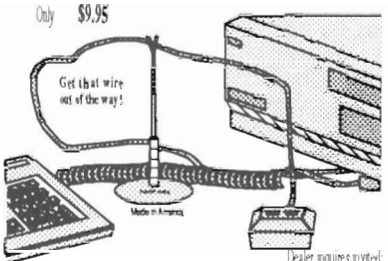

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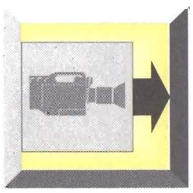

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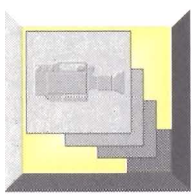

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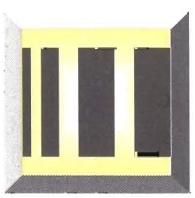

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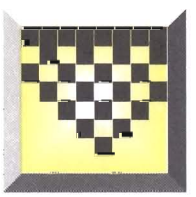

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- Introduction to Desktop Video
- Introduction to Computer Graphics
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- Desktop Animation - Two Dimensional
- Introduction to Video Toaster
- Starting Your Video Business

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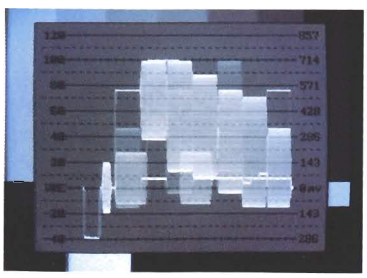

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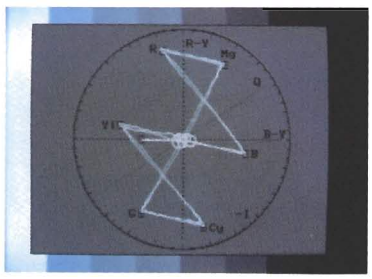

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