Avid

The AMIGA® VIDEO Journal

Vol.#3 - Issue #8
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Exclusive: Adspec's NEW Aladdin 4D

Pro Lighting with Imagine!

Broadcast Titler Hi-Res Reviewed

Regular Features:

LightWave 3D • Toaster Tricks • Doug's DPaint Tips

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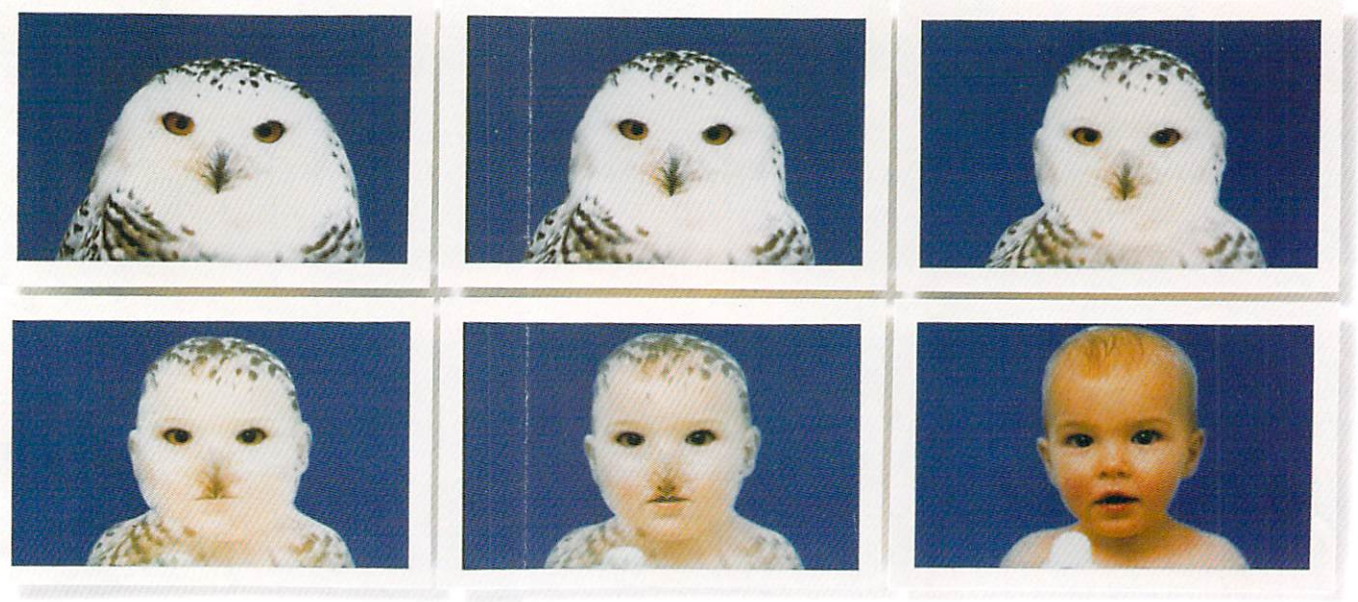

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INSIDE THIS ISSUE:

September 1992
Volume 3, Issue 9

About the Cover

This month's cover is a cooperative venture composed by Art Director Tom Twohy. The inset image's foreground is a Battle-Mech robot named Gamma-Tron, created by San Diego artist David Simon for an in-progress one-hour animated feature named "Have Disintegrator, Will Travel" and rendered in Imagine. The inset background was generated with Aladdin 4D by its creator, Greg Gorby. See this issue's interview with Greg for lots more information on this hot new 3D program. Finally the cover background is one of Texture City's metal textures from their Pro-60 #1 collection.

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Bars 'N' Tone

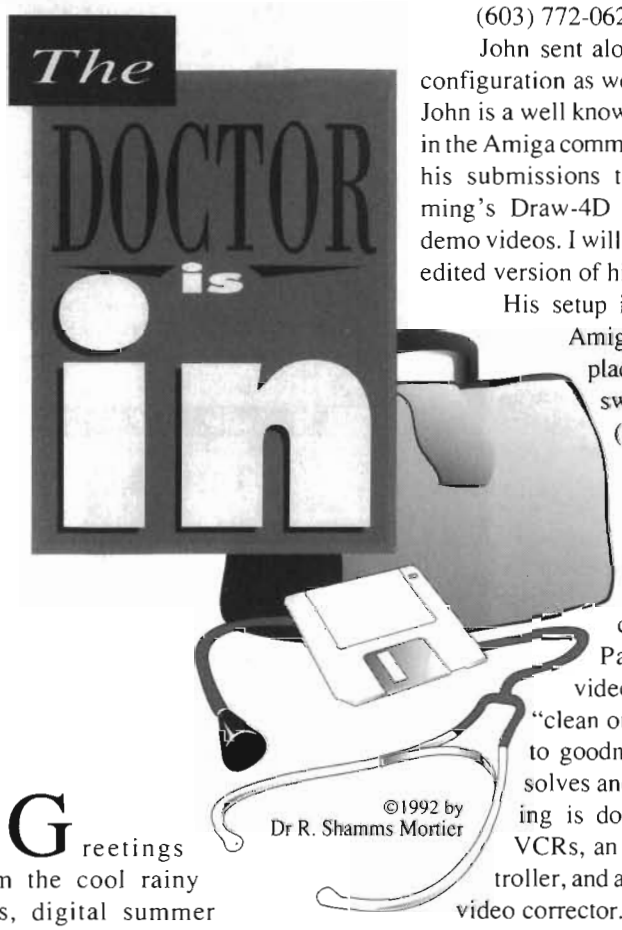
Last month I had the privilege of attending my first SIGGRAPH convention in Chicago. SIGGRAPH is a computer trade show which concentrates on graphics hardware and software. The show was great—one dazzling graphics display after another. One of the neatest things I saw, though, was a bunch of kids breaking a light bulb—more on that in a moment. Of course, most of what I saw runs only on high-end platforms that require several arms and legs to purchase. There were lots of super high-tech experimental goodies, with virtual reality practically everywhere you looked, and a constantly changing art piece being worked on simultaneously by many artists at workstations in different locations was the centerpiece of the SIGGRAPH art gallery.

The only Amigas to be found at the show, other than the Programs Plus and Video booth showing an impressive new version of Real 3D, were tucked away in a corner of a secondary exhibit hall. While wandering through what appeared to be a show of children's artwork called SIGKids, I stumbled on a roomful of kids and a few adults busily toiling away on an actual video project. Their mission, under the aegis of New York City's Lucky Duck Productions, was to produce a humorous short video for broadcast on cable's Nickelodeon. The theme was to be "What's Wrong With America", and the video was to illustrate the who, what, when, where, and why of it. The kids were mostly from various Chicago-area schools, plus one from California and one from France. During the six-day project the SIGKids used about 15 Amiga workstations from 500s to Toaster- equipped 2000s and even a 3000 Tower. Other equipment and software was loaned or donated by GVP, Electronic Arts, Sunrize Technologies, and others. Steve Johnson from Commodore was very helpful throughout, but the obvious guru of the entire high-energy project was computer graphics expert and educator Curt Kass, who normally consults with schools around the country on video installations. Of course, he usually recommends Amiga-based systems because of their extreme cost-effectiveness in these days of ever-shrinking educational budgets.

In talking with Steve and Curt, I learned a lot about the current state of education, and it isn't good. Today's world is more visually oriented than ever before, and the educational bureaucracy is too sluggish to keep pace. Schools are still text-oriented, while kids live in a video reality that bears no relation whatever to traditional education. According to Curt, computer manufacturers such as Apple, IBM, and Commodore need to take some of the responsibility for assisting the educational community to integrate new technology into schools in a smooth and efficient way.

Back to the project—this was an actual video editing suite, centered on a Panasonic 7750 S-VHS editing deck and a Toaster, but using every trick in the book, including ten-hand synchronization. While I was there I witnessed a group of five kids with Curt at the helm laying down a particularly tricky section of the video. It involved playing of a DPaint animation, with a sound effect and Toaster transition just at the right point. The procedure was carefully orchestrated, then rehearsed repeatedly with lots of hand signals and calling back and forth, and finally was recorded onto tape with hardly any glitches. When it was decided a better sample was needed for a breaking-glass sound effect, a light bulb was procured and smashed in a garbage can (for safety) with a microphone connected to a sampler. That didn't work out too well, so Curt sent one of the boys out to buy more light bulbs. They kept working until eleven that night, and no doubt had lots of fun. The next day when I had to leave they were still hard at it, so I didn't get a chance to see the final product, but if you watch Nickelodeon this fall you might get a chance to view it.

So the moral is that you don't always have to put your Amiga video-related knowledge to work for pay; use it to invest in the future. Work with schools in your area—volunteer to help train teachers with video equipment, for example. And while you're at it you can put in a good word for the Amiga and all the great things it can do with video for comparatively little money to whomever makes the equipment-buying decisions. Get involved—you'll be glad you did!



Greetings from the cool rainy hills, digital summer wanderers. To begin, thanks to those folks who sent in details of their Amiga videographic configurations. Two are mentioned here, just so you can see what level of equipment Amiga pros are using in their video work:

1. Bob Thompson / GrafxQuest
Leanordtown, Maryland
(301) 475-5640

Amiga 2000 w/33 Mhz 030 and 8 megs of RAM, GVP controller and 100 Meg Hard drive, Syquest 44meg removable, one floppy, Toaster 2.0, Kitchen Sync, WIZ tablet, 2 Sony Monitors and 1084S monitor, Sony EVO-9700 dual Hi-8 editing deck, Videonics video equalizer, 350 Watt UPS, 2400 baud modem, Pansonic KX-P1124 printer, JVC TK-870U copy stand camera, Canon A-1 Hi-8 Camcorder, Sony GV-8 ensemble, Amiga software (including ADPro, Imagine 2.0, DPaint IV, Vista Pro 2.0, Broadcast Fonts 3D, and Scala).

2. John Spofford
Spofford Multimedia
Exeter, New Hampshire
(603) 772-0624

John sent along a printout of this configuration as well as the description. John is a well known artist and animator in the Amiga community, especially with his submissions to Adspec Programming's Draw-4D Pro newsletters and demo videos. I will give you a somewhat edited version of his setup description:

His setup is based around two Amigas: One (a 2000) is placed upstream of the switcher and the other (a 500 with 5 megs) is a dedicated character generator genlocked downstream. The A2000 generates DCTV video to channel 2 of a Pansonic WJAVE5 video mixer (this has a "clean output and two honest to goodness TBCs", and dissolves and wipes). Video editing is done on two AG1960 VCRs, an AG950 editing controller, and a "fairly ancient" JVC video corrector.

John is also involved in audio with a Roland SC-55 Sound Canvas module, a Roland EQ-5 digital piano, and (sometimes) audio from the Amiga as well. Also included is an MXR graphic equalizer, a six channel audio mixer, and other MIDI gear.

In addition to having a philosophy that allows him to build his videos around Digital Creations' DCTV, he uses other software including Draw-4D Pro, ADPro, DPaint IV, Pro-Draw 2.0, SuperJam, and Pixound. He says that he is able to do high quality work with DCTV by using the TBCs to boost the signal, and sometimes to superimpose higher resolution graphics from the A500 over a DCTV background.

A July Journey

I placed myself in the hands of the airlines in July for a ride to Salem, Ohio to see firsthand what was going on at Adspec Programming. Greg Gorby, the captain of Adspec and the creator of Draw-4D, was on hand to greet me and give me a tour. What resulted was a look at and the ability to use (in fact to use professionally in my own work) the new Aladdin 4D software. In my estimation, this software is an evolutionary step in computer graphics in general, especially on the Amiga. I am so blown away by its options, ease of use, and array of new and exciting tools that I can already state that it is certain to be one of the major Amiga software releases of 1992. I'll be writing about it more as time passes, but let me run down just a few of its features for you now: animated "gas" structures (!), wave generation as you've never seen it before, bump maps better then any I've seen, camera/target pans in animations, Postscript figure importing, multiple texture mapping, background animating, DCTV read/write support, the most amazing procedural texturing around—the list is endless. The package will sell for $460.00 to new users and about $100.00 for upgrades to D4DP 1.3 registered owners. This is one of the(if not the) hottest new products since the introduction of the Amiga as a videographic platform. Stay tuned.

Adspec Programming
(216) 337-1329

Essence

Steven Worley, known for his work and writing for Impulse's Imagine software, has just released a utility for Imagine called Essence. It generates algorithmic (procedural) textures that can be mapped in animated splendor on Imagine objects. All can be customized with many user parameters. The list includes altitude textures, fractal noise, bricks and checks, transitions, tilings, and color rotations. Check it out at Apex Software Publishing / 405 El Camino Real, Suite 121 / Menlo Park, CA 94025 / (415) 322-7532.

A Complaint

Without mentioning any names right now, I want to register a general complaint concerning the haughty attitudes of developers of Amiga products that use the telephone "support" system to our disadvantage. Folks, please don't give us some long diatribe of recorded hype (at

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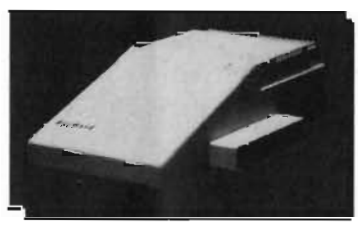

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our long distance expense), only to allow our call to go unanswered in some "can you hold?" limbo. If you want us to the support your products, support and deliver the service that is expected to go with it(!).

Super Hi-Res

If you use Broadcast Titler to generate your titles and title effects, don't miss the new BT2 Super-HiRes module. Toaster 2.0 is compatible with BT2 playback, getting past an initial sync playback glitch. The Super package supports the new Super-Denise (ECS) chip directly (on all A3000's and new A2000's), giving you a 1472 x 480 resolution. Contact Innovision at Suite 238, 1933 Davis Street, San Leandro, CA 94577. The price is $439.00, and $139.00 if you're upgrading from the standard BT2.

Out of the Ashes

Phoenix Microtechnologies, Ltd. (18 Hampton Road Keswick, S.A. 5035, South Australia) has a long list of Amiga items worth investigating. Newest is their "Blizzard Board", a 14MHz unit that will add 8 megs of RAM to your Phoenix Board, your A500, or the A2000. Also available is a SCSI external case with or without a drive (with a Quantum 105meg drive it's $849.00) and Ethernet accessories.

Lissa, My Love

Lissa 1.2, a Lissajous Path Generator, is the upgrade from 1.0. It now has new WB 2.0-like graphic gadgets, and new load/save options. For instance, you can now save out non-polygon structures as "paths" for Draw-4D Pro. The new look makes it more intuitive to operate.

Rumors

There are lots of rumors in the air about some awesome price reductions coming in the Fall on Amiga systems. Stay tuned...

Workshops

Contact the International Film & Television Workshops of Rockport Maine 04856 for their Fall listing of seminars and workshops. A sample listing includes: Video Production, Multi-Media, Video Directing, Script Writing, Production Design and Art,...I personally know someone who took advantage of this place and found it most rewarding.

ProDraw 3.0

Yep! It's finally here. Those of you wanting a more full featured structured drawing program have been rewarded by Gold Disk's new ProDraw 3.0 release. There's even an Undo and a Redo function on board. Special Effects Genies include Flower and Mandela (Mandala) construction. Special Tool Genies allow construction of numerically correct Ellipses and Rectangular objects. You can turn these into 3D objects by outputting them in PostScript format from ProDraw, then importing them into Adspec's Aladdin. There's much more. Contact Gold Disk for upgrade costs, or for the price of the entire package.

Motion Man

If you haven't yet seen Anti-Gravity Products' Motion Man Object for LightWave, then you are missing a lot of fun and learning. Motion Man is a fully structured and movable anatomical figure that can be wrapped with your favorite texture(s) and set moving for video work. The small manual comes with a 3D photo on the front, and a long list of instructions inside. The current version is 1.01 as 1.0 had some problems. By the way, this object loads easilly into Pixel-3D for export to other graphics Amiga 3D/4D packages. It's about $30.00 from Anti-Gravity Products, 456 Lincoln Blvd., Santa Monica, CA 90402 (310-393-6650). Watch Anti-Gravity for more quality products in the future.

An Auspicious Journey

If you are thinking of calling me in late August, you should save your dimes and wait until September. I'll be out on the musical road with my jazz ensemble "Science Fixion" (album available on either CD or cassette...$15.00 and $10.00 plus s&h). We'll be in New York City, Nashville, Tuscaloosa Alabama, Columbus and Cincinnati Ohio, State College Pennsylvania, and down on the Gulf in Moss Point, Mississippi. By the way, while in Mississippi, I'll be doing an Amiga tutoring session with a local video producer who's interested in learning how to master some specific animation techniques. If you see a show,..say hello. Meanwhile, see you in ROMulan space. ENJOY!

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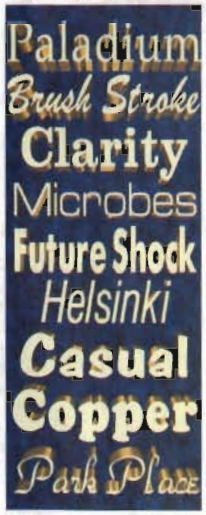

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Lighten Up

Techniques for LightWave 3D Users

Lots of interesting stuff this time out of the stable, so let's hop right in, shall we? Good...

First off, let me tell you about one of the best deals I've seen in quite a while. I'm referring to ProFills Volume 2, the newest release from JEK Graphics. If you're familiar with Volume I, you know what this stuff is, but for the uninitiated I'll explain. ProFills are collections of brushes that are created in DeluxePaint which, when repeated, form attractive patterns for backgrounds or texturing in the video world. While they're designed in only 32 colors, ProFills are of such high quality that they can be used convincingly for any number of purposes.

With ProFills Volume 2, JEK has released some of the nicest work so far. You'll find your usual collection of bricks, weaves, and so on, but there is also a whole slew of new brushes that make great texture maps that you may not have thought of. The image that accompanies this column shows a few of them in action. The fence surrounding the building is only two polygons. That's right, a brush called Cyclone used as a transparency map provides the wires. The stop sign post and wood of the building are covered with a Bark brush. The walls of the building are Speckled Brick. The walkway is Concrete. These are all just tiny brushes tiled to give a complete surface. And the best part yet...each brush takes up only 4K of memory!

Of course, there's more to ProFills then just the brushes themselves, of which there are many. How about 60 different color palettes for the brushes? How about two different types of palettes, one for RGB displays and one for Composite displays? How about a slick little Screen Generator that instantly builds a screen of any resolution out of these brushes and patterns? ProFills Volume 2 sells for $49.95, and I'd probably pay that much just for the brushes I've mentioned. Maybe you want Tire Tread? Got it. Maybe Vinyl? Got it. Stucco? Paper? Got it! And they're all so tiny, you'll hardly notice they're in memory! This package is an excellent value!

Here's a tip that I passed along in my latest column in Video Toaster User magazine which is pretty important so I'll tell it here, too. If you use your Toaster exclusively for LightWave, you can save a lot of hard drive space. If you don't use the CG, make sure to get rid of all those ToasterFonts. They take up lots of room. If you don't use the Switcher, get rid of all the Effects. Of course, you have to make sure that your default project is Get Small before you go and delete all of those or you'll spend 45 minutes or so acknowledging the Toaster's "Can't find..." messages next time you load it. If you delete both of these directories you'll find your hard drive about 23 megs lighter.

I've been asked by the folks at Anti Gravity Products to let those of you who have purchased the Motion Man object for LightWave know that there is an update. It seems that somehow a non-final version of the guy ended up on their master, and he has duplicate polygons everywhere. This means your rendering times are doubled and he eats up twice the amount of memory that he should. Anyway, the new version is known as 1.01, and is available free to registered owners. Contact Anti Gravity at the number mentioned at the end of this column for more information.

A couple of months ago I described in my column a technique for creating rain and storm clouds. The only part I left out was the storm clouds...I hate when that happens. A couple of folks have

contacted me and thought it was a fault of this fine magazine but, alas, it was my own durn fault! To refresh your memory, we had a giant half sphere which sits atop the "Ground" object supplied with LightWave, its polygons facing in. The formula that got left out was this:

Surface Color: 200 200 200
Luminous: On
Diffuse: 100%
Specular: 0%

The secret is in the Transparency. Use a Fractal Noise Texture there, with a size of 100, 100, 100. Set Texture Value to 80%, Frequencies to 3, and Contrast to 0.5. I set the Velocity to X=5, Y=0, Z=5, which causes the clouds to move at a pretty good clip, but you may want to fiddle with that. This exact formula set against the default backdrop gradient colors results in very nice white clouds, but you can darken the Surface Color, turn off the luminosity, and/or darken the backdrop to make them more menacing. Sorry about the earlier confusion.

If you do a lot of work with your Amiga, you're probably familiar with a product called Quarterback from New Horizons Software. If you aren't, you should be. Quarterback allows you not only to back up the stuff that gathers in the far reaches of your hard drive for no real good purpose, it can also compress it so that it doesn't eat up a lot of disks. Quarterback can write to floppies, another hard disk, a streaming tape drive—just about anything. It's simple to use, very fast, and very effective. In my studio I have more than 2,200 disks with Quarterbacked work I've done over the last 6 or 7 years. If I find I need something off of one of them, I simply locate it in one of my Archive Reports that QB can generate, find the right set, put the first disk in and click the stuff I want. A few disk swaps later I've got it back on my hard drive ready for use. Quarterback is an invaluable tool in my machine, and I highly suggest it for yours.

Also on the compression front, check into a public domain program called LHarc. There are actually a great number of different versions of this file, and I'm not sure which is the "latest and greatest", so check with your local users group or online service. It'll whip tremendous amounts of data into files that are frequently half their original size. I've got a drawer on my harddrive where I'm storing animations that are rendered but not yet recorded to tape. I've taken 120 frames of animation (which together totalled around 90 megs or so) and compressed them into one file around 10 megs in size. When the file is decompressed, all the images retain their original names and are exactly the way they appeared before compression.

Compressing things like this doesn't override the need for a package like Quarterback, however. I use LHarc to make things manageable on my hard drive, then back up the compressed files using Quarterback. Between these two, you'll find your life is a lot easier when it comes to keeping track of your files.

We all know that you don't have to save each motion in a scene as a named file, right? Simply saving the scene will include the motion information whether you have named and saved them or not. I mention this because I've heard quite a few people telling others that you need to save a motion file separately, when in fact this is not true. Just straightening it out for the record.

At a recent meeting of the Amiga Friends Graphics SIG here in Southern California, I was asked a question that surprised me: Why would you want to use the Antialiasing and Pixel Blending features in the Texture areas of LightWave? According to the inquiring party, he clicked them both on and all it seemed to do was make the image fuzzy. Well, I said, there's the problem. I explained the Antialiasing is the one that he should be using to clean up the image when it is mapped on a surface, but leave Pixel Blending alone. You see, Pixel Blending's job is just that...blending pixels. Think of it as the rough equivelent of loading the image into DeluxePaint and running a giant Smooth mode brush all over it. Antialiasing, on the other hand, makes LightWave sharpen up the image. Pixel Blending is best when you're going to get closer to the surface that is image mapped then you really should be, while Antialiasing tends to stop nasty flicker and moire patterns in fine maps or those that move a good distance away from the camera. This is what manuals are for, folks!

Have you tried using Polygon Size to create an explosion? In my opinion, it doesn't do a very good job. Of course, if the object had about 18 million little polygons, it might work, but there is a better way. It involves that old EGG program from Aegis VideoScape again

because nobody has written a good modern-day 3D generator for this type of thing, but them's the breaks. Simply create a starfield with lots and lots of stars. Place it in the middle of the object you wish to explode, scaled at 0,0,0, and dissolved away. When you wish the object to explode, simply insert a pure white frame (just one) by putting a Luminous white polygon in front of the camera for that frame. In the same frame, make the object vanish and the starfield appear, then rapidly expand. This creates a muuch better explosion. The real important part, though, is that white frame. It'll be so fast that it'll look like the initial light from explosion, and odds are you'll never even consciously see it.

Well, that's about it for this month. I've got a number of things to look at for the next issue, including still more 3D fonts, so make sure to come back, y'hear? As usual, address any hints, tips, suggestions, comments, reels, FrameStores, etc. to:

Mach Universe
625 The City Drive, Fourth Floor
Orange, CA 92668
Attn: David Hopkins

Contact Information:

ProFills Volumes 1 & 2
JEK Graphics
12103 S. Brookhurst
Suite E-125
Garden Grove, CA 92642-3065
(714) 530-7603

Motion Man
Anti Gravity Products
456 Lincoln Blvd.
Santa Monica, CA 90402
(310) 393-6650

Quarterback
New Horizons Software
206 Wild Basin Road
Suite 109
Austin, TX 78746
(512) 328-6650

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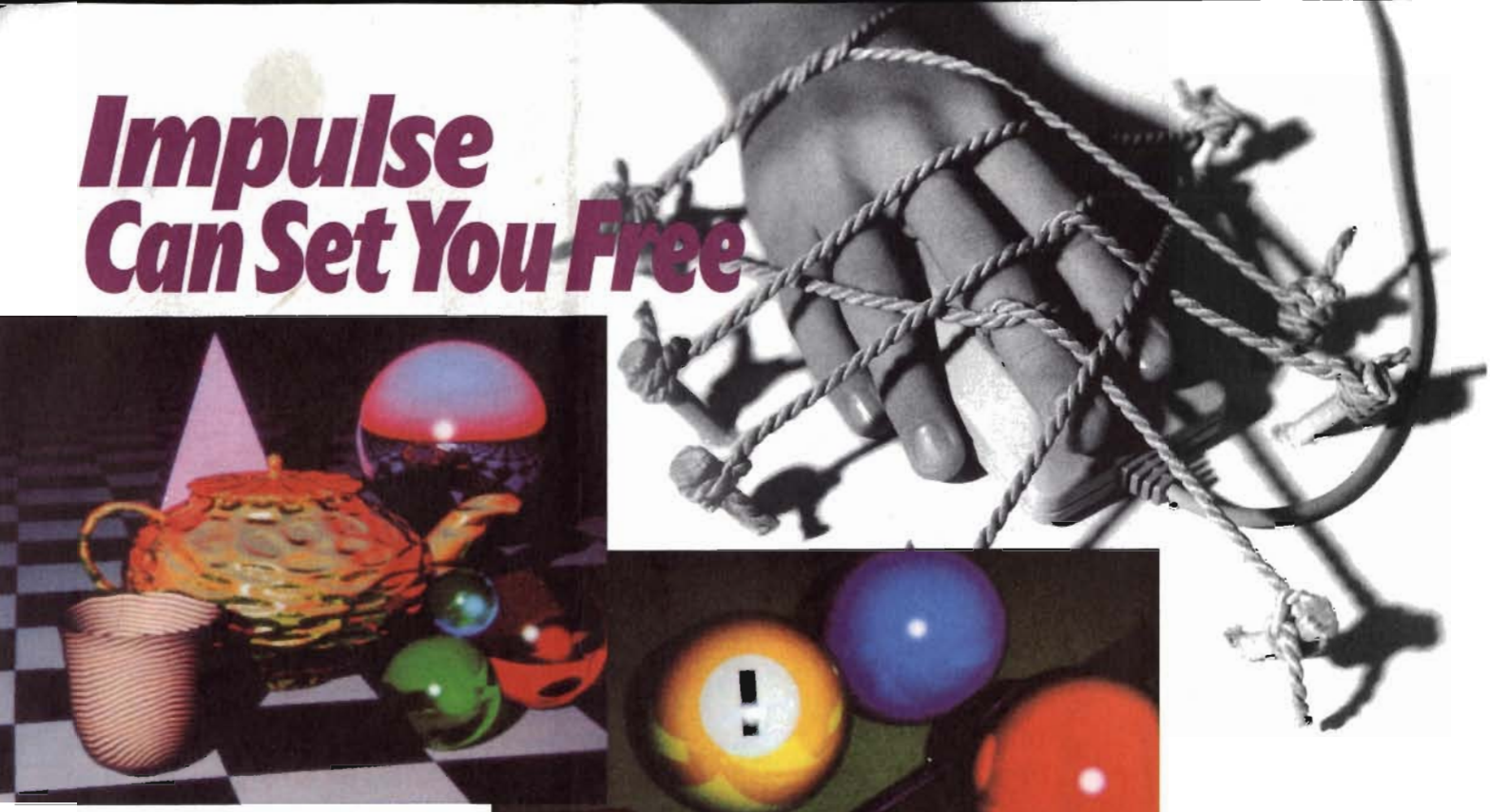

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Welcome to another installment of Doug's DeluxePaint IV tips. This month, instead of giving you the normal tutorial, I'll be reviewing the newest support product for DeluxePaint IV: Flightpaths. I'll also share with you my secret for scaling brushes to exact percentages.

Flightpaths

One of the lesser known (but useful) new features in DeluxePaint IV is its ability to load and save Move settings. So it was only a matter of time before a product like this came out. Mediascape's Flightpaths is a collection of Move path files designed for DeluxePaint IV. It doesn't sound like much, but hey, these aren't your everyday Moves. Flightpath's Move files are multi-step motion paths that cover just about any move you'll ever need.

Are you familiar with DPaint's Move requester? It allows you to fly brushes in and out of the screen, rescale them, and rotate them. It's great for doing tricks with logos and titles. It was one of the highlights of DeluxePaint III. But it's very confusing to the average user. It requires numeric data entry, calculations and lots of experimenting. But, with Flightpaths, you won't be scratching your head when you need to spin a logo offscreen.

To load a Flightpath, click on the Load button on DPaintIV's Move panel, located in the lower center. The Flightpaths are saved in two directories: Ins and Outs. Flightpaths in the Ins directory bring brushes in from offscreen, while Outs fly your brush out. There are 31 types of Ins and 16 types of Outs, with titles like Hits, Flip, Drop, Ripple, Shuffle, Wave, and ZigZag.

There're a lot of unique moves in this package. There's the Hinge, which swings the brush back and forth like it's hanging from an invisible hook. There's Leaf, which gently drops the brush down, falling side to side, as though it weighs almost nothing. There are cute ones, like the Stumble, where the brush wobbles in, then falls down. And then there's my favorite; the Harrier. The Harrier levitates the brush off the ground for a second, then rotates it, where it takes off, into the distance.

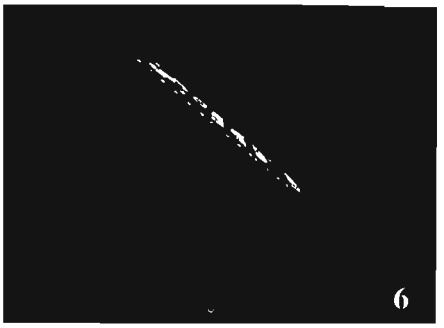
Each Flightpath is a series of individual Move files. This allows for complex multi-step moves. The Flightpath Move files are listed in numerical order. For example, in the Copter Flightpath directory there are these files:

Copter.1(70)
Copter.2
Copter.3
Copter.4

The number in parentheses indicates how many frames this Flightpath requires. Many Flightpaths have several versions for different amounts of frames. To actually perform the Flightpath, you load a Move file, then select the draw button, then load the next one. When they've all been loaded and drawn, your Flightpath is done. The Copter Flightpath spins the brush like helicopter blades (Move file 1), rotating it to a horizontal position (Move file 2), and bringing it down screen (Move file 3), and finally rotating it into position, where it stops (Move file 4). Figures 1 to 9 show roughly how Copter looks when animated.

The manual, although a bit on the flimsy side, is very specific, including several step by step tutorials taking you through creating frames in Dpaint, to doing multi-faceted flight moves on titles. The manual also suggests many variations on these flight paths, including how to combine Flightpaths, how to rescale each move for different resolutions (Flightpaths is designed for 640x400 resolution), how to avoid problems, and a workaround for a bug in DPaint's Move Preview mode (which I have never experienced). There's also a second booklet that comes with Flightpaths, full of descriptions on what each Flightpath does. This is very handy, considering the fact that there are tons of FlightPaths to choose from, and they require a fair amount of work to preview.

Flightpaths also comes with a second disk containing bonus Color Fonts. The two fonts are Astronaut and Viera, and they come in five and four different styles respectively. Astronaut is a 52-



point font with a simple black-and-white version, a chrome version, a neon version, a metal version, and a gradient fade version. Viera comes in 80 pt., with gold, metal, drop shadow, and a gradient fade version. Even though the fonts aren't as clean looking as the Kara Fonts that come with DPaint IV, it's nice to have several different verions of one font.

Overall, I think Flightpaths is a great package for any videographer who uses fly-ins for logos and titles. Since the Flightpaths are so complex, it saves a lot of time and experimentation, and require little more than postitioning the logo, loading the Flightpaths, and executing them. And the Color Fonts are a nice bonus as well.

Flightpaths
Mediascape
7471 Watt Avenue
Suite 109 Department 333
North Highlands, CA 95660
(916) 339-1984

Scaling in DeluxePaint

Have you ever needed to take a brush and make it a specific percentage smaller or larger? Making a brush 50 percent smaller is easy–just press the h key. But what about 75 percent? 30? It can be very difficult to get these exact figures. And, if you use the normal Size command (Shift-z), or the Half command (h), you wont get true anti-aliasing. Here's a method that lets you get true anti-aliasing, along with accurate percentages for your DPaint brushes. After you've tried this trick, you can make it work for enlargements too—it just take some experimenting.

This is a simple trick. Draw a vertical ruler that's half the screen height (Figure 10). For example, if you're in Hi-Res, (640x400), draw a ruler that's 200 pixels high. Don't do this in overscan. If you need to use it in overscan, you can make it in a normal screen mode and load it into overscan later. Divide the ruler equally with as many notches as you want. My Hi-Res ruler is divided into 16ths. Because of resolution restrictions, sometimes we need to fudge a little bit when placing the notches. To get the most accurate notches, first draw your main vertical line (200 pixels high for Hi-Res). Then divide it at the center (100 pixels for Hi-Res). Keep dividing. If you do it this way, you'll get an accurate ruler. Mine has a notch every 15 to 14 pixels (first it 14, the next notch is 15, the next 14, etc.).

Why are we drawing a ruler? Well, this will be our guideline for scaling our brushes, as I'll explain in a minute. But first, we need to save and position our ruler. Save your ruler, because you don't want to have to draw it every time you need to scale something, do you?

Position your ruler so the top line is in the exact center of the screen. The bottom line should exactly touch the bottom of the screen. Note: If you're in overscan, the bottom of the line won't touch the bottom of the screen, but the

important part is that the top line is in the center. It does not matter where the ruler lies horizontally.

Now that you have your ruler positioned, it's time to use it. Pick up your brush and move it to the page with your ruler on it. Position your pointer so that it is on the bottom line of the ruler. If you're not in overscan, this is as simple as moving your pointer to the very bottom of the screen. Now that you've done that, press Enter on the numeric keypad. Pressing Enter puts DeluxePaint into Perspective mode. A rectangle should appear around the brush, but don't worry, this is normal. Now, to scale your brush, hold down the Ctrl key and move upward towards the center of the screen, where the plus (+) symbol is. As you move up the ruler, your brush will get smaller. Press the mouse button to actually draw it.

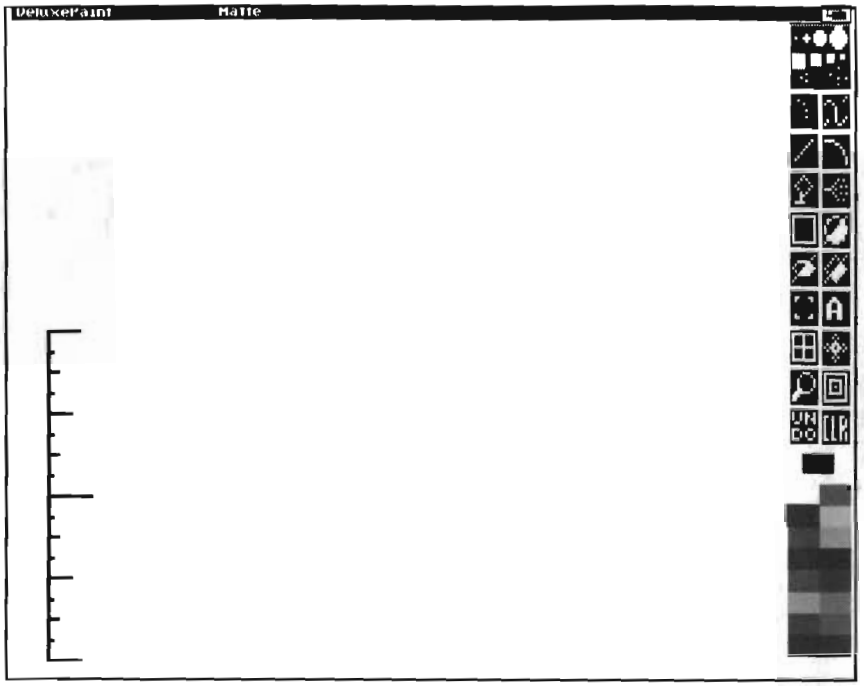


Figure 10

As you move the ruler up, your brush will scale accurately. The middle of the ruler is 50 percent. One fourth from the bottom is 75 percent. It's easy!

If you have AntiAlias mode on, and you're using DeluxePaint version 4.0, the brush will render with true anti-aliasing. If you're in DeluxePaint 4.1, you'll need to rotate the brush to make the anti-aliasing true. I just press 1 on the numeric keypad. It rotates the brush a little, but normally not enough to notice.

It's a strange trick, but I've found it useful on more than a few occasions. Well, that's all there is this time. If you have any questions or comments, feel free to write me care of AVID. Until next time, good luck DPainting...

Avid Column!

3D Perspectives

Mach Universe's Big Rig

Welcome back to the column. We have a brimming-over potpourri of 3D and related topics to cover this month. Speaking of cover, as you may have noticed we've been featuring front covers rendered with Amiga 3D software in the last few months, and we plan to continue to be the only Amiga-oriented magazine to do so. If you have a spectacular image that you think could be a contender for an AVID cover, send us a 24-bit test rendering in 752 by 480 resolution and a note telling us a little bit about the image and yourself. Ideally all objects should be made by you using such programs as Imagine/Silver, Real 3D, Caligari, RayDance, or Sculpt; we'll leave the LightWave covers to our sister publication, Video Toaster User.

I received an interesting Imagine-related phone call from Germany the other day. Reader Patrick Roye informed me that it was possible to employ translation and rotation applied within the Cycle editor to a cycle object's parent axis in the Stage editor. In my book The Imagine Companion I stated that this isn't possible. Here's an example. In the Cycle editor you load or create a cycle object, go to say frame 5, then move the entire cycle object you're working with horizontally, then save that object, then load it into the Stage editor having set up the project for a five-frame animation. In the Action editor to test the animation you set the object to perform one cycle. Use Make in the Stage editor and the object remains immobile. Now here's Patrick's tip. Go into the Action editor and delete the object's Position timeline. Now go back into Stage and use Make again and watch that baby go! The same applies to rotation. If you apply rotation to a cycle object's parent axis in the Cycle editor, for it to occur in the Stage editor you must delete the object's Align timeline in the Action editor. It's that easy—thanks, Patrick! You may be hearing more from Patrick soon in these pages.

You may have heard that Progressive Peripherals and Software recently suffered a major warehouse fire. This is, of course, terrible news; on the positive side, the fire didn't affect Progressive R&D, where the development of 3D Professional 2.0 continues apace. Lots of great new features are being added; I'll have an update next issue.

I was lucky enough to be able to attend the SIGGRAPH trade show in Chicago last month, where all the high-end computer graphics companies gather to show off their latest goodies. The highlight was Newtek's world debut of the music video Theology by Todd Rundgren's Toaster-based Nutopia video production company. It's an eye-poppingly spectacular showcase of LightWave's capabilities. The best word to describe the graphics effects in Theology is dense. I know I'll watch it several dozen times to begin with as soon as I'm given the opportunity.

But also being shown at SIGGRAPH was a preliminary version of a startlingly changed Real 3D, due to be released in October. This program has changed so much you might not recognize it, and that might be partly your fault! That's because you can now customize the interface, and give it any look you like. Now you can set up different work environments for different types of jobs, and not have to deal with unnecessary gadgets and tools. Another first for Amiga 3D software is that the program will multitask within itself. The most obvious use for this is being able to start a render, then go back and edit an object while rendering takes place—no more going for that cup of coffee!

New high-end rendering options include motion blur, depth of field, mul-

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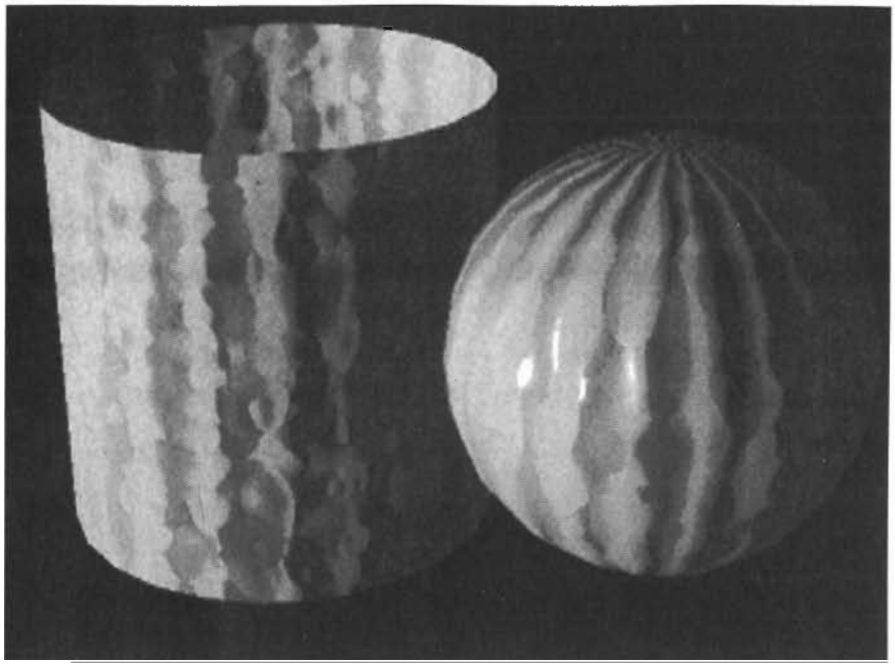


Essence: Tree Bark Textures

tiple background images, lens flair effect, and soft shadows. Perhaps of greatest interest to animators is a "revolutionary animation system" featuring particle animation, character animation, "inversed kinematics", magnetism, "animation of transformations and free-form deformations" (not sure what that last one is, but it sounds neat), as well as the usual morphing and keyframing. There's a whole lot more, and it alls sounds really promising. Watch out for Real 3D—it's threatening to become a major player in the Amiga 3D marketplace.

Essence

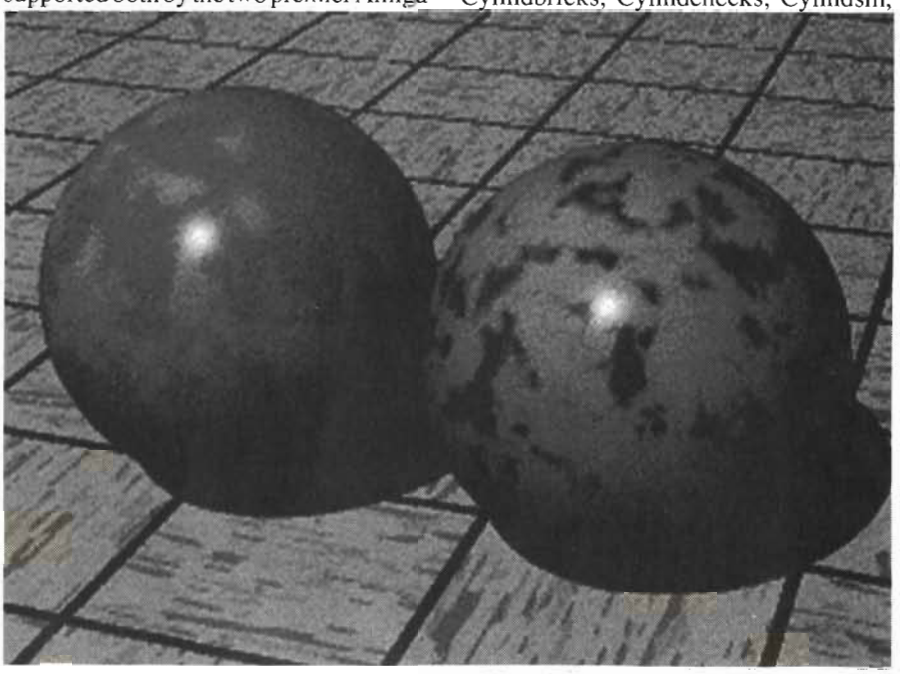
The hot product of the month has got to be Essence, Steve Worley's new package of procedural textures for Imagine. In a nutshell, it's a well-organized collection of 67 incredibly varied textures, many of which are set up for easy eye-popping animations, with a near-great manual and zillions of parameters to play with. I spent a whole morning just adjusting one texture! Read on for the details—even if you only use LightWave, you may be more interested in this product than you might think.

When you hear about texture mapping, you usually think of taking an image file and wrapping it around a 3D object in a rendering program. The benefits of this are obvious: you can apply any image or sequence of images to an object's surface. There are drawbacks, however. Parts of images can become distorted on irregular surfaces and blocky pixels are just some of the problems that can occur when using image files as texture maps. And if you use images large enough to prevent blockiness, you might just run out of memory.

The alternative method of changing an object's surface appearance, which is supported both by the two premier Amiga 3D programs, Impulse Inc.'s Imagine and Newtek's LightWave 3D, is called procedural or algorithmic texturing. Instead of using an external image, the programs use mathematical formulas and user-defined numeric settings to calculate and portray patterns of color and/or bumps on objects' surfaces. While LightWave's procedural textures are hard-wired into the program, Imagine takes a modular approach. Version 2.0 of Imagine comes with 14 external texture files with names like Checks, Disturbed, and Radial. You can load up to four of these textures onto an object via the Detail editor's Attributes requester, layering them so that "lower" textures show through the "holes" in the ones above. So, for example, you could have a black and woodgrain-checkered object. While the textures included with Imagine are fun and some are quite unusual, they can be tricky to use, and alas the wood and marble aren't terribly realistic.

A new software product, Essence, is now available for Imagine users in need of textural solutions. Providing a whopping 67 highly useful and well-documented new textures, this grabbag assortment is a tinkerer's dream. Here's the complete list in alphabetical order:

Bandsm, Bandturb, Bandfract, Bbcourt, Blobc, Blobr, Blobf, Bozo, Bump, Counter, Cubist, Cylindbricks, Cylindbricks, Cylindchecks, Cylindsm,



Essence: Two Examples of Fractal Noise on Floor Tile

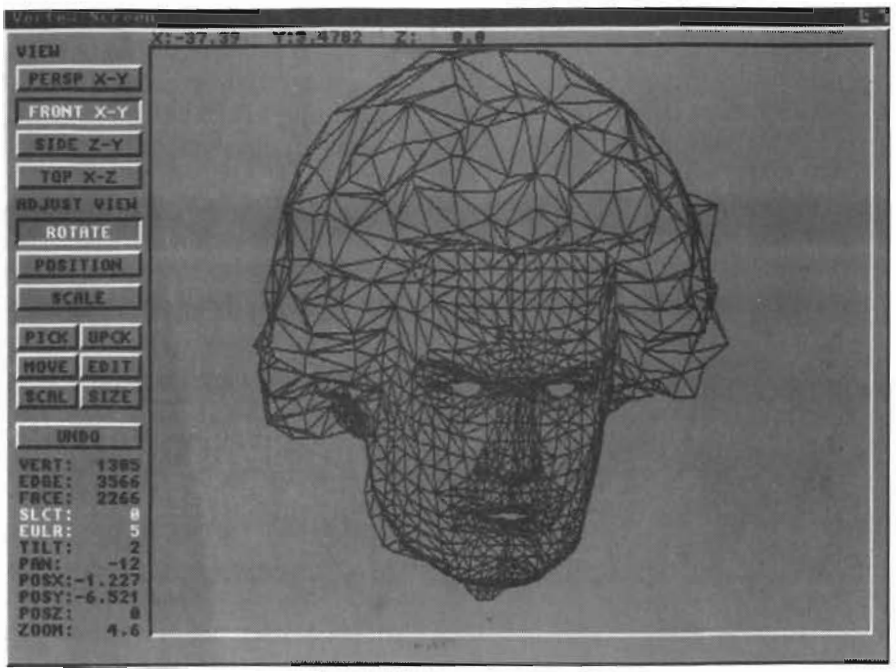
Cylindturb, Cylindfract, Diamonddeck, Flatten, Floortile, Fractalcolor, Fractalfilter, Fractalreflect, Fractalscolor, Fractalsfilter, Fractalsreflec, Gridmesh, Hex, Hexmesh, Linearfract, Linearsm, Linearturb, Huerotate, Mandelbrot, Polkadots, Radialsm, Radialturb, Radialfract, Ringsm, Ringfract, Ringturb, Shellsm, Shellfract, Shellturb, Solid, Spherechecks, Sphereshade, Stripes, Stucco, Swapcrf, Swaprgb, Swirl, Swirlfract, Swirlturb, Swirl3, Treebark, Triangle, Turbcolor, Turbfilter, Turbreflec, Turbscolor, Turbsfilter, Turbsreflect, Varyabsrgb, Varyrelbright, Varyrelrgb, and Veinedmarble.

The variety may seem overwhelming at first, but upon careful perusal of the 108-page manual you can see that many of these are variations on a similar theme. For example, quite a few are "transition" textures, which take off on the basic theme of Impulse's Linear and Radial textures. These create gradated bands of color on objects that can be animated for some useful effects, which are well-described in the manual. For example, the Shellturb texture lets you simulate a bolt of energy hitting the side of a space ship, with a ragged-edged blue ring expanding rapidly away from the point of impact. Or you can use the Ringfract texture to create stunning gas planets with swirling bands of ethereal color. The manual also describes using a cylindrical turbulence texture on a disk to simulate animated coronas on the sun's rim!

Another highly useful category is altitude textures, with various types of procedural bump maps. There's the standard but outstanding fractal bumps, which can simulate the surface appearance of anything from an asteroid to sandpaper. Other patterns include the "diamond deck" style of industrial metal flooring, stripes, various ridged grids, a special cylindrical "tree bark" texture and an unusual "flatten" texture that makes an object look two-dimensional. Another category is Pattern and Swirl 2D textures, which includes a three-color hex grid, triangles, shaded cubes, and spirals.

Some of the most versatile textures in Essence are based on fractal noise, a mathematical randomization principle that can create natural-looking patterns and motion. A few examples of the many applications for fractal noise are clouds, surface dirt and wear patterns for added realism, TV static, and granite. LightWave implements this to a certain extent, but Essence goes far beyond. In fact, the mathematical theory of fractal noise gets its own chapter in the manual! This is (alas for many of us) further proof of the inescapable reality of the necessity of learning as much math as you possibly can if you want to get ahead in 3D graphics.

Another category is Bricks, Checks, and Miscellaneous Textures. This includes a special Checks that lets you make a true Boing sphere, but the miscellaneous textures here are the most special. There's a basketball court, perhaps the most off-the-wall texture here (yes, really! a regulation basketball court!), and an animated LED counter for simulating a digital clock or watch. The Huerotate texture color-cycles an object's



Vertex: Interface

colors through the ROYGBIV color wheel—fantastic! It works particularly well with the nifty zoomable Mandelbrot texture that presents us with the famous colorful fractal patterns surrounding a bulbous black core. Also included are polka dots and an amazingly realistic veined marble.

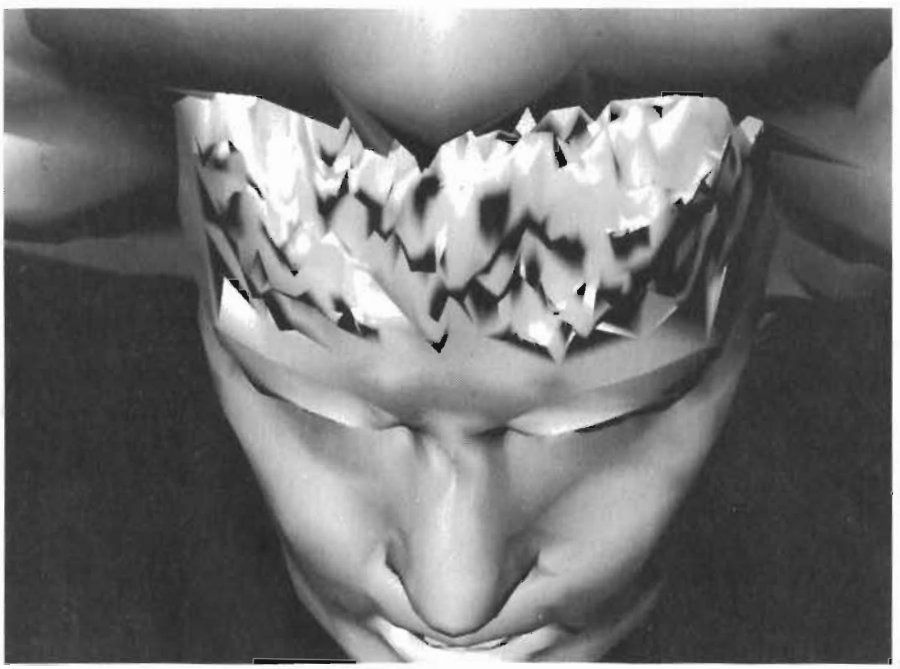
The final category is Utility, which contains textures with features you may never have conceived of, but which you might find essential. Solid can be used to tint objects or to fade image maps in and out. Swapcrf and Swaprgb let you shuffle around color, reflectivity, transparency, and color components in another texture. A potential use for this is to use a texture like Pastella as a transparency map instead of as a color map. Then there are the two Vary textures which apply a fractal noise-based irregularity to an object's color for a more realistic appearance.

The manual is well organized, although you may be flipping around a bit because commonly used parameters are defined only once, while the more unique settings are contained in the texture-specific section. It would have been better if all settings were mentioned in each section, even if only with a page reference to the definition. There's a great deal of useful information, though, such as morphing tips and a trick for applying a virtually unlimited number of textures to an object or group of objects. It's written in a highly enthusiastic youthful style, with lots of "cool"s and admonishments to "Have fun!". There is a table of contents and an index, the final entry in which is the author's name, Steve Worley. If that sounds familiar, it should—Steve wrote the popular book Understanding Imagine 2.0 and is a regular contributor of both articles and images to this publication.

Steve co-authored Essence with Glenn Lewis, author of the shareware mathematical 3D object manipulation software TTDDD. Both are to be congratulated on a valuable addition to the pantheon of 3D support software for Amiga modelers, renderers, and animators. Essence will provide you with years of value. I've been looking at 3D software on other platforms, and believe me, there's no other system that comes close to offering what the Amiga does in terms of value for money as well as versatility, and particularly with respect to 3D support products like Essence. And it just keeps getting better thanks to the efforts of people like Steve, Glenn, Tim Wilson, and many others. Please support these folks to keep them from going over to the MSDOS platform—your pocketbook will thank you in the long run!

Personal SFC 2.0

Nucleus Electronics, Inc.'s Personal Single Frame Controller is the least expensive solution for 2D and 3D Amiga animators who record on single-frame videotape recorders equipped with RS-422 serial interfaces. Until recently, owners of the Personal SFC (including myself) have been restricted to fairly limited use of their decks compared to the unrestricted interface allowed by the BCD



Vertex: Beethoven's Fractal Forehead

single-frame controller I reviewed in AVID Vol.3, Issue 4. Just recently I received the 2.0 upgrade which offers a number of new features, of which the most notable is programmability via an ARexx interface.

With every silver lining comes a cloud (e.g. a single-frame VTR). I love being able to single-frame record to tape, but I miss the infinite looping permitted only by animation playback in the computer; it's useful for fine-tuning motion to be able to view it repeatedly in rapid succession. From the beginning the Personal SFC software has allowed you to create loops on tape by repeatedly recording each frame at the proper interval, but this uses up tape, and since the deck is in play the whole time between each frame, causes extra wear on both the head and the tape. Now I can write a simple ARexx script, like this:

```
/* play a loop four times */
ADDRESS 'SFC.PORT'
options results
do 4
 SFC_CUETOTC '01:10:28:00'
 SFC_PLAY
 SFC_WAITTC '01:10:43:00'
end
SFC_STOP
```

to play a section of tape any number of times. Of course, this causes extra wear and tear on the transport mechanism. Sometimes you just can't win.

The ADDRESS 'SFC.PORT' command tells ARexx that commands are to be sent to the Personal SFC program. The "options results" line allows me to get messages from the program such as the current time code position. Next comes a "do" loop that repeats four times; first the tape is cued to time code one hour, ten minutes and 28 seconds, then it's put into play. After 15 seconds, the loop repeats, or after four times the deck is commanded to stop. It's really very simple; if you can understand a recipe, you can program in ARexx. By the way, if you already have the 2.0 software and have been having trouble getting the manual examples to work, note the use of quote marks around the time code in the example above; they were omitted in the manual examples– this has been corrected in the latest print-

ing of the manual.

Other ARexx commands let you read the current time code, put the deck into record, fast forward and reverse, pause and eject the tape, and get the status code. The latter, which requires a bit of interpretation, tells you whether the tape is ejected or write protected, whether the deck is in remote or local, and is stopped or playing, and so on. There's also a keyboard command to take the deck in and out of Standby mode. Also available via the ARexx interface is a feature called Remote Render, which allows a rendering program to trigger recording through the SFC software. I didn't have an opportunity to test this, but will report on it when and if I do.

New features in the regular SFC program include checking the integrity of all image files before recording as well as the ability to define a Safe Spot. The latter is used when the deck is kept in Standby mode between recording frames, which is to say the tape is threaded and in contact with a moving head. As tape is a fragile medium, this can cause dropouts if the part of the tape in contact with the head contains recorded images. By defining a blank frame immediately before or after the section you're recording on as the Safe Spot, you can avoid potential dropout problems. Finally, the bug that caused DCTV images to be improperly displayed has been squashed. There is a fee for the upgrade; contact Nucleus for details.

Image Fonts

Looking for handsome inexpensive 3D fonts? Just released for Imagine users is a three-disk set of four styles of a sans-serif font called Medium Bold Bank Gothic. Priced at only $29.95 retail, the Image Fonts set includes the plain-edged face, the bevel-edged face, the embossed-edged face, and the chisel-edged face. The accompanying illustration shows the latter three from top to bottom. Note that while the front edges are all sharp, and curved sides are smooth, sharp corners on the sides are also smoothed. This is due to Imagine's unfortunate tendency to Phong-smooth around 90-degree corners, and the font designer's failure to make those corners sharp. You can use the Design editor's Make Sharp command to remedy this if you like.

The embossed-edged characters are actually two pieces grouped together; the protruding edges and the recessed front face. This lets you apply different surfaces to the two parts for more eye-catching results. If you use Imagine and have use for a bold 3D font in various styles, but don't need lower-case letters or punctuation (they're not included), the Image Fonts set is for you.

Vertex

I first wrote about Vertex in this column several issues back, and have just received the latest update, version 1.62, from the author, Alex Deburie. Vertex is an ARexx-compatible 3D modeler that supports most of the popular Amiga 3D object formats and offers quite a few unique and useful features. If you've only seen the older freely distributable version of this program, you've missed a

lot of significant changes that make Vertex a serious contender in the Amiga 3D marketplace. Vertex's strongest feature is its range of powerful object modification commands that makes it ideal for creating shape variations for morphing animations.

By way of a brief review, Vertex is a single-view modeler, offering your choice of a full-screen view from the front, side, or top, or an adjustable perspective view in the 3D editor. There's also a 2D Shapes editor for creating shapes for extrusion or lathing, with such handy features as an arc creation tool. There are more different ways of selecting vertices, edges, or faces than in any other 3D program I've seen, including by binary pattern and outside edge, as well as the usual click-on and drag-box methods.

Once you've selected some vertices, you can use the really interesting Modify menu Distort commands such as Apply Curve, Randomize, Gravity, Be Sphere, Wrap to Ring, Taper, and Twist. Perhaps the most interesting Distort command is Multiply, which receives an entire chapter in the extensive on-disk documentation that accompanies Vertex. Multiply lets you apply a mathematical formula to an object for some bizarre and/or useful results. You can use Multiply to add bumpy patterns to an object, to flatten it, to make it conform to a teardrop shape, and much more.

Other Modify menu commands let you fill faces in radial or planar fashion and to modify face colors and smoothing. You can fuse selected vertices into a single point at the center, and subdivide faces and edges. You can determine the distance between two vertices, and name groups of selected vertices. One of the more unusual commands creates a fractal terrain on a selected surface. Note the accompanying illustration in which a fractal terrain has erupted from Beethoven's forehead.

Vertex has many other features, include a built-in library of standard shapes, and standard object manipulations including scale, and position—all interactive, plus interactive click-and-drag point editing. Alas, there is still no interactive object rotation—how about it, Alex? And yes, there is an Undo command! Now for the new features. First off, Vertex is faster, and memory limitations have been removed for all intents and purposes. The total limit of points, edges, and faces is 1,000,000! The interface has been upgraded in a number of ways, with PAL support, a new color scheme and new buttons for the Move, Edit, and Scale commands. You can now opt for traditional menus that hang down from the top of the screen instead of a hierarchical one that pops up from the mouse pointer location—I actually prefer the latter. And Alex has somehow managed to overcome one of the major limitations of the GFA BASIC compiler that he uses, which means that Vertex can now multitask without slowing down other programs! The Sleep command is still there for those who like to use it. His current stumbling block is an inability to use GFA BASIC with an Amiga 3000, so if

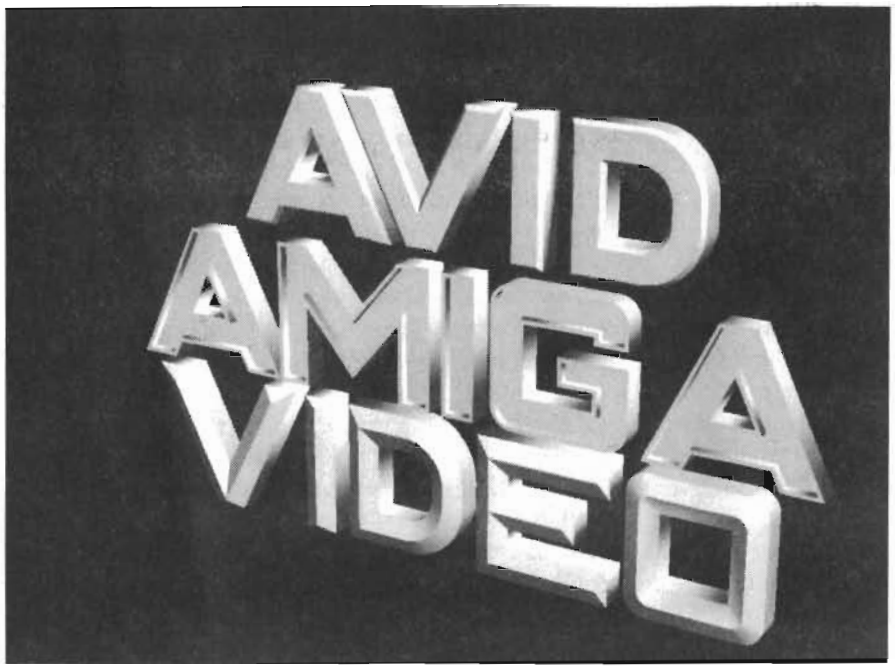


Image Fonts

anyone has a solution, please notify him at the address below.

Ok, on with the changes. The fractal creator can work in three dimensions usin the versatile Hot Spot as well as the previous two-dimensional mode. Objects saved in Imagine format use the Fastdraw option, which saves you a lot of time in the Imagine editors. New keypresses let you repeat the last menu selection and toggle display of vertices. A new circle object has been added to the built-in primitives. Zoom now goes up to 64X, and lengthy redraws can be interrupted with the space bar. Also, you can save an IFF file from the solid model or the new black-and-white wireframe preview displays. And the powerful Bezier Curve tool mentioned above that lets you apply curves to objects has a new feature that lets you create even more complex cross-sections. Not to mention numerous bug fixes.

Vertex is similar to so many tools in the Amiga 3D software arena in that it rewards extra time spent with it exponentially. There are many settings and you really have to work methodically to take advantage of all of its capabilities. But even if you only use the wonderful "Be Sphere" command, which works so much better than Imagine's Conform to Sphere, it's worth the purchase price. Give Vertex a try!

Animatrix Modeler Update

The "other" stand-alone Amiga 3D modeling program is Jon Dubois' Animatrix Modeler, which is currently in version 1.1, but 1.2 is about to be released. The major change in 1.1 is support for stereo modeling with Haitex X-Specs LCD glasses or the more traditional red-blue tinted lenses. If you use the LCD glasses you can see a true three-dimensional gray-scale represention of your object as you model, while the red-blue mode gives you higher resolution. You can now reflect an object along a given axis, and there is minimal online help available. Also, you can zoom in on a view using a drag box.

For version 1.2, Jon promises that due to popular demand, the big difference will be a vastly improved user interface, requiring fewer mouse-clicks to access a given command. You'll be able to move the camera, objects, and selected points interactively with the right mouse button. I'll have more to tell you about version 1.2 as soon as Jon sends it to me. Also, I recently learned that Jon is working on a 3D digitizer project, and hope to have more to tell you about that in the next issue.

Truckin'

David Hopkins is a familiar name to readers of AVID and Video Toaster User, being a regular LightWave columnist in both publications. His company, Mach Universe, has recently released a detailed model of a tractor-trailor truck for LightWave called The Big Rig. The truck comes in two sub-groups; the tractor and the trailer (of course). The tractor itself is by far the most detailed piece, consuming a massive 248,000 disk bytes. Included among its ten supporting objects are wheels and mirrors. The trailer, being a box, isn't quite so detailed, but it is accompanied by four wheels and a two-part rolling nose assembly.

As with Motion Man, you don't have to arrange the parts manually; setup is done automatically for you via the Lightwave scene files included with Big Rig. The first scene simply consists of the entire truck with all parts. Alternates to this let you load only the tractor or only the trailer. Another scene lets you load the whole truck from a floppy disk in DF0: if you don't want to install it in your Toaster hard disk directory. Finally, the only scene with motion depicts the truck slowing to a stop.

Still-Store

Proud of that big 200-meg hard disk, aren't you? It lets you store hundreds of 24-bit images in JPEG compressed format, useful for all sorts of things from backgrounds to texture maps and bump maps and more. But if we're being perfectly honest here, you're starting to go a little crazy keeping track of them all. And once you've found the right image, it's a big pain decompressing it so you can use it in your favorite rendering program, right?

Still-Store to the rescue. It's a graphic database program that lets you keep track of your vast collection of images. When you first run the program, it looks like the accompanying illustration, which shows three of the 20 texture-type compressed images included with the program. You can add your own images to the database with the Add to Store button. This brings up another requester that lets you add a list of files from one directory. When you give the word, the program starts making two copies of each file in its own storage area. One is a 16-color dithered minia-

ture for the database display, and the other is an optionally JPEG compressed copy—you can select the compression amount. The original files aren't touched. It's too bad the program can't just store a pointer to the original image, but this could cause problems if you move or delete image files, and particularly if you use removable media like Syquest drives. The program handles all IFF formats and JPEG. Plus if you have the Toaster and Toaster Paint running as well as ARexx, you can even work with Framestore images!

Okay, so you've got compressed and miniature versions of all your pictures connected with Still-Store. What's this for? Well, as soon as you run the program, you can get a quick visual proof of any image in the database. If you like the image, click on it and it's added to a list on the right. There's also a database that lets you enter information and perform text searches for each picture on various fields such as name, color, category, artist, date, size, as well as an extensive scrolling comment area. And a page view that lets you see your picture database eight images at a time. Once you've assemble the list of desired images, you can decompress them to any IFF format including 24-bit and HAM as a batch. It's fun to let the computer do the work for once!

There's quite a bit more to Still-Store—it's professional software without a doubt, although I noticed what may have been a performance glitch or two, but which could have easily been user error. The instructions are complete and well written, although they do advise you to delete your original images once they've been installed in Still-Store. You should perform careful tests with compression and decompression of image files and careful inspection of the results before doing so. Certainly repeated compression and decompression of images is inadvisable, but this isn't a danger with Still-Store. I recommend using a non-lossy compression method for archival storage of your most precious and detailed 24-bit images, especially 3D rendered scenes, such as the public domain program LHA. Still-Store performs as promised, and should appeal to any Amiga user who has to deal with the usual avalanche of 24-bit images.

Conclusion

I've run out of space already, and haven't even gotten to some of the latest arrivals. There's the stereo version of Animatrix Modeler, and a fascinating new modeler and path generation tool called Lissa. It produces wonderful complex curves with ease and I'll cover it in depth next issue. There's also a great-looking model of a 1957 Chevy. And the new textures from Bearded Wonder, one of which was used as a reflection map for the rendering of Anti-Gravity's Motion Man that illustrated David Hopkins' Taming the Wave column in the current issue (August/September 1992) of AVID's sister publication, Video Toaster User. Check back with us next month for all these and more. Until then, don't forget real reality while exploring your virtual ones.

Still-Store interface

Personal SFC 2.0
Nucleus Electronics, Inc.
PO Box 1025
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(416) 859-5218
FAX: (416) 859-5206

Essence
Apex Publishing
405 El Camino Real
Menlo Park, CA 94025
415-322-7532

Image Fonts
CRC Productions
PO Box 9
Mantachie, MS 38855

Vertex
Art Machine
4189 Nickolas
Sterling Heights, MI 48310
313-939-2513

Animatrix Modeler
Dubois Animation
1012 N. Chartrand Ave. #F
Edmond, OK 73034
405-348-4670

Mach Universe
625 The City Drive
Fourth Floor
Orange, CA 92668
310-315-1750

Still-Store
Graphic Imagination, Inc.
PO Box 661
Marion, IA 52302
319-337-8156

Toaster Tricks!

One forty-five A.M.: I've discovered a major problem with the Video Toaster—it's addictive. I know, I know, I should have seen it coming and I thought I had it under control but I just got caught up in it and before you know it, I was trapped. I just started off small, you know—doing some easy effects and playing around with chrome spheres and checkered floors in LightWave, but pretty soon I was into the hard stuff—designing my own ChromaF/X and building lumbar vertebrae in Modeler. My social life had all but shriveled up and I would find my tired eyes staring at my monitor at three in the morning. Nothing mattered anymore—just one more rendering, just one more cool image in Toaster Paint—I could go to sleep in just a little while...

I didn't snap out of it. Try as I may, I found myself doing the same thing over and over, spending more and more time on the Toaster, losing more and more sleep, always trying to get that last Toaster fix in before I called it a night, I mean morning.

Well, here it is about a year and a half later and I'm happy to report that I've come to terms with the demon. I have learned to accept the fact that I'm a junkie and I'm just going to have to live with it. I still stay up till three in the morning but now I've learned a lot of time-saving tips so I get more accomplished before I pass out.

Since I know how it is, I'm going to help you out by sharing some time savers. It won't cure you, but it will help you get more out of your demon.

Switcher

With system 2.0, the Toaster takes quite a bit longer to load up the default project. Not only are there two extra grids of effects, but some of the new effects are close to a meg in size! All of this adds to the time needed to load up the project.

If you load the GetSmall project (#001) you will only have one effect — the smooth fade. Not only does this free up memory, but it also decreases Switcher load time dramatically. Since the Toaster remembers the last project loaded/saved, the next time you start the Toaster, the GetSmall project will automatically load. If you always use one particular program slice, you could click on it once to load it into memory, then save the project (using a different number and name). This way, the next time you start your Toaster, this project will be started and automatically load your favorite slice into memory. Remember: If you save a project with all the program slices loaded into memory, Switcher load time will take a while.

Toaster Paint

There are times when you need to use range-filled text in Toaster Paint. For instance, let's say you need text that appears to be on fire. You would normally accomplish this is by stamping down your text in a solid color, going into Range mode and setting up your range colors and hotspot and then using the flood fill tool to fill the individual letters. This works somewhat but you will quickly notice that the range does not fill properly inside the letters. It seems to "box"around edges. If you've ever tried this procedure in Deluxe Paint, you may have noticed the same thing happening.

So, how do we get proper range-filled text? The next logical step goes like this: Stamp your text down again in a solid color (Normal mode). Next, set up a range and, while in Range mode, draw a solid rectangle completely covering the text that was just stamped down. Before doing anything else, choose Undo and then press the j key on the keyboard to jump to the spare page. Choose Redo to draw the range filled rectangle on the spare page. You now have a filled range located in the same area as the solid text. Press the j key to go back to the original page and choosing RubThru mode, use

the Flood Fill tool to fill each letter with the range that is "behind" it. This time when you are finished you will have a range that looks perfect. This, however, is not a big time saver. But this is:

Instead of stamping your text down and then adding the range to it, you can add the range right from the start. Go into Range mode and set up your range before choosing your font and typing out your text. As long as you are in Range mode when your font "brush" is created, the text will have a perfect range set up. The secret is to make sure you go back into Normal mode before you stamp down the text. If you stamp the text down in Range mode, Toaster Paint will attempt to fill a range into the shape of the text and it will not look right. As long as you create the brush in Range mode and then return to Normal mode before stamping it down, it will look great.

LightWave

1) If you find yourself constantly changing the default values for background colors whenever you load a new scene, try setting up the colors you want and saving the scene with no objects in it. Use this as your "default" scene when you first enter LightWave. You can also make changes to the number of lights, camera resolution, first frame/last frame, ambient light intensity, etc. and all of these values will come up whenever you load this scene.

2) Want to have shadows for your objects but not spend the time ray tracing? Simply model flat polygons in the shape of the objects that you wish to have shadows. The easiest way to model the shadow is to load the object into Modeler and place it in a background layer. In a different foreground layer, simply "trace" around the shape of the object with points and create a flat polygon. Make sure to give the shadow a different surface name. If the object for which you want to create a shadow has a cross section that represents the shape of the object (such as a lathed wineglass or urn), you can simply choose the cross section and copy it into another layer then rename the surface to give it different values than the object.

3) If you are rendering a scene with many static objects and one or two that move, you save an incredible amount of time by rendering one frame of just the non-moving objects and then use it as a background image during the rest of the animation for the objects that are actually moving. The only time you will run into a problem is if the camera has to move. A background image always stays in front of the camera no matter where the camera moves which in most cases does not look right.

4) While this tip is not really a time saver, it's such a great trick that I couldn't keep it from you. There is a great way of simulating surface morphing that I have used in many applications.

I'll give you an example of how I used this trick recently: A client had requested an animation where a large pile of leaves morphed into a small pile of dirt to simulate how composting works. I designed my two objects - a large pile and a small pile. I then wrapped an image of a compost pile onto the surface (both objects used the same surface name) and set up my morph envelope. The morph worked great but I had a large compost pile morphing into a small compost pile which was only half of what I needed. I loaded each of my objects into Modeler and changed the surface name of each to a new name then saved both the objects out using different names from the originals.

I then loaded these two new objects into the scene and took an image of dirt and wrapped it on to the surface of these objects. I put these objects in the exact location of the two original (with the leaf surface) and set up the same morph envelope as the original objects so all will morph together.

You may think that you could just fade out the leaf-morphing objects and fade in the dirt-morphing objects at the same time to simulate the leaf to dirt morph. The problem here is that at some point you are going to have two partially faded morphs happening and be able to see through everything. The key is to size the second objects (the dirt morphs) just slightly smaller than the first objects and place them inside the first. This way all you have to do is fade out the first set of objects and it will appear as if your surface is morphing into the second surface. This process works extremely well. *(Editor's note: Bob Hovey presents a tutorial on this technique in the August/ September 1992 issue of Video Toaster User magazine.)*

Modeler

1) If you have a very complicated object to work on, you can select points and/or polygons that are in your way, cut them out and paste them into another layer. You can keep doing this until just the section you want to work on is left in one layer. After modifying the object, you can select all the layers as foreground layers and resave your object.

2) Use the Mirror tool when you need to have multiple copies of certain objects such as tires on a car. It is much faster than making a copy of the object, pasting it into another layer, moving it to the new position and then pasting it back.

The mirror tool is also perfect for making symmetrical objects like cars or sunglasses. Just make half of the object and mirror it over itself.

CG

When you are working on a line of text that is located beneath the menu strip, the strip automatically disappears. Pressing the Help key will bring it back but if you make a change such as pressing F5 to change the shadow type, the strip will keep disappearing. You can save time by moving the line of text up (Shift up-arrow) above the menu strip and then after make all the changes to it, move it back down (Shift down-arrow).

That's it for this month. Join me next month for more tips and tricks.

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animating TITLES PART 2

In last month's article we used Deluxe Paint IV to recreate the title design for the PBS music series, "Video Cafe" (Figure 1). The design of the title features a neon look for the "Video" title and a bright highlight which travels

across the face of the "Cafe" title. This month, in Part 2, we will cover the animation of the word "Cafe" so that it writes itself onto the screen and the use of AnimBrushes to create sparkling highlights to the letters.

One of the powerful aspects of Deluxe Paint IV is the variety of options and approaches available when animating. Frequently, there are many ways to create a desired animation effect, so the continuing challenge is to find the most effective and least time-consuming method. This is especially evident in the creation of a title which appears to write itself onto the screen. One method described in a previous AVID article (Animating Logos, October 1991) involved copying the finished logo to all of the frames of the animation, and then working backwards to erase the logo frame-by-frame until the logo disappeared. This method requires lots of erasing since each frame must be erased from the end of the logo up to the current location of the logo. I have found a variation of this approach that reduces the amount of erasing needed on each frame and ensures consistency between the frames.

Getting Started

Start by loading the "Video Cafe" title picture we created last month. To begin the animation process we need to activate the Animation Control Panel (Alt a) and create some animation frames.

Typically, the first step when animating is to determine the number of frames needed for your animation and then set the frame count to this number. In this method, however, we'll start with just two animation frames.

Using the Animation Control Panel, left click on the "+" button to add a frame to your animation. Now you have two identical frames of the complete "Video Cafe" title. Go to frame 1 by moving the slider bar all the way to the left or left click on the arrow in the upper

left corner of the Animation Control Panel. Select the largest rectangular brush and the Straight Line Tool. Place your cursor over the end of the letter "e" and press the lower case "m" key to magnify your work area for easier viewing. Using the right mouse button, erase the farthest right edge of the "e" in "Cafe" by drawing a line with the background color on top of it (Figure 2). (The background color selected should be Color 0.) Be sure to also erase the drop shadow at the same time.

Staying on frame 1, left click on the "+" button to add one more frame. You now have a three frame animation with frames 1 and 2 missing a little bit of the title and frame 3 with the complete "Cafe" title. Go back to frame one of your

animation and erase a little more of the "Cafe" title and then add 1 frame. When you get to the first sharp curve at the bottom of the letter "e" you will have to make a pie-shaped erasure in order to smoothly animate around the curve (Figure 3).

As you get to the spot where the stroke of the "e" crosses over itself care must be taken to leave the drop shadow that goes with the first part of the letter "e" (Figure 4). Redraw any part of the drop shadow you erase. At the point where the stroke crosses over the first part of the "e" add two frames before you continue to erase. This allows for the time it takes for the stroke to cross over itself so that the letter "e" writes itself smoothly. Without this extra frame, the animation would seem to skip ahead when the stroke crossed an top of itself.

The top of the letter "f" will also take some special care. As you erase the "f", draw in the colors for the "E" in "Video" so that it is revealed as the "f" is erased (Figure 5). When you get to the part of the "f" which is behind the "E", add 3 frames for proper timing and then

begin erasing from below the "E" (Figure 6). Continue to erase and then add 1 frame until you get to the letter "a".

The letter "a" also takes special attention since the stroke normally used when writing the letter "a" by hand involves retracing the beginning and ending parts of the letter. To simulate the natural feel of the stroke as it retraces these parts of the letter, add 6 identical frames at the point where the spine of the letter "a" retraces itself (Figure 7). Add 12 frames to the first part of the letter "a" where it retraces the arc from the top of the letter to the bottom (Figure 8).

Continue erasing the letters "a" and "C" until the "Cafe" title has been completely erased. Go to frame 1 and play the animation, checking the timing of the strokes of the letters "a", "f", and "e", which cross over themselves. Add or delete frames as necessary to achieve the proper timing. When you are finished, go to the last frame of your animation and add 30 frames to facilitate editing. Next set the speed of your animation by going to the Anim menu and selecting Control and Set Rate. In the requestor set the frame rate to 30 frames per second. An alternate method for

setting the speed of the animation is to use the arrow keys on the keyboard. While the animation is playing, tap the left arrow key to slow the animation down and the right arrow to speed it up. Each tap of the key equals one frame per second. Now go to the beginning of your animation, turn on color cycling, click on the play button in the Animation Control Panel and watch as your logo smoothly writes itself on to the screen. Once you're satisfied, save your animation.

Sparkling Highlights

The next step in creating the "Video Cafe" title is to create the sparkling highlights which appear on each letter of "Cafe". Begin by deleting all of the frames of the "Video Cafe" animation.

Clear any remaining image so that you have a blank screen and activate the Animation Control Panel (Alt a). Select the one-pixel brush and the color white (color 0) and stamp it in the center of the screen. Magnify the area where you stamped your brush, then left click on

the "+" button twice to add two frames to your animation. You're now on frame three of your animation. Select the next larger brush (the one that looks like a plus sign) and stamp it on top of your single pixel and add two more frames to your animation.

Now we'll use the brush outline command to add the next color to your sparkle. Grab a copy of your sparkle with the brush selection tool, select light yellow (color 3) and press the lower case "o" to outline your brush (Figure 9). Line up your new brush so that it covers up the old one, stamp it down and add another two frames. Repeat this process two more times. You should now be on frame 11. Select the dark yellow color (number 4) and repeat this process three more times ending on frame 15. Left click on the "+" button seven times so that frames 16, 17, 18, 19, 20, 21 and 22 will be identical to frame 15. You now have a 22-frame animation of a sparkle which grows from a dot to a diamond which holds for 8 frames.

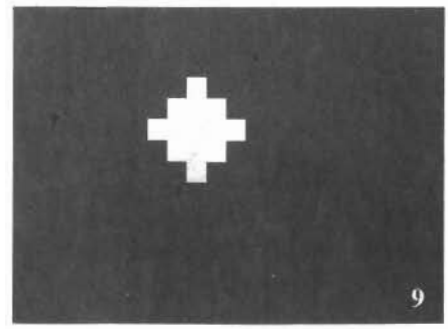
Next the sparkle will rapidly shrink and then disappear. To accomplish this we will reduce the size of the sparkle in larger increments than we used when we built it up. Add one more frame and starting on frame 23, trim all the edges of the sparkle by two pixels. Add two frames, and trim frame 25 by two more pixels. Again add two frames and trim frame 27 by two pixels. Repeat the process one more time. On frame 29 trim the sparkle so that it is just one pixel in size and add one more frame so that your animation is 30 frames in length. Before you continue, be sure to save the sparkle animation.

When you play the animation, the sparkle will steadily grow larger, hold for a moment, and then quickly shrink and disappear.

A Sparkle AnimBrush

The next step is to pick up the sparkle as an AnimBrush. Go to the Anim menu, select AnimBrush and Pick Up. Your cursor is now a large cross-hair similar to the brush selector. On frame 1 of your sparkle animation drag the selection box around the area of the sparkle. Be sure that the area you grab is large enough to accommodate the size of the sparkle at its largest. At the "Pick up AnimBrush" requester, set the number of cels to 30.

Deluxe Paint will now create an AnimBrush which consists of all 30 frames of your sparkle animation. Once the AnimBrush has been created, your cursor should be the one-pixel shape from the first frame of the sparkle animation. To verify that your AnimBrush indeed consists of all the frames of the sparkle animation, press the 8 key on the top row of keys on the keyboard (below the function keys). Each tap of the 8 key moves you to the next cel of the AnimBrush. Press Shift and the 8 key to go to the last cel of the AnimBrush and Shift-7 to go to the first cel of the AnimBrush. Save your AnimBrush by going to the Anim/Animbrush/Save menu.



An AnimBrush has many of the qualities of a regular brush, including the abilities to use it for drawing and animation. We'll be taking advantage of the animation capabilities by using the Move Requestor to help us add the sparkles to the "Video Cafe" title animation.

Moving the AnimBrush

First, delete your sparkle animation and load the "Video Cafe" title anima-

tion. (In the Load Anim requestor, if you click on the "Show" button so that the check mark disappears, the animation will load faster.) We will place four sparkles on the "Cafe" title, one near the top edge of each letter. Go to frame 7 which should show the top quarter or so of the "C". Your cursor should still contain your AnimBrush, if not, go to Anim/Animbrush/Load and load your sparkle AnimBrush. Be sure you're on the first cel of the AnimBrush by pressing Shift-7. Your brush should now be the single pixel shape. Place your AnimBrush in the upper left edge of the "C" and stamp it down. Select the Undo command by pressing the lower case "u". Now bring up the "Move" requestor by pressing Shift and lower case "m". (Deluxe Paint remembers the location where you stamped your AnimBrush and will apply your Move Requestor selections based on that brush location.) Since we don't actually want our sparkle to move, we'll leave the X, Y, and Z registers blank. Next, click on the cyclic button to turn it off. In the Count register, the number should be 30, which is the number of cels in our AnimBrush. Click on Preview. If you want to change the sparkle's location, click on Exit in the Move Requestor, and stamp your

AnimBrush in its new location. (This is why its a good idea to select Undo right after you stamp the brush—you now have the ability to change your brush location without having to erase or redo your frame.) When you like the placement of the sparkle go ahead and click on Draw to add the sparkle to the "Video Cafe" animation. Deluxe Paint will now draw each cel of your AnimBrush to a corresponding frame in your animation. Repeat the same procedure on each of the letters in "Cafe".

When you are finished, turn on color cycling with the Tab key, and play your animation. The "Cafe" title will smoothly write itself onto the screen accompanied by a shiny highlight which

travels across the letters and sparkles which accentuate each letter (Figure 11).

Now that you've recreated the "Video Cafe" title, you can use the various techniques we've explored—color ranges and cycling, color stencils, dithered fills, brush outlines, animation, and animbrushes—to create a multitude of effects which will enhance your video titles. Happy DPainting!

Candace Lee Egan has been working in television and video for ten years. She began her career at a local cable origination channel, then spent several years in commercial television as a TV News Videographer, before becaming Video Production Supervisor at Cal State Fresno. She has produced and directed a variety of video and televison programs from public affairs shows to dance concerts. She is co-producer and sometime director-editor for the "Video Cafe" series. The "Bagdad Cafe" episode that she directed and edited was awarded a Bronze Telly award this past spring. The "Video Cafe" music series has been picked up for airing on 49 PBS Television stations across the country beginning this fall.

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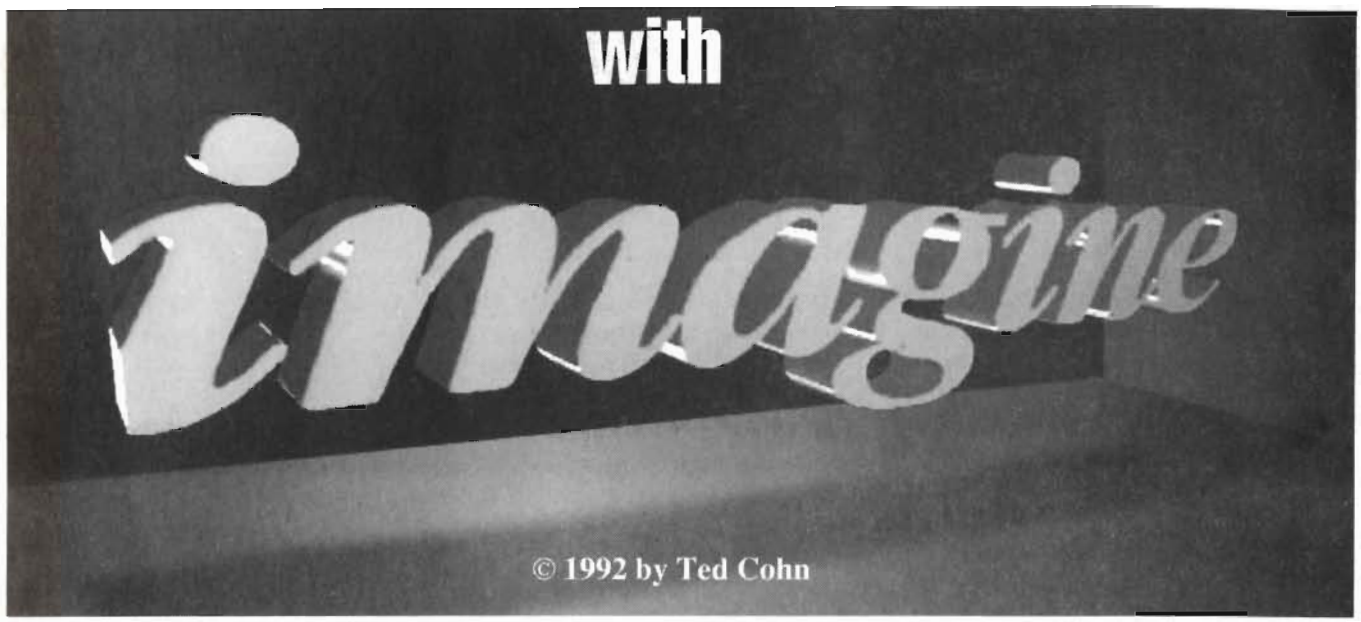
Professional Lighting with imagine



Common lore says to keep lightsources to a minimum to keep rendering time down. But looking at a sample of renderings one sees that rendering times are already sky high. Are people getting carried away with all kinds of texture mapping, reflective surfaces or what!? And what are the results?

Let's take a step back, come down to earth and ask ourselves what we are trying to accomplish. The greatest compliment I can get when showing my results is nothing! Then the person is looking at the content and not questioning how the rendering was accomplished for it simulates reality.

Theory

One of the first tip-offs to computer renderings is the lighting or rather the unrealistic lighting. When something is close but not exactly right the effect is more glaring than if there was a major difference. Take for example the wood texture algorithms in all the 3D programs. No matter how good they are they just don't look real. So real photographs of wood samples are scanned in and used as brushmaps. But lighting can't be brushmapped. Thus we have to use the light tools available. It is a subject of major importance but rarely discussed in depth.

Ray tracing software is good for reflective materials but fails when diffusely reflecting materials are used, such as interiors of buildings or homes. The problem gets more complex when lights and or lamps are part of the scene, not only because of the light emitted directly from these sources but by light through shades, draperies or numerous other objects.

The solution is to "reverse engineer" the light in the scene - simple theory but complex implementation. Numerous lightsources are needed to accomplish what naturally takes one light to do. Even with trace mode used, rendering time still compares favorably with those that grace the covers of this magazine. As an example, the rendering which will be referred to in this article with eleven lights including ambient took just eight-and-a-half minutes in laced HAM overscan (352x440), of course using trace mode. Granted, an RCS Fusion Forty board (68040) running at 25 Mhz was used, but most published renderings with gargantuan rendering times usually seem to utilize accelerator boards as well.

Practice

What follows is based upon and used with Imagine.

Lightsources can't be named, they are referred to by their numbers. Lightsources are numbered sequentially as they are added to a scene. The assigned numbers can't be changed. So since trial and error is an integral part of 3D rendering, the final scene most of the time is quite different from what was initially constructed. Lights are added, deleted and altered so maintaining an updated lightsource database, whether on paper or in a text file, is a good way of keeping

track of one's lights.

There are three types of light sources available; spherical, cylindrical, and conical. Each can cast shadows or not and diminish in intensity as the distance from the source increases or be constant intensity throughout the scene being rendered. One has further control over cylindrical and conical sources by being able to control their focal length (Y size value) and the area illuminated at that focal length (X size value being the radius). As we shall see, these parameters don't always return the desired result—they don't seem to obey the entries used. With experience one can narrow the number of attempts needed to get the final image.

Multiple sources will probably result in lights overlapping. Where this happens the result is more than just additive. This requires care when trying to illuminate a scene where subtle shadows are desired. The main light(s) must not be so bright as to cancel the effect of small lights used to lighten particular areas.

Using "diminish" gives a substantially brighter light than not using "diminish", regardless of the size, when the lightsource is relatively close to the objects the lightsource is illuminating. Diminished lighting can have very low intensity values, frequently under 50 and at times lower than 5. Even at these low values a substantial amount of light is still created.

There is also a global lightsource referred to as ambient light that lightens up the entire scene. It is a constant, non-shadow source whose main function seems to be to soften shadows created by other lights.

What we have then is an astonishing large ability to create practically any lighting arrangement we want. The flip side of having so much control, as with Imagine as a whole, is a daunting task to keep it all manageable, predictable and understandable.

In practically all interiors there are lamps, usually with lampshades. This provides a good example of the difficulty in simulating reality as well as showing that the control we have is up to the task in creating a totally realistic rendering. A lampshade is neither opaque nor transparent. It is solid and light passes through it to its environs. Frequently the light is not uniform along the entire shade, it is brightest nearest the bulbs. And if the lamp is near a wall the shade creates a pattern of light on that wall which also is not uniform. Further observation reveals that since it diminishes the light emitted from the bulb, the shadows it creates are softer than a light without a shade such as a halogen light. And what about the pattern created by the light directly from the bulb onto surfaces not affected by the shade such as on a supporting table or high on the walls or ceiling? Any artistic endeavor requires a keen sense of observation.

We cannot use the Filter parameter in the Attributes requester since there is only transparent or opaque results. Even with small values of the filter there is some transparency and there is no transparency in shades. As mentioned above, we must reverse engineer the entire scene. In Imagine the shade must be opaque. Therefore lightsources have to be on both sides of the shade. On the outside some will point at the shade to simulate the light coming through it and some will point at the walls that light through the shade illuminates. The lightsources inside the shade might not simulate all of the direct lighting on surfaces not affected by the shade so we will have to add more lights.

Placing Lights

The result of these considerations is the light database and the associated screenshot of the stage editor in Figure 1. The rendering is Figure 2. The need for a database is evident looking at the seemingly random numbering of the lightsources. Let's take a look at the lightsources.

To start, two lights were needed to lighten the overall scene, lights 0 and 3 (not in Figure 1). Since no sun type of lightsource could be used and that diminished lights give the best control of light intensity, two lights on either side of the room instead of one in the center gave a base, uniform light to the scene. As mentioned above when two lights have outputs that overlap the result is more than just additive. That is the reason why the intensity values for 0 and 3 and the rest of the lights are so low.

Now to simulate the light from the lamp. All the rest of the lightsources are used to do this, nine in all. First, two lights were put inside the shade, numbers 1 and 2, because in reality there were two

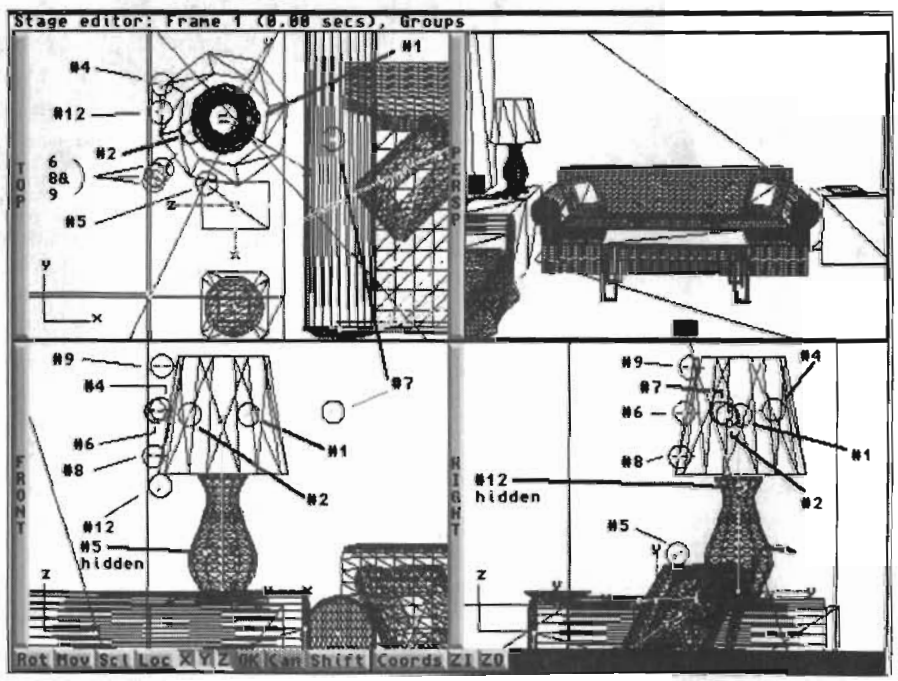


Figure 1

Light Table

Global Ambient: R=G=B=60

Light #	Type	Intensity	Position	Alignment	Size
0	Spherical	R=65	X=50	X=0	X=32
Room Light	Diminish	G=65	Y=-99.994	Y=0	Y=32
		B=65	Z=72	Z=0	
1	Spherical	R=5.5	X=-54.9925	X=0	X=32
Lamp Bulb	Cast Shadows	G=5	Y=-11.4939	Y=0	Y=32
	Diminish	B=4	Z=44.3334	Z=0	
2	Spherical	R=5.5	X=-62.9929	X=-90	X=32
Lamp Bulb	Cast Shadows	G=5	Y=-13.0499	Y=0	Y=32
	Diminish	B=4	Z=44.3334	Z=0	
3	Spherical	R=50	X=-34.9989	X=0	X=32
Room Light	Diminish	G=50	Y=-99.9940	Y=0	Y=32
		B=50	Z=72	Z=0	
4	Conical	R=1	X=-65.4990	X=0	X=5
Shade Light	Diminish	G=0.875	Y=-7.4990	Y=0	Y=0.1
-on wall		B=0.5	Z=45	Z=175	
5	Conical	R=20	X=59.9993	X=-57.2622	X=2.95
Ashtray	Cast Shadows	G=17	Y=-18.9994	Y=18.9867	Y=1.75
	Diminish	B=13	Z=28	Z=-140.9495	
6	Conical	R=1.5	X=-66.1451	X=0	X=0.625
Shade-Left	Diminish	G=1.5	Y=-18.0867	Y=0	Y=0.125
middle		B=1.5	Z=44.75	Z=-44.9951	
7	Spherical	R=2.75	X=-44.8192	X=0	X=32
Shade-Right	Diminish	G=2.75	Y=-13.8181	Y=0	Y=32
		B=2.75	Z=44.6708	Z=0	
8	Conical	R=1.375	X=-66.3701	X=0	X=0.75
Shade-Left	Diminish	G=1.375	Y=-18.7867	Y=0	Y=.125
bottom		B=1.375	Z=39.4167	Z=-44.9953	
9	Conical	R=1.375	X=-65.3951	X=0	X=0.875
Shade-Left	Diminish	G=1.375	Y=-17.4305	Y=0	Y=.125
top		B=1.375	Z=50	Z=-44.9953	
12	Conical	R=2	X=-65.5397	X=-59.9984	X=1
Complement	Diminish	G=1.625	Y=-10.7483	Y=0	Y=0.25
-Lamp Bulbs		B=1	Z=35.9722	Z=90	

Note: Position (0,0,0) is the middle of the back wall at the bottom.

bulbs in the lamp that was being simulated. Through observation incandescent lighting is not pure white in color but has a yellowish tint, at least in this situation. Thus the intensity values of lights 1 and 2 reflect this. The purpose of lights 1 and 2 is to establish the light unaffected by the shade, on the walls, table and the left armrest of the sofa. This proved sufficient for the back wall and the upper left side wall. It wasn't bright enough for the lower left wall and subsequently light 12 was added. Another function of 12 was to give further definition to the shape of the shadow the shade creates. Notice the very low intensity values for 12. Now look at the size values. The scale in the scene is one unit in Imagine equals one inch. The X and Y values don't return a predictable result. Is there a repeatable formula to determine the effects of the X and Y size entities? This proves the rule that educated guesses and repeated renderings are needed to refine renderings is a fact of life for the 3D artist. It's a good idea to plan the use of the size values in conjunction with the intensity values for cylindrical and conical lightsources.

A point worth mentioning is that when shadow was not used it was as if the shade wasn't there. Lights 1 and 2 flooded the scene. There was no difference between a rendering with the shade and without it. Alas, it's not for me to wonder why.

Lightsource 4 simulates the light that passes through the shade onto the wall. A nice result is that there are no sharp edges on the perimeter of the light, another advantage of using conical diminished lights.

Lights 1 and 2 alone do not throw a wide enough swath of light on the table and sofa. Light 5 does this. Alignment of this light is critical because of its relatively high brightness. It was pointed and sized so that there would be no effect of this light on the wall. During experimental renderings, 5 would bleach out any part of the wall it reached. Light 5 also illuminates the left armrest of the sofa against the back wall and highlights the left pillow. So this light has multiple responsibilities. An added touch was the glass ashtray and its effects. While not exactly simulating the optics of the prism properties of the ashtray, the effect is sufficient. (Ashtray attributes: color R=255 G=240 R=230, Filter R=G=B=225, Specular

R=G=B=255, Hardness=125, Index of Refraction=1.05 and no phong).

Another important point has to be made here. The tables here are all black. But the top surfaces of both tables, while the same color as the sides, in reality exhibit different shades because of the lamp and other lighting in the room. In Imagine's vocabulary, the specular highlights are more pronounced on the top surfaces of these tables. But the lighting in the stage editor was not sufficient to bring out any attributes of the table objects (except for the local effect of light 5). So the color of the top of both end tables was changed from black to simulate this effect (left table top: R=G=B=48, right table top: R=G=B=62). The left table has a Specular setting of R=G=B=200 with Hardness=100 to establish the ashtray effect.

Lights 6 through 9 are pointed at the lampshade. The shade is made up of 8 sections. Just as if photographed with a flashbulb, the room lights, 0 and 3, illuminate and almost bleach out the 2 front and center sections. Therefore only the left and right visible sections have to be enhanced with additional lightsources. The right section was bright enough to need only one light, 7. A spherical light was used to not only lighten the shade but also to soften the shade shadow lines on the backwall and aid in the highlighting of the countour of the cushions on the sofa.

But the left section was so dark that one light couldn't produce the realistic gradients; it would be too bright in the center and bleach out too much detail to give the proper accents at the top and bottom of the section. So three lightsources were needed, numbers 6, 8 and 9. This is a good example of how very low size and intensity value lights can be an integral and necessary part of a lighting arrangement. Note the slightly larger X size value for the top light 9 than that of the bottom light 8. Since the shade flares out at the bottom, the top light had to have a slightly greater radius so as not to create a shadow line if the light did not encompass all of the shade.

And finally the global ambient light parameter used was to slightly brighten up the entire scene. While the scene might appear a little on the dark side, this aids in the definition of the contours of the sofa cushions and pillows. If larger values were used the sofa would appear flat and artificial.

The key to all this is to observe your surroundings and exploit the available tools to the maximum. And lighten up!

Figure 2

Exclusive look at Aladdin 4D

An Interview with Adspec Programming's Greg Gorby

Greg Gorby is the president of Adspec Programming and the creator of Aladdin 4D (Draw-4D 2.0). This interview was conducted in the heat of a July afternoon on the premises of Adspec Programming's main office in Salem, Ohio. I flew to Salem to interview Greg and to use the first hot-off-the-press final version of Aladdin 4D 2.0, Adspec's upgrade to their Draw-4D Pro software. Though I have a copy I'm already working with (the final release, not a mere beta version), the package itself will not be marketed until about mid-September due to a wait for the printing of the manual and the packaging.

I consider the Aladdin 4D software to be at the head of the class as far as Amiga graphics/animation software releases in 1992, and in my opinion it's going to set the pace for a long time in the Amiga creative videographic community as the standard by which other Amiga animation ware is judged. I will be initiating a series of hot tutorials for Aladdin 4D in future issues of AVID, based upon tools and options never before seen on any platform around, even the most expensive high end ones. My opinion, of course, should not influence you before you have a chance to see the astounding Aladdin 4D output. All that I can add is that Aladdin is already making a difference in my Amiga based videographic work and the income generated from it.

AVID: Greg, can you give the AVID readers some idea of your background, especially that part which might have a direct bearing on your eventual work with the Amiga?

GG: I have been involved in music, astronomy, sculpture, physics, portrait painting and computer programming. I was the only student in my art classes that had an academic background in physics and math, and have always had an overwhelming interest in both art and science. People generally think of art and science as opposites, but both science and art have the goal of learning through open-minded observation of our environment. The real opposite, if there is one, is the field of engineering. Its goal is to solve a very well-defined problem using what has been learned by the scientist and artist.

AVID: Could you describe Adspec Programming's first venture into Amiga-specific software, and how and why that came about?

GG: I was in a local computer store in 1986. There in the corner was an Amiga 1000 with Eric Graham's 3D ray-traced animation "The Juggler" wowing the patrons. I bought one and took it home, showed it to my wife, Beverly, and told her it was the "future of computers". She made me promise that it was going to be my toy, and that I would never use it to make money, even though our business was graphic design and typesetting. Some of our clients had products that had to be illustrated, and naturally I played at doing some of the illustration on the Amiga. All the 3D software generated bitmaps, but we needed vector graphics. The stage was set. I decided to write the software we needed and bought a Lattice C compiler. After about three months of constant hard work, with my confidence shattered and my head hanging low, I told my wife I had been beaten and would never understand this "simple" language. Now C is so natural to me I even dream in it.

AVID: What differentiated "Draw4D-Pro" from "Draw4D"?

GG: Draw4D was intended initially to be an in-house tool only, for 3D drawing. Later, when we decided to release it as a commercial product, we ended up with a small but very dedicated user base. Most of the users of the Amiga are more interested in video than drawing. As a

matter of fact, we received several calls from Mac and IBM commercial interests asking us to port it. Their interest was more in drawing/publishing than in video. We did not want to do the port, so revised the program to support the video interest in the Amiga community. Draw4D is more drawing-oriented while Draw4D-Pro is more video-oriented.

AVID: Competition for a share of the Amiga 3D software market is very fierce. How do you think Aladdin 4D should be positioned in this market and why?

GG: I don't really view the other 3D developers as competition. We are and intend to remain a small company. There is plenty of room in the Amiga marketplace to support several smaller developers in each special interest. When a company outgrows its market share in a community, the company is in jeopardy and must look for revenues outside the community. This is the number one reason for developers porting to other platforms. Each of the Amiga 3D programs has a set of strengths and weaknesses. The success of a particular program is based on a balance of these strengths and weaknesses, along with a disproportionate amount of value placed on advertising. Aladdin 4D is without a doubt unchallenged in its balance of strengths and weaknesses. I expect Aladdin 4D to become the "standard" 3D rendering package for the Amiga by which all others will be judged.

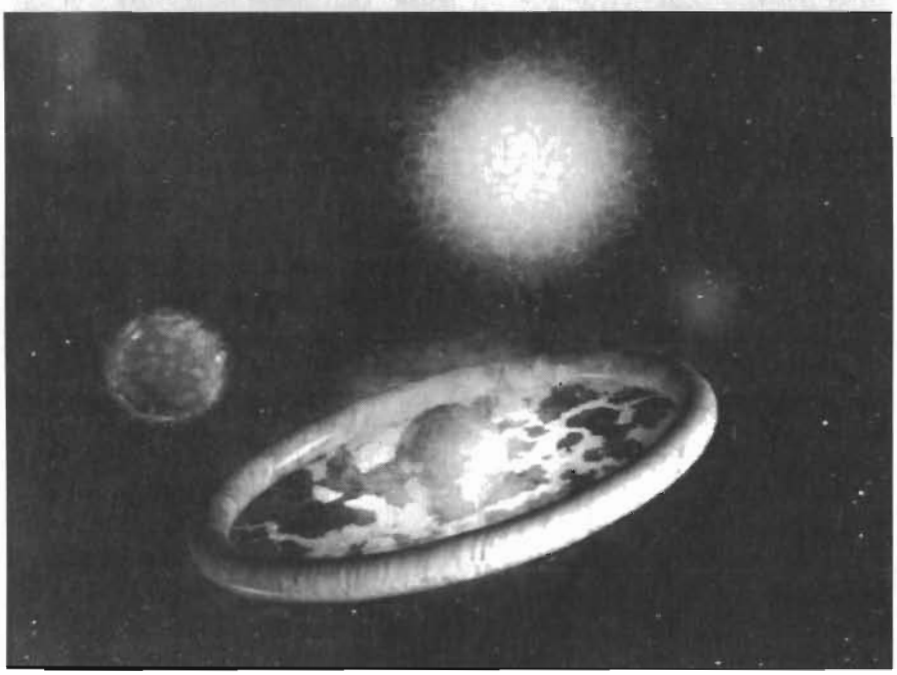
AVID: Why is this software now called Aladdin 4D instead of Draw4D-Pro 2.0?

GG: The names Draw4D and Draw4D-Pro imply drawing software. Aladdin 4D is rendering software. We simply needed a name that fit the product. It is also a little like Aladdin's lamp. Many of the animations you can make with it seem like magic.

AVID: What can Aladdin 4D do that your competitors can't touch, and why is this important?

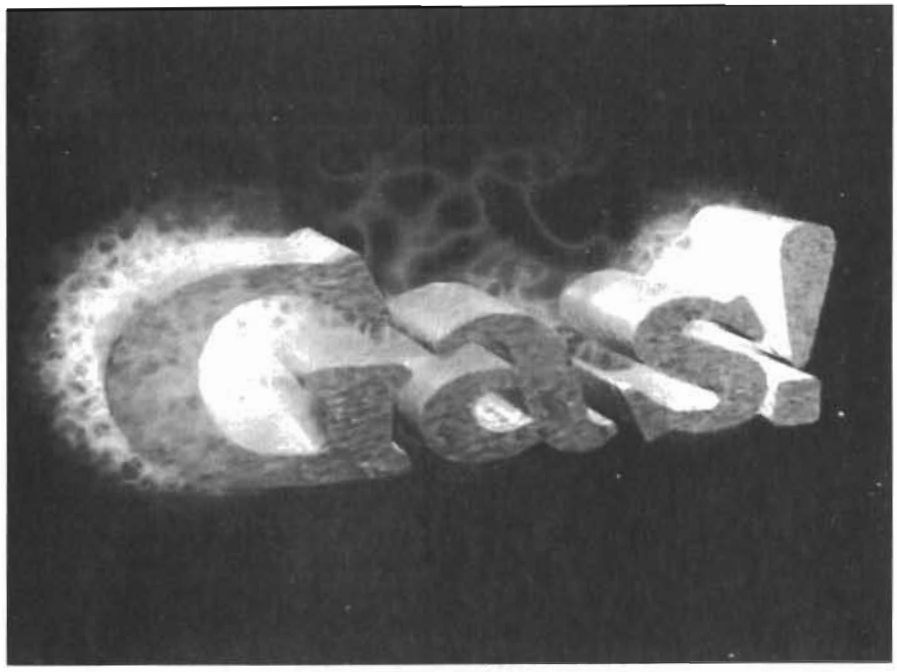
GG: This one is simple! Aladdin 4D allows its user to be creative! Can I be candid? The other 3D packages available seem to have been written as though they are a set of solutions to specific problems. The engineering attitudes are everywhere. Other packages were written to present the user with a working environment to create objects, and a set of developed solutions to color/texture them. Voila! The user's creativity has just been smashed.

Any view of reality that a particular user may have must fit in the view of reality the software presents. When you see images from any of the other 3D software, you can tell which software the images came from. The software's solution to the problem of representing reality overwhelms the creativity of any user whose view of reality is even slightly different. Well, true creativity is by its nature, if not by definition, somewhat different from that of the general public. Aladdin 4D addresses these differences! You can use the software, not only to present a realistic, popular view of reality, but many much more individualistic views. The result is that when you see images from Aladdin 4D, you see much more of the artistic intent of the individual using the software.



This was achieved by allowing unlimited options, many of which are not available in any other packages. For instance, the other packages allow a background/foreground. But Aladdin 4D also allows an overlay along with inline tinting, which can be used as an overall texture to the work and as an aid in integrating disparate elements. The other packages allow you to set an object's attributes. Aladdin 4D allows you to set attributes in the form of a list with each member having entry/exit values. You can literally turn lead to gold during an animation. The others allow you to assign a procedural or a bitmap texture to an object. Aladdin 4D allows you to composite any number of textures onto an object, mix procedurals and bitmaps, use animations as textures, and establish the amount of color and strength of each. Not only this, but the amount of the individual textures can change during the animation, allowing them to fade in/out in an unlimited exchange of information. By the way, the background, foreground and overlay use the same type of list so they can use multiple textures, composite images, and change over time as well. We took a similar approach to our procedural textures. They can change the number of colors, strengths, blends between colors, spacing, turbulence, and on and on.

The others allow you to create waves on the surface of objects, but Aladdin 4D allows you to create a WaveSource that can fly through space influencing polygons that are sensitive to it! (That's never been done anywhere before!) You can set multiple wave sources for a single



WaveSource for beautiful interference patterns, and even recreate expanding rings of waves like a stone makes when it falls into water.

Another unique feature that stands out is the Encapsulated Postscript load. You can draw in ProVector or Professional Draw (or even a program from another platform) then output the drawing as an EPS file, and Aladdin 4D will load it. Aladdin 4D will also load the digital elevation maps of Scenery Animator! The Grand Canyon looks bizarre when mapped in a composite of wood and marble with a bump map of a dollar bill, a spray of procedurals placed as decals, and on and on.

There are many other features that the others can't touch, but the most obvious is probably the "gaseous objects". I can't contrast our implementation with theirs, because no other package, not even the most expensive platforms around, does them! They aren't even an "object" per say, but a modification of the density of space. When you ask for a gas, you get a container. The gases are full featured, can be animated, change and vary color and turbulence, and can even be sculpted with bitmaps! We are the first to introduce this technique to any personal computer 3D package, and it is the feature I'm most proud of technically.

AVID: Can Aladdin 4D handle all of the other expected rendering options as well?

GG: Yes, with the exception of full environment reflection. For that you need a ray-tracer, or multiple renders of environment maps. We do allow reflection maps, so the exception is probably moot. We allow shadows in Aladdin 4D, but they are ray traced with the obvious time penalty.

AVID: How about Aladdin 4D's rendering times?

GG: This is one of the most important aspects of a 3D renderer to me. As a creative user, I need fast feedback on the scene I'm working on. Aladdin has the fastest feedback available for a program of its type. Others only show a little window with a percentage report of completion. You may wait an hour or more to see that you set the color of the lights wrong, or chose the wrong texture, etc. Aladdin 4D shows the work in progress in a scanline fashion. You know very quickly a lot of information about the settings. You can also set small screen sizes, down to 32x20 for super fast feedback before the final render. The final render is usually in 768x482 video format in 24 bit, and if you have a FireCracker, you can even watch this scanline! Of course, the DCTV support is also immediate, and great for animation in particular. Render times for the full video format average about 5 to 20 minutes per frame without shadows, depending on the features in use.

GG: Aladdin has a suggested retail (about $460.00) that falls in range with the others (the upgrade fee for current registered owners will be about $100). The actual street price we have very little control over, and it will probably be about the same as the others, but feature for dollar, there is really no comparison. Especially since there are many features that don't even exist in the others.

AVID: How did you approach the concept and design of a software manual for Aladdin 4D?

GG: 3D software is by its nature more complex than, say, a 2D painting package. Add to this the almost unlimited variability of features permitted by Aladdin 4D, and you have a very large task on your hands writing the manual! We took the approach that the features should be concisely explained, with a minimum of chatter individually. We then use several tutorials that show their use. The individual references and tutorials are cross referenced. There is also a "quick start" section for those that have just purchased the program and want to see what it can do right away.

AVID: Does your experience as a college-level educator contribute anything special to your approach to your work?

GG: Probably the most useful experience I had during teaching was sheer diversity of students you work with. I don't think any two have the same well of information to draw on, or the same values and goals. For them to leave the classroom with any progress requires a constant reaction of the instructor to these differences. In Aladdin 4D, this is reflected in the extensive interaction of the features, to allow each of the attitudes of the users to be reflected in the images they create.

AVID: How do you feel and act concerning service as an aspect of your Amiga work and personal business ethic?

GG: For us this falls into the technical support area. I believe there is an obligation for us to try to help any registered user achieve his goals with our software. We do take as much time as

possible to do this and always treat our users with the courteous respect they deserve. Of course, the tech support lines can get busy, and so other users can reach us when they need to, we try to keep the calls to a necessary minimum of time. One of the ways we have tried to help here is through our subscription based newsletter "4DPro Master", which will be renamed "Aladdin's Lamp" because of the new product name. This is a user newsletter, not a sales flyer like most of the others! It is packed with useful hints, tips, and examples, many of which are contributed to the newsletter by users. It has been very well received, and is flourishing.

AVID: How do you feel about the future of the Amiga itself?

GG: Funny question! How do you feel about the future of a pencil? The Amiga is just a tool, like any PC. It is the casing for the pencil. The software is the lead you put in it. It will continue to do the task at hand up to the skill and creative level of its user years from now just as efficiently as it did when it was purchased. Of course, the Amiga is my personal favorite of the "pencils". If by its future, you mean its marketability, I think we are just seeing the first results of its impact. Until now it was purchased and used by relatively few, dedicated and knowledgeable users. It excelled in its abilities in video and animation. Now that the goal of the general user has caught up with its features, we should see the user base balloon and the Amiga become a mainstream and popular platform. I see the future of the Amiga as very rich, both in terms of sales, and the creations we see from it. My relationship with the Amiga has not been a journey of worry about whether I bought the right machine, but of learning and pleasure, and I think it will continue for many years.

AVID: How about Aladdin 4D's future? Is version 2.0 the "last word"?

GG: No! We view our software as a work in progress. It is never finished. There is always room for optimization of existing features, as well as the addition of new features. The 2.0 designation is picked up from Draw4D-Pro, and by the enormity of the features added, I can't wait to see what 3.0 is like! We usually take a short vacation on the completion of a major version release, then start work on the next. That's one reason that returning user cards is so important. We can keep our users informed of the current status of the program.

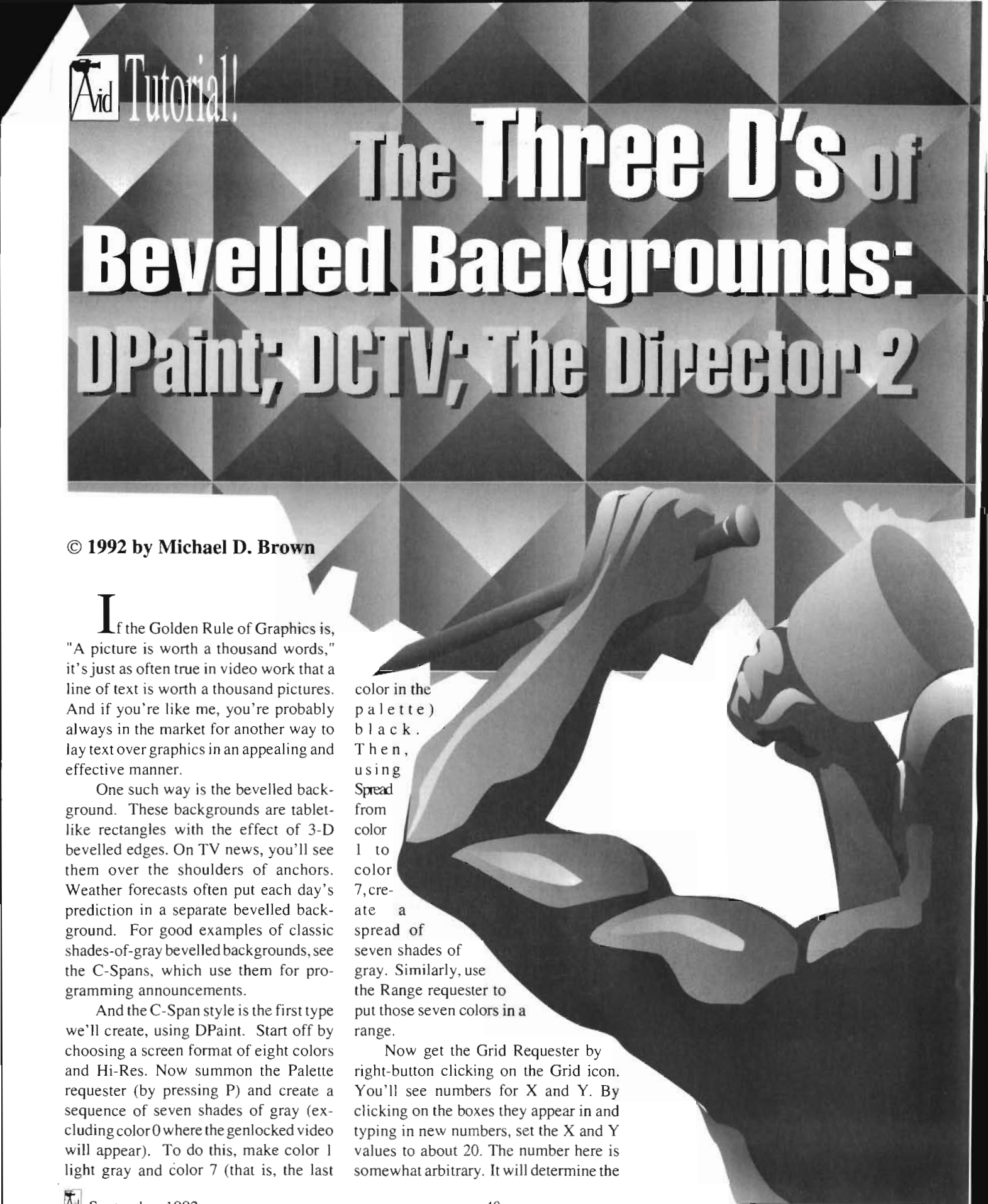
The Adspec Crew: (from left to right) Greg Gorby, Jody Paxson, Jason Gorby, Bev Gorby and Devon Graham

AVID: What final comments would you like to leave us with?

GG: I would like the AVID readers (and of course the Aladdin 4D users) to think about using their computers creatively. Remember that a fine artist usually works with a goal of "realism" only during his formative years. Those who survive into their most creative period generally remove themselves from simple imitation of reality and impose their own view of what's normal, their "normative abstraction" on the work. The result is a dramatic increase in the power of their work and the exposure of their individuality. Using computers creatively is still in the formative, reality simulation period, and just now beginning to emerge. When using Aladdin 4D, or any creative package for your Amiga, don't be afraid to portray a view of reality that is yours alone. Indeed, let this be part of your goal.

Avid Tutorial!

The Three D's of Bevelled Backgrounds: DPaint; DCTV; The Director 2



If the Golden Rule of Graphics is, "A picture is worth a thousand words," it's just as often true in video work that a line of text is worth a thousand pictures. And if you're like me, you're probably always in the market for another way to lay text over graphics in an appealing and effective manner.

One such way is the bevelled background. These backgrounds are tablet-like rectangles with the effect of 3-D bevelled edges. On TV news, you'll see them over the shoulders of anchors. Weather forecasts often put each day's prediction in a separate bevelled background. For good examples of classic shades-of-gray bevelled backgrounds, see the C-Spans, which use them for programming announcements.

And the C-Span style is the first type we'll create, using DPaint. Start off by choosing a screen format of eight colors and Hi-Res. Now summon the Palette requester (by pressing P) and create a sequence of seven shades of gray (excluding color 0 where the genlocked video will appear). To do this, make color 1 light gray and color 7 (that is, the last color in the palette) black. Then, using Spread from color 1 to color 7, create a spread of seven shades of gray. Similarly, use the Range requester to put those seven colors in a range.

Now get the Grid Requester by right-button clicking on the Grid icon. You'll see numbers for X and Y. By clicking on the boxes they appear in and typing in new numbers, set the X and Y values to about 20. The number here is somewhat arbitrary. It will determine the

size of the bevels. In general, the larger the overall rectangle, the larger should be the size of the bevels; however, it's so easy make these backgrounds that you can quickly experiment with different values and choose the one you like best.

With Grid and Straight Line turned on, you'll find that you are constrained to drawing only three kinds of lines: horizontal; vertical; diagonal. Happily, these are exactly what we need to create our background.

Press Shift-R for the filled rectangle tool. Draw two rectangles, one inside the other (see Figure 1). Grid makes drawing these, and the diagonal lines, foolproof. The only tricky part is choosing the right colors (if we don't, fill won't work as we want it to). Draw the big rectangle with color 6 and the rectangle inside it as color 5. Still with color 5, press V to change to the straight line tool, and draw the bottom two diagonal lines. Draw the top diagonal lines in color 3.

Now switch to Fill mode (by pressing F), and, using color 2, fill the top bevel. Fill the right bevel with color 3, the left one with color 4, and you're done, ready to type in your text.

If you want a shadow, (as in Figure 2), change to color 7 as the foreground color type your text off to the side of the background, and then pick it up as a brush.

Stamp it down on the face of the background where you want the shadow. By next selecting color 1 and pressing F2, you'll change the color of the text/brush. Stamp it down at an offset to the shadow. Remember to make the shadow of the text fall in a position consistent with the angle of "light" established by the shades of the bevelling, and you end up with a classy looking titling effect.

The Director 2 Automates It

But what if you want to skip all the steps above and crank out bevelled backgrounds automatically?

The Director 2 is a kind of video programming language for the Amiga. (For more information and some sample programs, go to your back issues of AVID and check out: Vol.2 #7 my review; Vol.3 #5 "Director2 Transitions"; Vol.3 #7 "Taming the Wild Animation File".) The

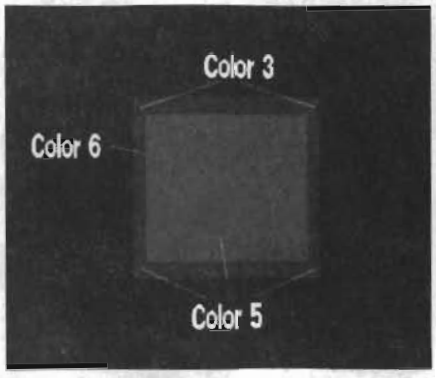


Figure 1

Director offers, in the form of commands, most of the basic painting tools of DPaint. So most of the things you do by hand in DPaint, can be done in a program in the Director. Only much faster and with perfect precision every time.

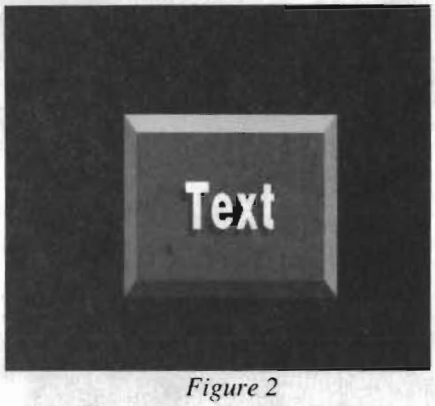


Figure 2

The listing on page 42 is a program which automates the background-drawing process we did by hand above. You don't have to understand how it all works. Just type it in and run it. When prompted, enter a line of text, then watch as The Director, in just a couple of seconds, draws a bevelled background and puts

Figure 3

your text in it, complete with shadow (Figure 3). Press a key and type in another line, and see the process all over again, or press the Esc key or left mouse button to end the program.

One note: if you want to use it for real video work, you'll of course want to choose a nice big font for your text. Do that by typing in the full path name of your chosen font inside the quotation marks in the "loadfont" line.

If you do take the time to figure out how the program works, you could easily modify it to move the background to a desired location (centering is the default now), change the colors of the background and the text, and so on. Even use colorfonts. And why stop there? If The Director can automate the things you're doing by hand on DPaint now, that might lead to all kinds of possible ideas for other video-related programs.

Digitized Bevels with DPaint

Back in DPaint again, let's try a different kind of bevelled background, one which begins with a digitized picture. The palette of your picture is once again critical. You must have a range of shades of one color as above, from light to dark. If your picture doesn't have such a palette, you'll have to remap it, using DPaint's Remap, or a picture processing program like Butcher.

The concept and practice of remapping is a little difficult to grasp at first, so I'll refer you to the manuals of your graphics programs to give you the idea. And the same goes for the Shade brush mode in DPaint, which we'll use to darken and lighten our picture. I won't go into detail here to explain Shade: AVID's DPaint expert, Doug Shannon, in his DPaint Tip's column, Vol. 3, issues 5-7, had an excellent tutorial on creating a bevelled background with an irregularly shaped edge. Issue #6 explains using Shade, so I'll refer you to that (or, if all else fails, your DPaint manual) for more info.

With our palette sorted out and a working understanding of what Shade does, it's easy to bevellize our image. Pick it up as a brush, making sure that the "handle" is precisely on one of the corners (use Magnify or Alt-X,Y,Z to help you do this). Now turn Grid on as we did above and stamp the brush down.

Director Script for Bevelled Backgrounds

```
new 640,400,4: REM Create a new screen.

;loadfont 1,"dh0:zumafonts/swiss/50": REM Change these lines to...
;setfont 1: REM ...load the font of your choice.
;fontht = 50: REM Change this number to the height of your font.
fontht = 20: REM Then delete this default line.

dim usertext[61]: REM Array for the text to be typed in.
REM Set color values:
facecolor = 12: shadowcolor = 14: textcolor = 9
darkest = 15: ubevel = 11: rbevel = 13: lbevel = 14
dbevel = 15: uledge = 12: uredge = 12: ldedge = 14: lredge = 14
for ct = 1 to 5: REM Set colors 11-15 to shades of gray.
     color ct+10,15-(ct*2),15-(ct*2),15-(ct*2)
next
color textcolor,5,5,12: REM Set RGB of the text color.
hi = fontht + (fontht/2) + 10: REM Set the height.
/startloop:
     move 10,fontht*2
     pen 1,textcolor
     drawmode 1
     text "Text:"
     move 10,fontht*3
     input usertext$,60
     textlength wid,usertext$: REM Set the width.
     wid = wid + 30
     ulx = 320-(wid/2): REM Center the starting coordinates.
     uly = 200-(hi/2)
     clear
     gosub drawbevel
     drawmode 0
     move ulx+(bevel/2),uly+(bevel/2)+fontht+3: REM Shadow's offset is 3.
     pen 1,shadowcolor
     text usertext$: REM Display the shadow.
     move ulx+(bevel/2)+3,uly+(bevel/2)+fontht
     pen 1,textcolor
     text usertext$: REM Display the text.
     getkey action
     if action = 27 then end: REM Esc key exits.
     clear
     wid = 0
goto startloop

/drawbevel: REM This draws the background.
bevel = wid/12
if bevel < 5 then bevel = 5
if bevel > 20 then bevel = 20
pen 1,darkest
rect ulx-bevel,uly-bevel,ulx+wid+bevel,uly+hi+bevel: REM Big rectangle.
pen 1,facecolor
rect ulx,uly,ulx+wid,uly+hi: REM Small rectangle inside it.
pen 1,uledge
move ulx,uly: draw ulx-bevel,uly-bevel
pen 1,uredge
move ulx+wid,uly: draw ulx+wid+bevel,uly-bevel
pen ldedge
move ulx,uly+hi: draw ulx-bevel,uly+hi+bevel
pen lredge
move ulx+wid,uly+hi: draw ulx+wid+bevel,uly+hi+bevel
pen 1,ubevel: fill ulx,uly-1
pen 1,lbevel: fill ulx-1,uly
pen 1,rbevel: fill ulx+wid+1,uly
pen 1,dbevel: fill ulx,uly+hi+1
return
```

Now we know that two sides of our brush/background are exactly on grid lines. Get the other two edges on grid lines by using the rectangular brush pick up with the right mouse button to "crop" the edges. Rectangular fill with the background color can accomplish the same thing, i.e. getting all four sides of our brush right on grid lines.

Now, with Grid still on, simply press B twice (for irregular-shaped brush) and pick up the four bevels. In Figure 4, I've left those brushes stamped down on each side of the background to show you what I mean. Use Shade mode (F5) to stamp on, and consequently lighten/darken, the sides of the background to suit you. That's all there is to it.

DCTV Does Bevelled Backgrounds

If you're like me, you probably find the Amiga's Hi-Res limit of sixteen colors kind of restricting. Moving from DPaint to DCTV Paint gives us literally a million times more colors.

How do we take advantage of this plethora of chromatic potential in our quest for better bevelled backgrounds? Well, we'll start out very simply by using one color. Pick out any one you like, select the Rectangle tool and draw two unfilled rectangles, one inside the other. Now select Straight Line drawing and draw diagonal lines to connect the corners of the two rectangles, much the way we did in DPaint.

What we've drawn so far is only to be used as a guide. We won't be working for the geometrical precision we did in DPaint, but rather getting a little wild and crazy with the creative possibilities of our sixteen million colors.

Now let's draw some filled polygons with the straight line tool. Sounds kind of wacky, but, when Draw Filled (that little half full box with the arrow sticking out of the side) is selected, clicking on Straight Line lets you draw filled polygons. Just click at one corner, continue clicking on corners and double-click to fill and finish the polygon.

Use this method, and our guide rectangles, while selecting the appropriate colors from a group of the stock ones, or from colors you've created, to make the

Figure 4

face and bevels of a background. The finished product should look a lot like the one we created with DPaint.

The real fun starts when, instead of using solid fill, we choose gradient fill. By changing the gradient range of colors (darker for the bottom, lighter for the top, etc.) used for each facet of our background, impressively realistic images can be created. Try using radial/gradient fill to put a bright spot on the face of the background, just as if from a key light. The possibilities of DCTV's numerous fill options combined with the infinite color and gradient combinations can yield some spectacular and varied results. Experiment!

Shades of DCTV

The last stop on our tour of the multifaceted world of bevelled backgrounds is using digitized images in DCTV. I'll assume some familiarity with DCTV Paint commands, especially: Clips (what DPaint calls "brushes"); Draw Filled mode (as above); Flow Rate.

The process of converting a digitized clip into a bevelled background is remarkably easy. We'll use Shade, the effect of which is much like that of the Shade (F5) brush mode in DPaint. The big difference is that in DCTV Paint, Shade affects the area under drawing tools; while in DPaint, you shade things under brushes. Beyond that, all you need to know is how to: select a color; set flow; draw filled polygons and rectangles (in the same way we did above). If you don't, brush up on them in your DCTV manual.

Start out by selecting a light color, such as white. The value of the color, along with the Flow Rate, will determine the degree and direction (light or dark) of shading. Set flow to about twelve. Now, with Shade selected, draw a Filled Rectangle where you want the flat face of the background to be.

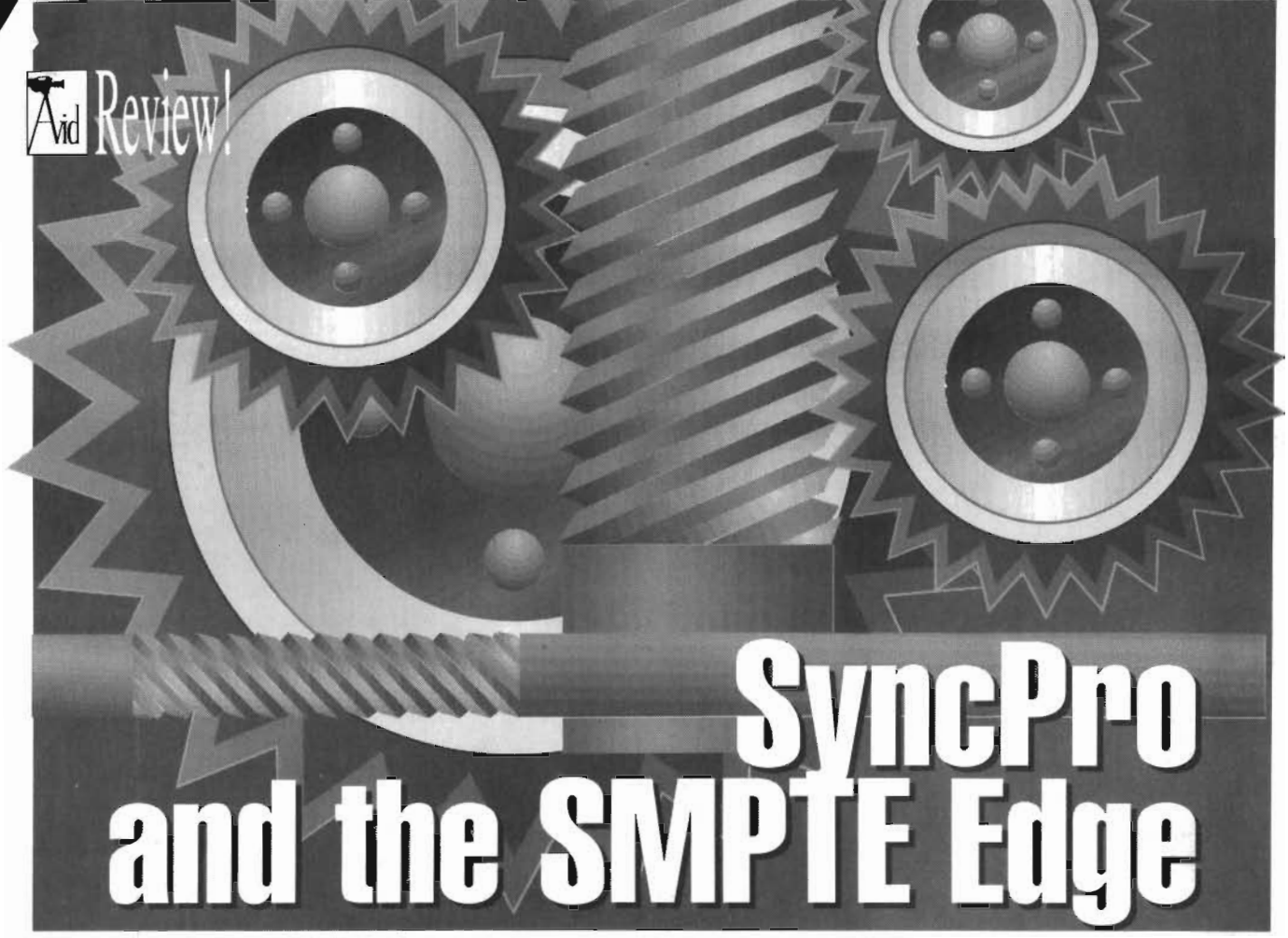
If you've selected the proper color, flow rate, and drawing options, you'll see the area you shaded become slightly lighter. Now select Filled Straight Line (i.e. filled polygon, as above), and increase the flow rate to about twenty. Draw a filled polygon on top of your clip as the right bevel.

Turn the flow up to 30 and draw a polygon as the top bevel.

Now select a dark color, like black. Draw a polygon as the bottom bevel. Now turn the flow down to twenty and draw the left bevel. And you're finished.

Once you get the hang of them, these digitized/bevelled backgrounds are so fast and easy to do, and yet so impressive, that you're sure to find lots of uses for them in your productions. A simple example would be to digitze highlights from several scenes, convert them to reduced size clips, bevellize them and use three or four together on a page as backgrounds for credits.

And remember, DCTV images can be loaded into and used by both DPaint and The Director. So the possibilities are truly unlimited. Treat the techniques described here as a jumping off point, and let your creativity and imagination be your guide to making your own bevelled backgrounds.



SyncPro and the SMPTE Edge

If you were with us in the last issue, you know that I reported on the AD1012 hard disk recording system for the Amiga from SunRize Industries. During my testing of the AD1012, I used SyncPro, the new $200 synchronization box from Blue Ribbon SoundWorks to control the AD1012 in a variety of audio-for-video applications. This month we'll examine SyncPro in much closer detail, and we'll look at some of the practical applications of SMPTE time code in the creation and production of sound and music for video. If you're not sure what SMPTE is, read on for a real education. SyncPro is a universal synchronization interface which reads and writes either SMPTE or MIDI Time Code to tape. SyncPro communicates with the Amiga through the use of MIDI Time Code to provide flexible, accurate, and highly reliable synchronization.

Designed to be operated directly from within the Bars and Pipes Professional or SuperJam! program environment, SyncPro also functions well with any other music or multi-media programs that can be controlled by MIDI timing information. It can trigger the playback of MIDI sequences and sound samples with rock-solid, frame-accurate synchronization, making SyncPro an indispensible tool for anyone who produces audio for video. And, through the use of ARexx scripts, MIDI events can be easily designated as controllers in any number of graphic and multi-media programs, all under SMPTE timing.

Hooking It Up

The physical hookup of SyncPro is easy. (It does, however, require the use of a MIDI interface, which plugs into the serial port of the Amiga.) The unit has two five-pin DIN connectors for MIDI In and Out, which are normally connected to the Amiga's MIDI interface. (In a typical MIDI system setup, the master keyboard could be plugged into the SyncPro MIDI input, and the unit set to merge incoming MIDI messages and SMPTE timing data.) Two 1/4" phone jacks labelled Audio Out and In are connected to the audio In and Out of one track on your tape deck. These are used to read and write the SMPTE signal which contains the timing data. SyncPro produces the SMPTE timecode in the form of an audible tone, which is first recorded on one audio track of your video (or audio) recorder. This audio track is then used as the timing reference for the control of your Amiga, or of any other audio or video machinery which utilizes the SMPTE standard. The unit also has LED indicators which show when MIDI data or SMPTE timing information is being sent or received by SyncPro. It also has a single button for manual initiation of the writing of timecode to tape. SyncPro can also duplicate a SMPTE or MIDI sync signal—that is, it can read a sync tone from one source as it writes the sync

signal to another recorder. This function, combined with SyncPro's "JAM" sync feature, can be *crucial* in the case of a SMPTE signal which might contain drop-outs or other SMPTE errors. (These types of errors are usually caused by damage to a recorded Sync stripe.)

SyncPro can read and write all formats of SMPTE timecode. You can select 24, 25, 30, or 29.97 frames per second (otherwise known as Drop-Frame) via several small DIP switches on the front of the unit. SyncPro utilizes Linear Time Code (LTC), which requires that the tape be moving in order for the timecode to be read. If you fast-forward or rewind the tape, and then begin to play again, as soon as the SMPTE timing information is read from the tape, the computer "chases" and then locks to the current SMPTE time. SyncPro is also capable of producing MIDI Time Code (with Smart Song Pointer Sync and Song Position Pointer information), so it can be used with other music software products which utilize MIDI Time Code, but do not support the SMPTE standard. This allows virtually any Amiga music software to be synchronized with frame accuracy to a video source. (But for the purposes of this article, we'll be using SMPTE time code exclusively, recorded at 30 frames per second, in conjunction with Bars and Pipes Professional.)

The SyncPro Software

SyncPro is supplied with controlling software in the form of an Accessory which easily installs into either the Bars and Pipes Professional or SuperJam! program environment. As with any other of the Tools and Accessories used in the Bars and Pipes Professional format, the SyncPro Accessory must first be copied to the directory which contains all of your current Accessories. Then it can be loaded into the program so it can be accessed for control within B&P Pro. Upon double-clicking the SyncPro icon, you are presented with a small window which holds a readout of the current SMPTE time, and three buttons: Activate, Run Lock, and Stripe.

The first step in the use of SMPTE Time Code is the process of recording the SMPTE time code on your videotape. If you're planning to use the SMPTE code to assist in your video editing, either manually in the creation and execution of edit decisions, or with automated SMPTE-compatible video equipment, then you should probably stripe the entire audio track of your videotape. This SMPTE striping process can be started from within Bars and Pipes Professional with a specified SMPTE offset, or manually by using the Write button on the SyncPro device, with a zero offset. (SMPTE offset represents the time reference setting in Hours, Minutes, Seconds, and Frames. This time can either be written to tape, or it can specify a point at which playback of a sequence or sound cue should begin. A SMPTE offset time allows access to any specific location on the tape, whether you are writing or reading from tape.)

When writing a SMPTE stripe to tape, it's always a good idea to mute all tracks of your sequencer in order to attain the greatest possible timing accuracy. *Do not attempt* to record your audio tracks at the same time your stripe is being laid down. Otherwise, MIDI data which is being transmitted through the SyncPro might "clog" the MIDI data stream, and thereby cause timing inaccuracies to occur. *After* the stripe is laid down you're free to add your audio tracks with positive frame synchronization.

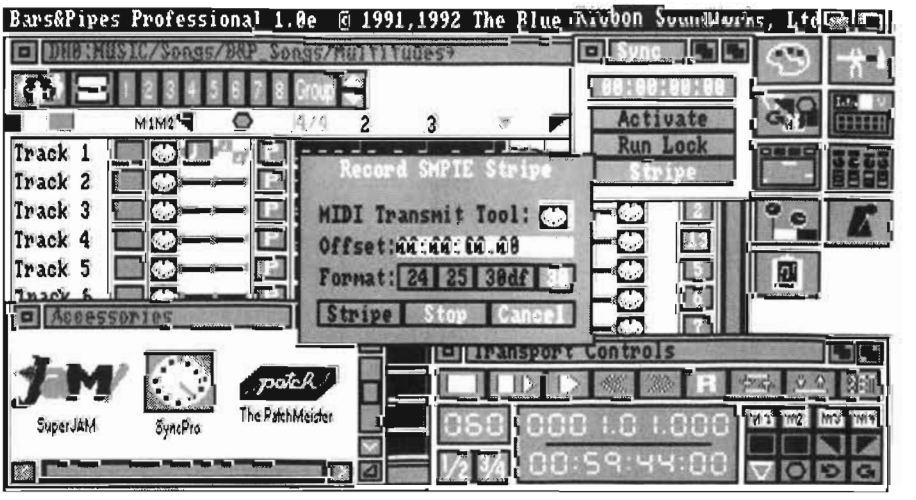
After recording the SMPTE stripe, this track is then fed back into the SyncPro, and is used to control the playback of music sequences. These sequences can access the Amiga's internal sound circuitry, allowing the synchronized playback of custom sound samples, along with any other external MIDI sound equipment. Sound effects, music and dialogue can be assembled, sequenced and reproduced to create a seamless soundscore, all with SMPTE timing control. In the case of the AD1012, and the new AD516 sound cards, CD quality sounds can be played back directly from your hard disk, all in perfect synchronization with a video source.

Bars and Pipes Professional gives you an accurate reading of your exact SMPTE location in the Transport window. By using an Amiga sound sampler, sound effects can be recorded directly into your Amiga. These can be saved as IFF-8SVX instruments, which can be used within a music sequence just like any other music instrument samples. This makes the placement of sound cues particularly easy and accurate.

Real-Life Applications

In my own work, I've frequently collaborated with a video producer in Texas, named John Walker, on a wide variety of projects ranging from a series of thirty-second television commercials and public service announcements, to full-length documentaries and tutorial and instructional tapes. Our normal procedure goes something like this: After drawing up a basic outline for the necessary video and audio components, he gathers all of his required video footage and rough audio for the project. Sometimes that material comes from live location settings, or it may be staged in his Dallas studio. After careful review, John then takes this material (which is normally shot on Hi-8 or 3/4" videotape) into an editing suite in Dallas, where all of his video is edited into its final form. He then adds a SMPTE stripe to one of the tape's audio tracks, and makes a dub of the tape with a "window burn." (A window burn is a superimposed visual readout of the SMPTE time, over the normal video images.) This provides a means of reference for any audio special effects, and for the precise timing and placement of music cues. In the past, this window burn was the only reference I had for composing music and effects, and the entire process was rather a hit and miss situation. We could watch the video (with the SMPTE readout) in slow motion repeatedly, taking careful notes for the composition and placement of the necessary audio cues. Then, by calculating the "hit points," I could compose, and then lay down my soundtrack to within a few frames of accuracy. The resulting soundtrack was then recorded to digital audio tape and given back to John, so he could return to the editing suite to lay the audio track back over onto his video master.

That's how we worked in the past. Now, with SyncPro, things are a little different. When John brings his edited dub, complete with the SMPTE stripe on the audio track of the videotape, I'll can lock my sequencer to the actual timecode he has laid down. This will give us *true frame-accurate* editing of sound to video. The SMPTE signal from his videotape can be fed into the SyncPro, which can in turn duplicate that SMPTE signal onto my digital audio tape. The audio tracks can then be recorded to this tape, complete with the new SMPTE signal. Then, when John takes this tape back to the editing suite, he needs only to lock the editing system to the SMPTE stripe I've



recorded from SyncPro onto my audio master. No more hit and miss editing!

A Few Criticisms

On the downside, my only criticisms of SyncPro are these: the unit requires that a MIDI interface be used on the Amiga, rather than plugging directly into the serial port. Also, SyncPro is powered by an external transformer. If your studio is anything like mine, the last thing you need is another AC/DC power supply, and another four feet of cable to add to the snake spaghetti! Although the manual states that the SMPTE offset numbers should advance as a stripe is being written to tape (thereby giving you an accurate measurement of elapsed time), I could not get that function to operate from within Bars and Pipes Pro. While the stripe was being written to tape, the offset counter flickered continuously, but would not display the current SMPTE time until the striping process was stopped. Though it was just a minor inconvenience, as the SMPTE offset should have shown how much SMPTE timecode had been recorded, it was a slight software malfunction nonetheless. (Blue Ribbon's excellent technical support service was as puzzled as I was with the problem, and assured me that they would get back in touch to resolve the problem as soon as possible. Unfortunately, the programmer was out of town and could not be reached before my deadline for this article). Aside from that minor problem, the SyncPro unit functions flawlessly, and in fact, it's one device that I will be using extensively in a number of upcoming soundscore projects!

And as an update to last month's review, this week I received promotional material on SunRize Industries' AD516, the long-awaited 16-bit stereo sound card and hard disk recording and editing system for the Amiga. The AD516 is also accompanied by a new software package which will facilitate *eight* virtual audio tracks, real time audio effects, and the ability to simultaneously access multiple hard drives within the same Amiga. It can be controlled by the SMPTE-LTC format, or triggered by MIDI events. According to Susan at SunRize, the first production run, due to ship August 15, was entirely pre-sold, primarily to users of the AD1012 card who upgraded to the new 16 bit board. (SunRize has an extremely good upgrade offer for purchasers of the AD1012 who want to move up to the AD516.) The AD516 should be appearing at your favorite Amiga dealers about the time you read this...

That's It For Now

Next month, I'm planning on examining some of the software tools available which can greatly facilitate the composition of original music and sound scores by non-musicians. I know from the response I've been getting for the M, Synthia Professional, Bars and Pipes, and B&P Pro demo disks, that there are lots of Amiga video producers out there with the interest, but not the musical experience, who will surely want to tune in for that! I'll repeat that offer for new AVID readers. If you will send me four 3.5 inch disks, along with the necessary postage, I'll provide those demo programs to you free of charge.

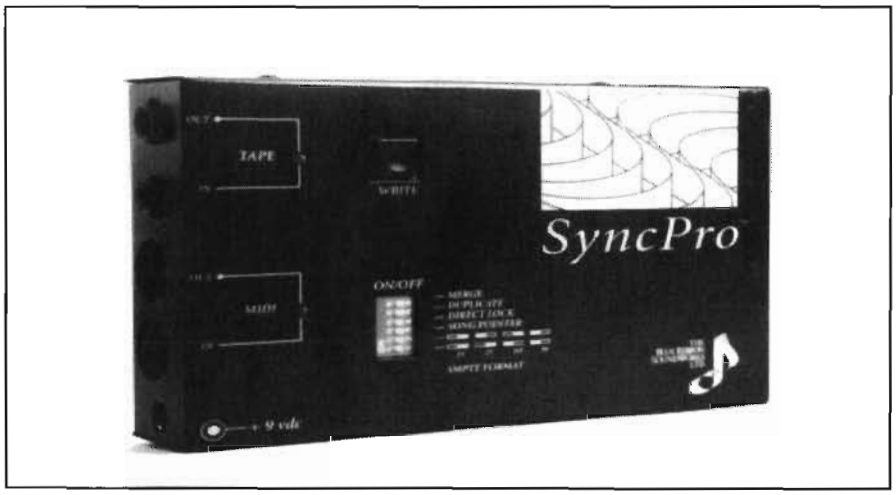
AD1012, AD516, and Studio 16 are from:

SunRize Industries
2939 South Winchester Blvd
Suite 204
Campbell, CA, 95008
(408) 374-4962

SyncPro, SuperJam! and Bars & Pipes Professional are distributed by:

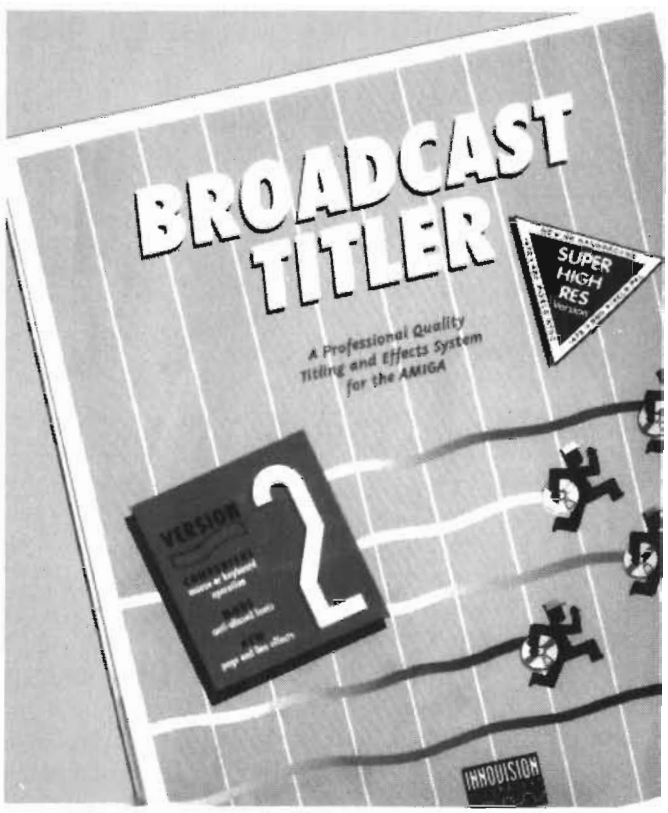
The Blue Ribbon Soundworks, Ltd.
1293 Briardale Lane NE
Atlanta, GA 30306
(404) 377-1514

Jaxon Crow has recently released his first tutorial videotape on producing Sound for Video projects entitled Amiga Music For Video, Volume One. Jaxon can be reached for questions or consultation at: Neon Tetra Productions, P.O. Box 876, Hot Springs National Park, AR 71902, (501) 321-1198. Please call or write for a free catalog of our audio and video tapes. Remember, register and vote!!!



Review!

Broadcast Titler Hi-Res



I have used Innovision Technology's Titling packages since the very first incarnation; Broadcast Titler, and then Broadcast Titler 2, the features of which have been covered in great detail in previous issues of AVID (June 1991, page 24 and September 1991, page 28). The announcement of the Hi-Res version of BT2 which promises true 35 nanosecond (ns) resolution had me quite anxious to see the results, but before I could do anything I had to upgrade my A2000 with the latest version of Commodore's Super Denise chip. Since this involves getting at the motherboard, and in my particular studio setup moving the computer is quite an elaborate procedure, I also decided to install the MegAChip 2000 34upgrade to gain the advantages of two megs of available chip RAM. Let me state at this point that although having more chip RAM available may come as an advantage for those systems that are short on expansion memory, the two meg Agnus chip is not required to use BT2, but the new super Denise is a necessity. This task was easier than I originally anticipated, with the MegAChip instructions and appropriate chip puller tool in hand, I was able to complete the upgrade in less than 20 minutes. It made me wonder why I had waited so long, and getting the new version of BT2 Hi-Res was the perfect incentive.

What's All The Fuss About 35ns Anyway?

For years the Amiga has been regarded as something less than adequate when compared to stand-alone title boxes from Chyron, Dubner, Laird and others. The primary reason has been the effective screen resolution of the fonts when displayed over genlocked backgrounds. In the realm of the broadcast world, resolution is gauged in terms of nanoseconds, and the most that the Amiga could render was 70ns or so. With the extra graphics horsepower of the new Denise chip, which is unique to the Amiga, it is now possible to double this resolution, but up until now there have been no software titles to take advantage of this. In the past, Broadcast Titler (and other packages) used proprietary dithering routines and custom internal fonts to smooth out the jagged edges which were especially apparent on diagonal lines and curved edges. Although these techniques give the fonts a smoother look, the sharpness of the fonts displayed by the high-end broadcast boxes is really never achieved because of all the adjacent color dithering (antialiasing) that is used to smooth the edges.

One of the new features of this version of BT2 is the ability to display both the original and Hi-Res fonts on the same page. When you first install the upgrade you are given the opportunity to load these new 35ns versions of the existing fonts that come as part of the original version of BT2. I chose to install all of them and then also loaded the corresponding standard BT2 fonts to use for a comparison on the same page. To my surprise, the differences appeared to be only slight. A quick phone call to Innovision Technology soon assuaged my growing confusion as it was explained to me that the major enhancements could best be seen when using the smaller font sizes. Any size under 50 scanlines high will show the most dramatic improvement, which is quite noticeable indeed when viewing both types of fonts on the same page.

The apparent lack of dramatic im-

provement in the larger font sizes is due in no small part to the antialiasing routines that BT2 uses on its original font format. In a way, Innovision Technology is a victim of its previous success in at least creating the illusion of 35ns resolution in the original BT2 fonts. What is really amazing is that by using the antialiasing feature on the 35ns fonts you get an effective resolution of 17ns, which is in the resolution standards of the highest of the high-end stand-alone title machines used at the network level.

Other Changes

There are two new page transitions; Shuffle Up and Shuffle Down, both of which "pull" a new page from behind the current one being displayed, then "shuffle" it over the previous page. There are no line effects available while using the Super Hi-Res mode, and there are fewer colors available for face colors (three as opposed to four) and you cannot use face patterns on the Super Hi-Res fonts. Your choice of page effects is somewhat limited when mixing the two resolutions on the same page or using Super Hi-Res fonts exclusively. There are many more available when using Super Hi-Res mode exclusively than with mixed types on the same page. Flash and color cycling are not supported any time there are Super Hi-Res fonts on the page.

All functions that were available in previous versions of the software will operate when you select the standard Hi-Res mode. The use of IFF images in the new Super Hi-Res mode requires some special handling. First, to adjust the image's aspect ratio you will need to double its width before loading it into BT2 Hi-Res screens. There will also be a loss of colors available for the palette of your IFF picture (4 as opposed to 16 in the standard Hi-Res mode). This restriction also affects any BT2 Super Hi-Res screens you wish to save as IFF pictures. At this time, saving IFF screens that contain both Hi-Res and Super Hi-Res fonts is not supported. However, you can now save any BT2 screen with exclusively one font resolution with the antialiasing intact.

Some annoying bugs were fixed from previous versions, and you can now select an option to enable a "Shuttle Safeguard" feature which prevents your software from locking up when shuttling tape at high speeds. There are two Hi-Res fonts which include a full set of international accent characters. Additional font packages which contain the international accents are available from Innovision. When you receive the upgrade to BT2 Hi-Res you get two disks plus addendum pages for your existing manual (if upgrading from an earlier version of BT2).

BT2 Hi-Res runs on Amiga 500/600/2000/2500/3000 computers with the ECS Super Denise chip,1 meg of chip RAM or greater and at least 1.5 meg total RAM. It is fully compatible with AmigaDos 1.3 & 2.04 and higher. It can run from floppy drives or be installed on your system's hard drive. The cost to upgrade from previous versions of Broadcast Titler 2 is $99, and full price for the Super Hi-Res version is $499.95.

Innovision Technology
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Phone (510) 638-8432

Review!

De-Mystifying Digital Creations' RGB Converter

(Editor's Note: In case you're new to the Amiga, DCTV is a low-cost hardware/software product for all Amiga computers that allows display and capture of 24-bit images with millions of colors, plus a powerful paint program. Until recently DCTV has worked only with composite video signals.)

There has been a lot of talk, speculation and misinformation regarding Digital Creations' RGB converter for DCTV. In fact, it is a simple external device that, as stated in the manual, "takes the composite video signal from the DCTV and inserts it into the stream of RGB data." By using this conversion process it then becomes possible to use DCTV images with any destination device such as a genlock, RGB monitor, encoder, etc. The following review discusses in detail the various applications with which it can be used, along with an evaluation based on its price, features and performance. The RGB Converter was evaluated with three systems; a standard Amiga 2000, a 3000, and a Video Toaster Workstation. All were tested with standard Amiga RGB monitors.

Out Of The Box

The sturdy palm-sized device sports the familiar DCTV wedge logo with two knobs at the top for Tint and Key Level. On the bottom of the unit is a 23 pin RGB double-sided connector with male on the front and female on the back. In addition this are two screws which are used to secure the unit to the DCTV pass-thru connector.

Ignition!

Connecting the RGB converter in its most basic configuration requires securing the RGB converter to the back of the DCTV's RGB pass-thru via its 23-pin double sided connector, brass wood screw and hold down screw. After this procedure, simply connecting your Amiga's RGB cable to the back of the RGB converter allows the signal from DCTV to be displayed on your RGB monitor. If you already own a genlock with an RGB pass-through, connecting the genlock to the RGB converter and then plugging in the Amiga RGB cable into the genlock RGB pass-thru will get you both genlocked in addition to allowing the DCTV's signal to be displayed on your Amiga RGB monitor. This second configuration is definitely the best of both worlds. The most obvious advantage of using the converter with a genlock is of course being able to use prerecorded, computer, or live video behind DCTV imagery. Another possibility for instance would be to take the RGB out of the genlock and connect it directly into a video switcher equipped with RGB inputs. Any number of destination devices can be used in conjunction with the RGB converter. The main limitation is not the RGB converter itself but rather the amount of power that the Amiga RGB port can handle.

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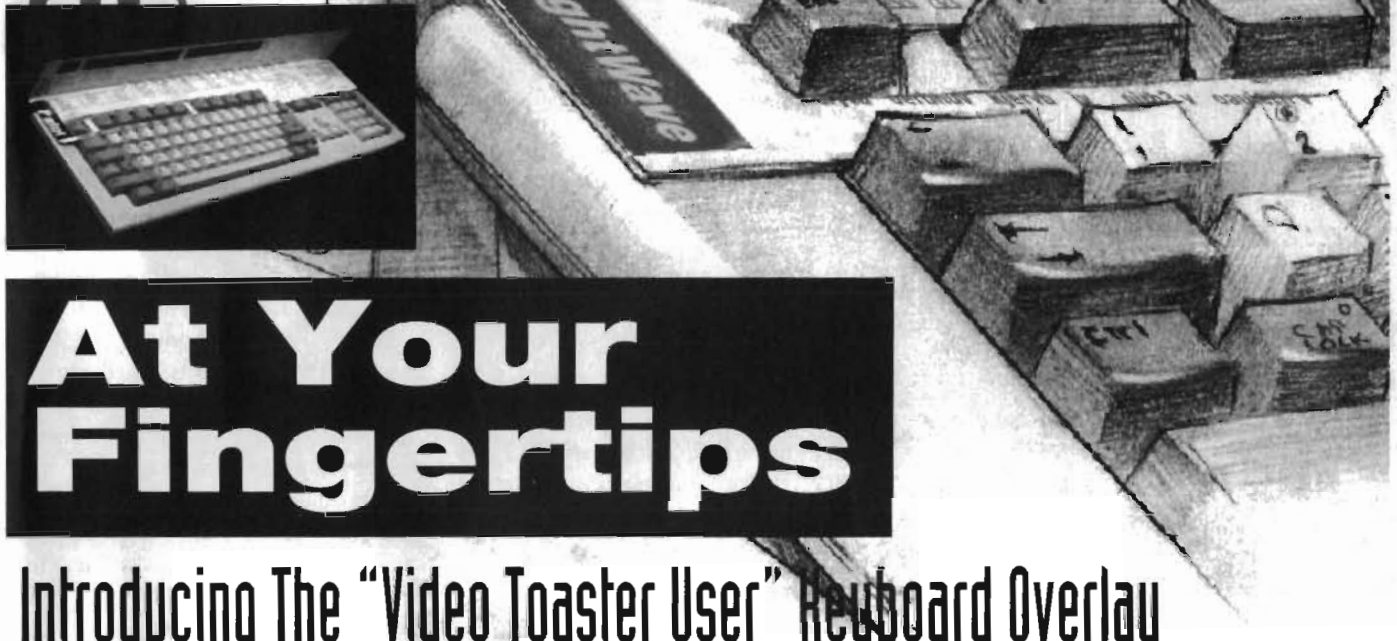

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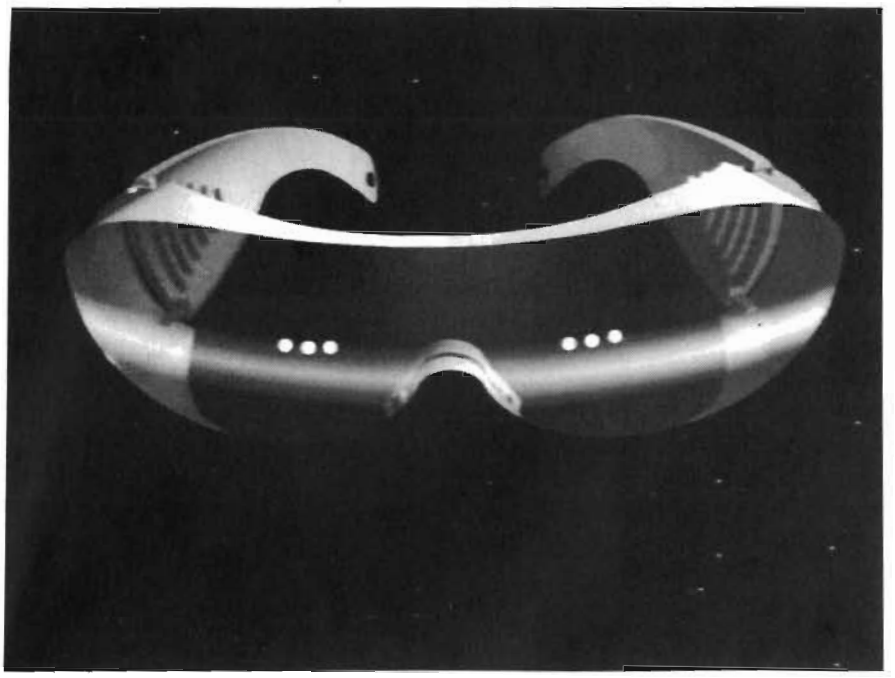

Seeing Is Believing

DCTV is a powerful addition to any Amiga system. Aside from its unique paint program it has the ability to play 3D animations created from Draw 4D Pro, Imagine, or Lightwave 3D directly from the Amiga system in real time via DCTV's high-resolution composite output. I have used DCTV's output in my work at Joe Robbie Stadium in Miami, displayed on our 40 foot Sony JumboTrons and have achieved excellent results. I can tell you first hand that images blown up to this size have a tendency to fall apart. With DCTV the images on the JumboTrons held up well.

My main gripe with DCTV right from the beginning was the way the paint interface looked on my Amiga RGB monitor. For those of you who are not familiar with the problem, the RGB side of the DCTV paint program has this tendency to look ghosted, and when using Deluxe Paint IV for editing it is very difficult if not impossible to read requestors, gadgets and tools because of DCTV's palette. After hooking up the RGB converter and connecting it to my RGB monitor the problem completely disappeared. Without any question the image that appeared was a sight for sore eyes. This was by far the best image I have seen on a standard Amiga RGB monitor. In addition to the high quality imagery, using DCTV paint is a breeze using a single RGB monitor. The only limitation I ran into was during the digitizing process where a composite monitor is required. For those of you who have been experiencing eye strain during your DCTV sessions I am sure the RGB converter will be a welcome change.

Applications

The real power of the RGB Converter is in the area of applications. Right off the bat I was able to incorporate it into a commercial I was working on with Jim Mixon for the Alphatron corporation. I had already rendered a 380-frame Lightwave animation of their high tech glasses and converted it to DCTV using the ADAM utility. The client approved the animation but wanted me to lay in a seamless starbed behind the entire animation. After some quick thinking I loaded up one of my own starbeds into another Amiga system in my studio and connected it directly into my Supergen genlock via the RGB converter. See the accompanying illustration for an example image. I could see by the smile on my client's face that he was satisfied with the results. Another plus from using this technique was not having to go down a generation by using tape.

Another technique I was able to get a lot of mileage out of was connecting both Amigas into the Kitchen Sync and inputting them into the Video Toaster for yet another layer of graphics. Potential uses for the RGB converter are many. Interactive video comes to mind because of the high resolution capabilty of DCTV and its many colors and low overhead. But keep in mind that this information can be displayed on a single RGB monitor with a touch screen. If we take a look at most of the interactive sytems out there we find that for the most part they are dominated by 2D front ends and animations. Enter the RGB Converter and we now have the next generation of interactive front ends. How about real 3D buttons with shadows and 3D simulations running directly from DCTV along with 16 bit stereo sound! All this on an Amiga RGB monitor, a touch screen with a pair of high quality speakers. One more thing to keep in mind is the low cost of DCTV and the RGB converter. With enough money almost anything is possible, but is it cost effective? The RGB converter along with DCTV definitely is. Another plus on the applications side is the RGB converter's capacity for mixing various native Amiga graphics formats. Virtually any formats can be mixed together, all on one screen; all that is required is that you adhere to the conventions spelled out in the manual. Finally the most powerful use for the RGB converter is the way it works in conjunction with a genlock. The ability to key DCTV graphics over prerecorded and live video opens up new ways of utilizing the power of DCTV.

Technical Performance

I have been using DCTV since its introduction and even did some beta testing early on. The signal quality of DCTV is above average but with the addition of the RGB converter and a genlock the signal is vastly improved. During the testing of the RGB Converter several animations were recorded to video tape in the edit suite. Using the Tint and Key knobs in the edit gave me the desired results without technical problems. Finally a commercial was

Advertiser Index

edited together using DCTV, the RGB Converter, and the Supergen. This commercial will air on cable TV in about six weeks. The fact that this production was accepted for the air by my client speaks well for the RGB Converter. Given the price of this unit it performed well.

Crackerjack Surprise!

My tests with the RGB Converter and the Toaster clearly show that they are incompatible with each other. These tests were done on three different systems. In some cases no display information would show up on the RGB monitor even though the system would boot up? On one system the Workbench would come up but it was so blurred in its appearence that it was totally unreadable. Ironically using the DCTV without the RGB Converter produced no serious problems. I could probably do an entire article on what is causing the incompatiblities between these two devices. However let me spare you the gory details and say that both devices are doing some pretty tricky things that accomplish rather incredible results which in turn render each other incompatible.

Conclusion

If you own or are planning to purchase a DCTV the RGB converter is a natural. Its low cost ($289 suggested retail) and high performance are a must for anyone using DCTV hardware in a video oriented environment. If your mind is not made up by now go down to your local dealer and take a look at it. It will change the way you think about DCTV.

Digital Creations
160 Blue Ravine Road Suite B
Folsom, CA 95630
91 6-344-4825

You might have seen Joel Tessler's animations on CBS broadcasts from Joe Robbie Stadium last year during the Miami Dolphins NFL season. His sports animations were broadcast to 40 nations via satelite from Kuwait during the Peace and Friendship Games and Warsaw where he installed an Amiga system for the Polish Broadcasting Corporation. Joel is the director of Automedia, an international consulting firm specializing in video, cable automation, animation, and training based in Miami.

ERRATA

At the end of the review of the Merlin Transporter in the July/August 1992 issue of AVID, the printed price was incorrect. The correct retail price for the Transporter program is $249.95

Also, the Dr. Is In column in the same issue incorrectly stated that upgrades from Pixel 3D 2.0 to Pixel 3D Pro would be free. Alas, this is not the case; there is a nominal fee. Please contact Axiom Software at (507) 289-8677 for further information.

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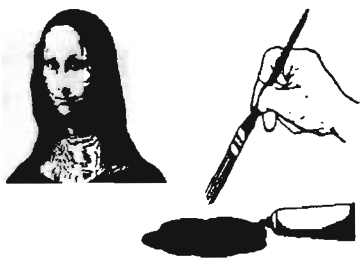

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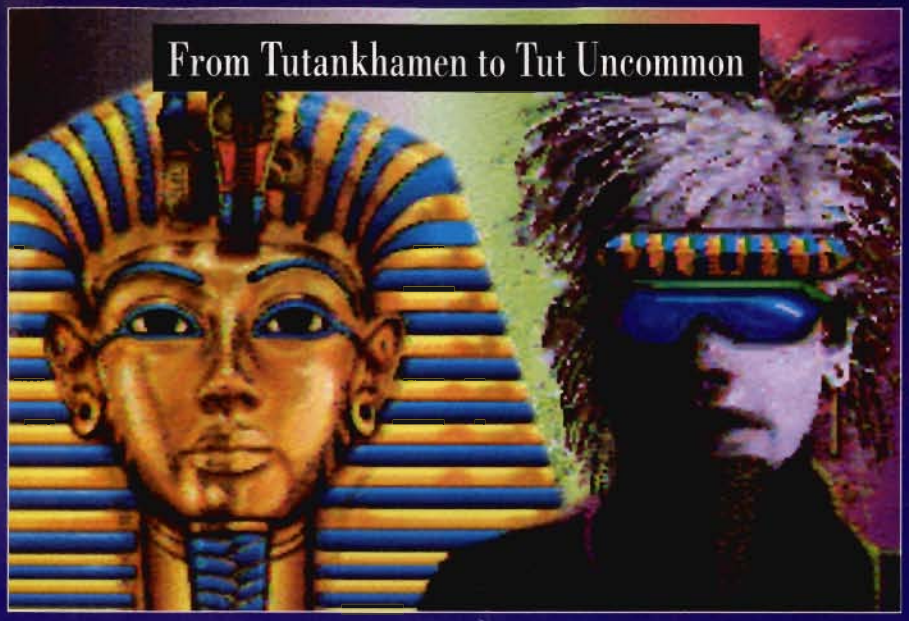

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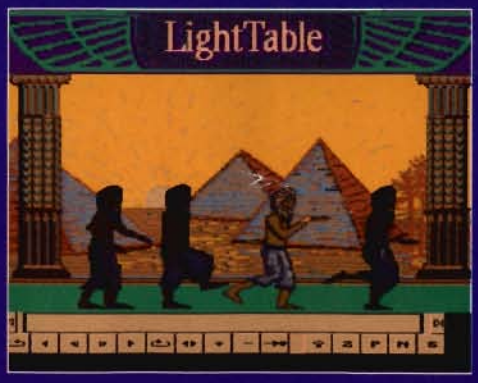

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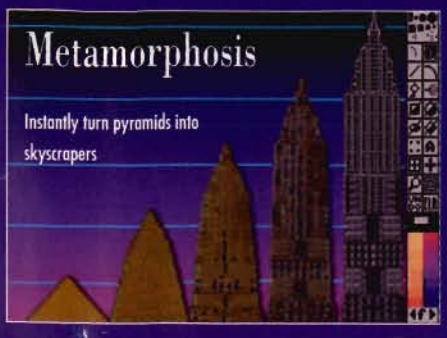

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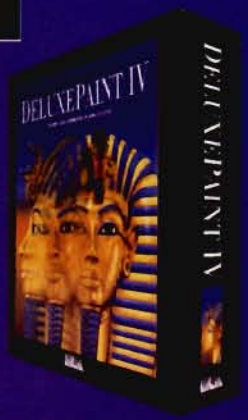

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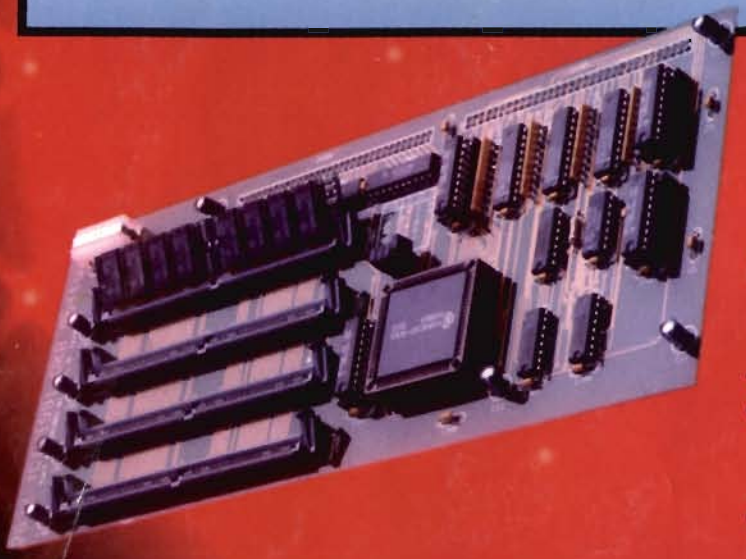

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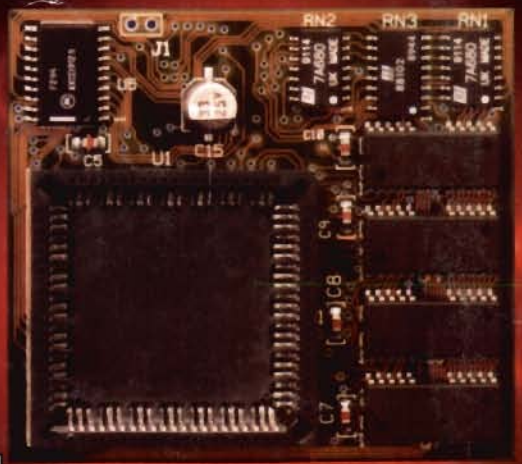

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