Avid

# The AMIGA® VIDEO Journal

July/ August 1991
US-$3.95
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- Still More Toaster Tricks
- Beginning Imagine: Part 1
- Logo Animation Projects

**Packed with HOT Amiga Desktop Video Information!**

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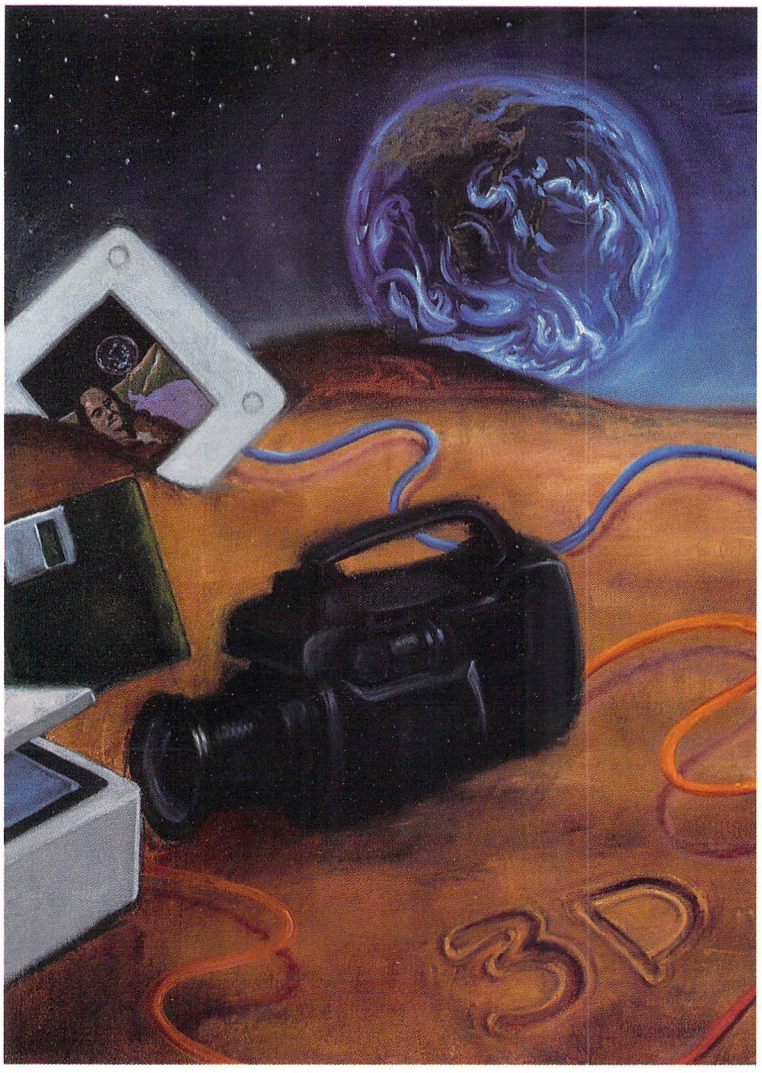


# WHY WE INSIST ON VIEWING OURSELVES

CONCEPT...

Some may say our perception is a bit bold. But for Amiga users, it perfectly describes where we fit in the image processing world. Directly in the center ... joining input, processing and output.

Our 24-bit image processing software, ***Art Department Professional (ADPro)***, gives you the power to import from video digitizers and color scanners. Or input and save to a wide variety of file formats including PCX™, IFF, GIF™, TIFF* and TARGA®*. You can even output to video, film recorders or PostScript® printers. And you can expand input and output capabilities as your needs grow.

SOURCES...

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*TIFF and TARGA support are part of the professional conversion pack. Available separately.
The following names are trademarked by the indicated companies:
Art Department Professional, The Art Department – ASDG, Inc.; Amiga – Commodore-Amiga, Inc.; PCX – ZSoft Corporation; GIF – CompuServe Information Systems; TARGA – Truevision, Inc.; and PostScript – Adobe Systems Corp.

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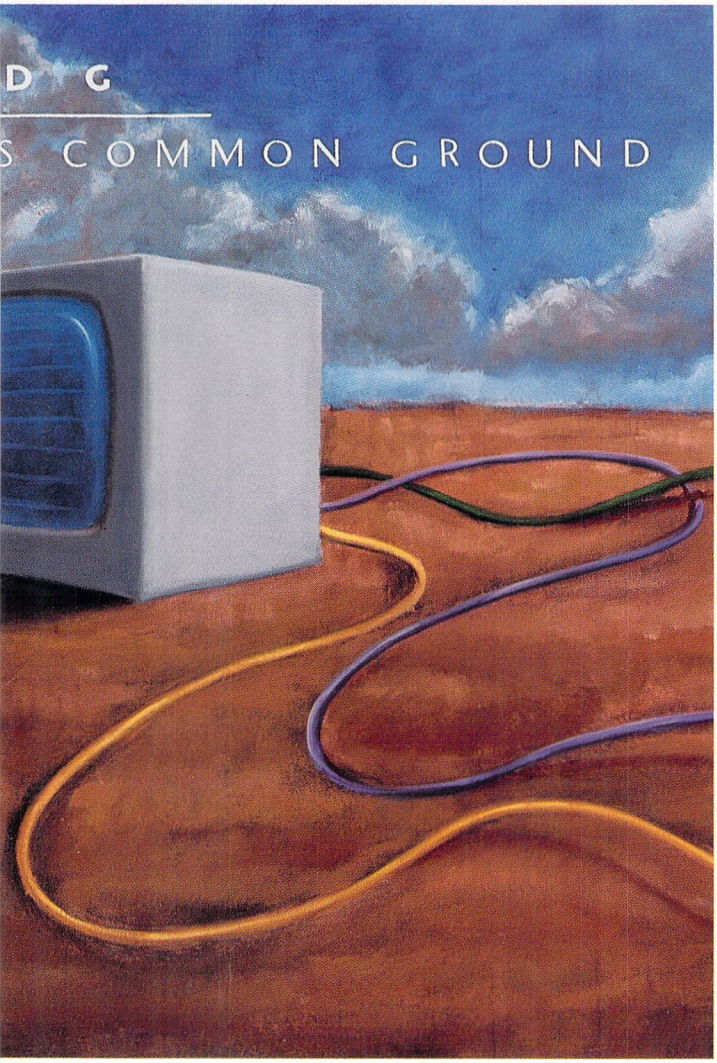
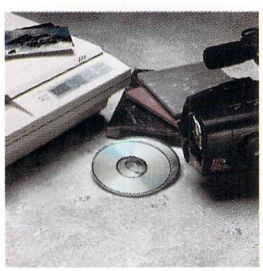




# AS THE CENTER OF THE UNIVERSE.



*INPUT...*

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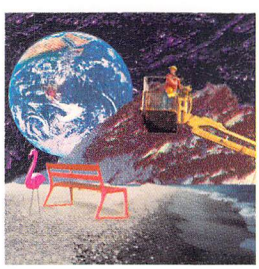
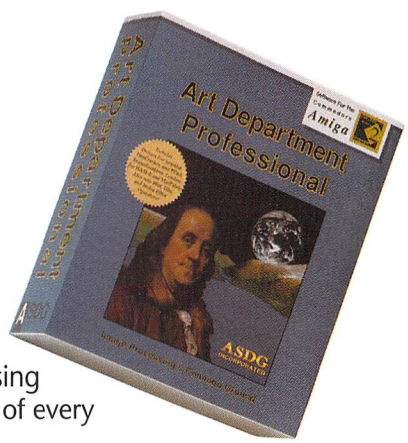


*RESULT.*

Choose ADPro for professional uses. Or for an entry-level alternative, consider ***The Art Department (TAD)***. Both place the exciting world of color processing within reach of every Amiga user.

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KARA FONTS

# TOASTER FONTS



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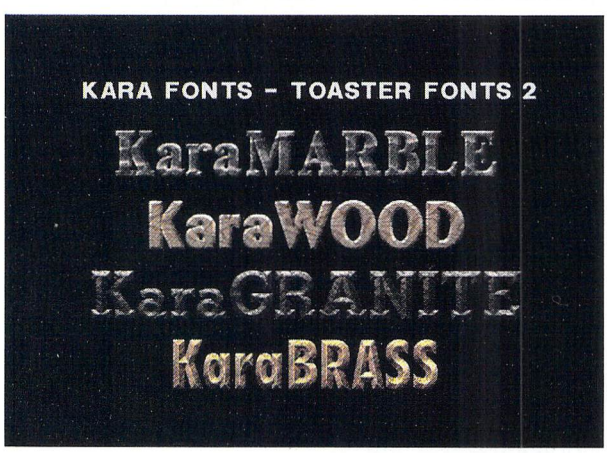
**TOASTER FONTS 1: Six Disk Set - Sug. Retail $ 99.95**
**TOASTER FONTS 2: Six Disk Set - Sug. Retail $ 99.95**


*Video Toaster CG is a Registered Trademark of NewTek Inc.
**TOASTER FONTS 1 requires 6.5 megs of Hard Drive storage. TOASTER FONTS 2 requires 6.1 megs of Hard Drive storage.**


**KARA COMPUTER GRAPHICS**
2554 Lincoln Blvd., Suite 1010, Marina Del Rey, CA 90291 (213) 578-9177


# KARA FONTS

## EXPAND TO UNIVERSAL DIMENSIONS!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Animated Hi-Res 704x480 overscan Starfield backgrounds in 3 views: Front, Oblique, and Side. Each comes in a 2 color version for fast loading and transferring to video AND a 16 color version to include 2 different KARA FONTS or one KARA FONT with 1 of the 4 included animated objects (Asteroid, Comet, Earth, Satellite). Includes a utility to install ALL Kara Fonts Packages on Hard Drives.

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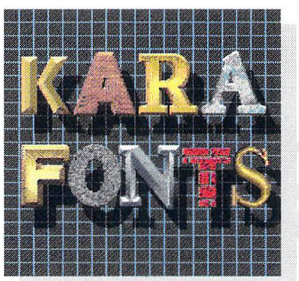


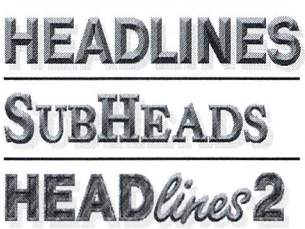


### HEADLINES

10 Hi-res, up to 8 color, uppercase fonts in two sizes each (approx. 104 and 84). Font styles in CHROME, MARBLE, BRICK and GRANITE are dragable for added 3-dimensional effects. Other styles are CHISEL, WOOD, BEVEL, CHISELserif, CAST, and COLUMN.

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### HEADlines2

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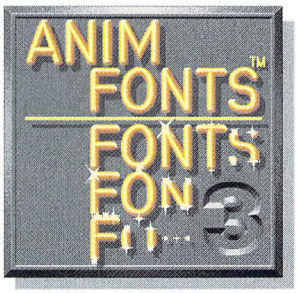


### AnimFonts®3*

CAPSULE is a Hi-Res, 8 color, metallic, uppercase, contemporary, rounded gothic font, which "sparkles on" from the middle revealing characters to the top & bottom. Then, an "X" sparkle highlights each letter towards the right. A separate "X" sparkle for custom effects is included. Comes in both a keyboard and AnimFont with palettes of Chrome, Gold, Metallic and Silver.

**ONE DISK - Sug. Retail $ 49.95**


### AnimFonts®2*

BULLION is a Hi-Res, 8 color, beveled dimensional, highlighted, uppercase gothic font and comes in a keyboard and AnimFont. The AnimFont rotates unto the screen 90 degrees on the "Y" axis to the left while a glint of light goes across the face from left to right. When used as instructed, the glint travels continously across the word(s). Included are palettes of Gold, Metallic and Silver.

**ONE DISK - Sug. Retail $ 49.95**


### AnimFonts®1*

ChromeSCRIPT is a Hi-Res, 8 color formal, sophisticated roman style script in caps and lower case and comes in a keyboard and AnimFont. Each letter of the AnimFont appears to be handwritten across the screen. A variety of treatments can be achieved with the included color palettes such as Chrome, reflective Gold, copper, bronze and other golden effects.

**One Disk - Sug. Retail $ 49.95**

*AnimFonts is a registered Trademark of Kara Computer Graphics. AnimFonts and STARFIELDS are compatible with DPAINT III, DVIDEO III and other programs that use the ANIM and Anim Brush format.
**Requires 1 MEG (keyboard), 1.5 MEG (AnimFonts), 2 MEG (Starfields), 2 Disk Drives or HD+1 Disk Drive.**


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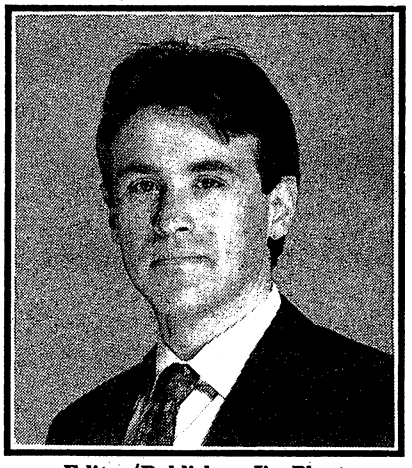
# Inside:



***Advertiser Index***





**Editor / Publisher - Jim Plant**


AVID
PUBLICATIONS
415-112 N. Mary Ave. #207
Sunnyvale, CA 94086
(408) 252-0508

Editor / Publisher - Jim Plant
Managing Editor - Laura Plant
Design/Illustration - Tom Twohy
Technical Editor - David Duberman
Contributing editors
R. Shamms Mortier, James Hebert, Peter Utz, John Foust, David Duberman, Jay Gross, Michael D. Brown, Matt Drabick, Marshal M. Rosenthal
Packaging Technicians
Bret Shirley, Paul Costello, Chad Fishbein

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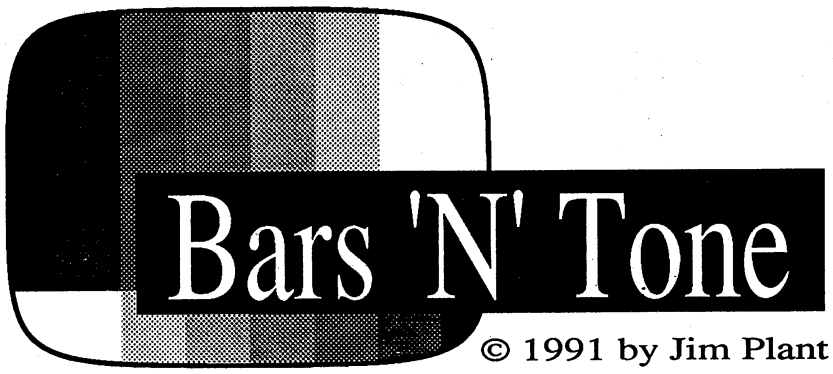



- **The New AVID**
- **Video Toaster/A3000 update**
- **Single Frame Controllers**
- **Alternative Lightwave 3D Animation**
- **A Multimedia "ShowMaker"**
- **AVID Video Compilation**
- **Madrigal's Automobile Construction Set**
- **OOPS! #1,2, & 3**

If you're an AVID subscriber or a regular AVID reader, and you've gotten this far into the magazine, you'll have already taken note of some of the major changes we've undergone. For those of you who are new to this publication, allow me to explain why I am so excited about this particular issue.

AVID began in April of 1990 with a single mission: to disseminate detailed Amiga-Video information to videographers who have been confronted with the choice of being either a video producer or an Amiga expert, and have opted for the former. 7000 copies of the 24-page premiere issue were printed and distributed to several lists of Amiga owners who had, through their buying habits, shown an interest in video.

In the 30 days after AVID was published and distributed, hundreds of individuals responded to our charter offer and became AVID subscribers. While most magazines would consider these numbers trivial, I felt strongly that AVID had found a responsive and supportive audience. A little over a year later, I'm sure of it!

The issue that you now hold in your hands marks several milestones in AVID's young life:

1. 15,000 copies of the July/August 1991 issue were printed, more than doubling the circulation of the premier issue.
2. The July/August 1991 issue is 56 pages from cover-to-cover, again more than twice the number of pages from Issue #1.
3. The July/August issue also features 4-color, 80# glossy covers for the first time.

In addition to these improvements, a recent distribution agreement was made to increase AVID's availability both in Amiga dealerships as well as mainstream outlets. To this end, our front cover has been completely re-designed to increase AVID's visibility at the newstand.

Besides publishing the magazine, we are also planning the publication of several books: The Video Toaster Bible (The Definitive Resource for Video Toaster Users), and A Guided Tour of Logo City (Creating Animated Logos with your Amiga Workstation); both are scheduled for Fall 1991 publication. We've got the first AVID videotape in the works (see below) and,we are also in the process of compiling information for the Winter/Spring 1992 directory of Amiga-Video Products which will be available in early December 1991. Naturally, AVID subscribers will receive first notification and significant discounts on these products.

Another note of interest: we will be exhibiting at the Amiga World Expo in Orlando Florida at the end of July. This will be our first trade show. Following the Orlando show, we will make a stop at the First Annual Video Toaster Jam held on July 30th in the Galba Room at Caesar's Palace in Las Vegas. The Jam will be held concurrently with SIGGRAPH. Full reports will be forthcoming in both the AVID LETTER (a subscriber-only monthly newsletter) and (when I come up for air) in the September AVID. We have also signed up to exhibit at the World of Commodore, being held in Toronto in early December.

## UPDATE: Video Toaster/Amiga 3000

In the May 1991 issue we reported on a method of installing NewTek's Video Toaster in the Amiga 3000. In the following issue we reported a variation of the original technique that accomplished the same result. Since then, I've run across some additional information that is of great importance to those who are considering this modification.

To recap, easy Toaster installation in the A3000 is prevented by both hardware and software obstacles. The hardware impediments can be overcome by either modifying the Toaster circuit board or by removing a segment of the 3000 outer casing. The software block can be remedied by simply substituting the enhanced Denise chip with the standard Denise found in the Amiga 2000 series.

These modifications are relatively simple when executed by competent technicians; and in an earlier issue we asked why neither NewTek nor Commodore had put their heads together to solve this relatively minor engineering problem and make the Toaster officically available to Amiga 3000 owners.

In a recent coversation with a NewTek official, I learned of several very good reasons why this had not yet come to pass. First of all, NewTek claims that the power supply on the Amiga 3000

is "flaky" and, while it might support the Video Toaster alone, NewTek engineers feared that future Toaster peripherals might over-burden the power pack. More importantly, now that NewTek has chosen the roomier Amiga 2000HD as the base unit for their stand-alone Video Toaster System, they might take advantage of the extra board space to design Toaster peripherals that could conceivably be too large to fit in the Amiga 3000's smaller enclosure.

This information throws a whole new light on the entire issue of installing the Toaster in the Amiga 3000. Technically, it can be done. But, would you really want to go to all that trouble and then find out that some neat, new Toaster gadget won't work in your machine? My recommendation is this: If you already own an Amiga 3000 and don't have the option of another computer, then I would consider the modification. What I wouldn't do is try to perform the modification myself. If I couldn't find a dealer that would guarantee the results, I just wouldn't do it. I certainly would not purposely go out and get an Amiga 3000 specifically to run the Toaster (unless I had money to play with!).

## Single-Frame controllers

The power and popularity of the Video Toaster's Lightwave 3D has rekindled a tremendous interest in single-frame controllers and recorders to capture the fantastic, 16+million-color images that are being generated with this sophisticated Toaster module. While frame accurate video recorders are still relatively pricey ($5000 and up), I've heard persistent rumors of a spate of lower-priced frame-accurate decks in the very near future. Look for prices in the $2500-$3000 range within the next 9 months.

While the recorders themselves have not yet significantly dropped, the software and hardware to control them has already begun to fall. One of the most interesting examples is the Personal SFC from Nucleus Electronics. Terry Smallwood, the company founder, was a Motorola Engineer working in a division that focused on the communications and control of microprocessor-controlled peripherals.

After intensive study of the protocol that controlled single-frame-accurate, professional video recorders, he asked what seemed to be a very simple question: why are these controllers so expensive? When he couldn't find a satisfactory answer, he set out to prove to himself that such a device could be designed and produced at a cost significantly lower than the existing price structure seemed to indicate. The result: The Personal SFC, offered at a retail price under $500! Several AVID readers have already had experience with this controller and the intial reports have been very positive. We will be reviewing the functionality of this product in detail in the September issue, but if you'd like immediate gratification, contact Nucleus Electronics at: (416) 859-5218.

cont➤

## Alternative Lightwave 3D Animation

Because the cost of recording Lightwave 3D animations a single-frame at a time can be expensive and-time consuming, there have been a variety of techniques devised to convert these multi-million color images to standard Amiga formats, which are then imported into a variety of Amiga animation programs. Many of these techniques require so many steps and become so involved, that clever people have taken to writing ARexx scripts that automate the process. One common ARexx script takes a Lightwave animation that has been rendered to the hard drive, and exports a frame at a time to ASDG's Art Department Professional to be converted to an appropriate standard Amiga resolution. The ARexx script then sends the processed image to a file where it can be loaded and animated in Deluxe Paint III or some other animation software.

One product that really intrigues me is a program called Lightscape. This software automatically converts Lightwave 3D animation files into Videoscape 3D files (and visa versa). This would allow Lightwave animations to be rendered in minutes instead of hours. The resulting animation could then be easily played back in real-time and recorded to videotape. This would give the animator the best of both worlds; the ability to use all the great tools in Lightwave 3D, and then quickly render and see the results in Videoscape. For more information about this product call: Universal Video and Software Productions at (401) 821-7771; or write to them at P.O. Box 8434, Cranston, Rhode Island, 02920.

## A Multimedia "ShowMaker"

Just as we were going to press, I received a review copy of Gold Disk's long-awaited ShowMaker. One of the unique capabilities of this multimedia and presentation authoring system is its ability to control the Video Toaster. I haven't had the time to review it completely, but what I have seen, I've liked. I started off by watching a very impressive six-minute demo tape that came with the package. After a quick hard drive installation I was ready to roll. ShowMaker uses the "timeline" approach to presentations, reminding me a bit of Deluxe Video III (By the way, what ever happened to Deluxe Video III? This was a program that received an awful lot of early attention, and now I don't hear much about it). Anyway, ShowMaker's interface is very intuitive and quite easy to understand. I was able to create a simple sequence, coordinating a graphic, a title and a sound file, in about 3 minutes without even looking at the manual. We'll be taking a much closer look at ShowMaker in the September issue. I have a hunch that this program will become a significant player in the Amiga multimedia market. Gold Disk can be contacted at: 5155 Spectrum Way, Unit 5, Mississauga, Ontario, CANADA L4W 5A1 (800) GOLD DISK.

## AVID Video Compilation

In the past I've mentioned that one of the fun benefits of this job is getting first crack at the review products that come across my desk. Equally as satisfying, is watching the videotapes of Amiga-animations that are sent my way by creative and talented AVID readers. I've learned an awful lot watching those animated segments and analyzing the tools and techniques that went into their creation.

Earlier this month, one of my colleagues accused me of selfishness. He said, I shouldn't be hoarding all these great logos and videographics, but that I should compile them and share them with my readers. Well, I got to thinking, "why not make a contest out of it?" So hears the deal:

**Send me your logos, industrial animations, and other Amiga-created graphics and I'll have them compiled into one approximately hour-long video tape.**

Once the tape is put together, I'll distribute it and we'll let the tape viewers judge and choose their favorite segments. The top three vote getters will win some really neat prizes. I'm not sure yet what they will be, but it will be something worth having, like a Toaster or a single-

frame controller...something good. Anyone whose animation is put on the tape will receive a free copy of the tape. The rest of you will be able to buy the tape real cheap (under $20).

There are only a couple of guidelines:

1. The segment must have been created primarily with the Amiga.
2. It must be part of a commercial project. Something you made (or hope to make) money with.
3. Include a brief description of your system and the software and method used to create the segment.
4. The acceptable tape formats for submissions are: VHS, S-VHS, 3/4", 3/4" SP, and Betacam. (Unless return postage is included, tapes will not be returned).
5. Finally, all entries must be received by September 15, 1991. Votes will be tabulated until November 15,1991. Prize winners will be chosen and listed in the December 1991 issue of AVID.

**ALL WORK AND NO PLAY...**

Lest you think that I've been working my poor fingers to the bone, let me divest you of that idea. I recently received a review copy of the Madrigal Automobile Construction Set (MACS). Even though the packaging was quite modest, I eagerly ripped off the cellophane wrapping, and immediately started having a blast. If you ever wondered what the front-end of a 57 T-Bird would look like attached to the rear-end of a 63 Corvette, then you'll love this 4-disk collection of IFF brushes of classic automobiles (complete cars and parts!). There's even a directory of military vehicles. In just a few minutes I managed to design an All-Terrain-Vehicle that I'm sure the Pentagon will be quick to adopt. Ask your dealer to order this product or contact Madrigal Designs at (707) 539-5675.

**OOPS! #1:**

In last month's column, I mentioned Video Escort, a program designed specifically to help special event videographers organize and keep track of their business. Somehow, I managed to give a partially-incorrect address, making it difficult to write for the $5 demo disk or more information. The correct address is: Mr. Hardware, 59 Storey Avenue, Central Islip, NY, 11722 (516) 234-8110.

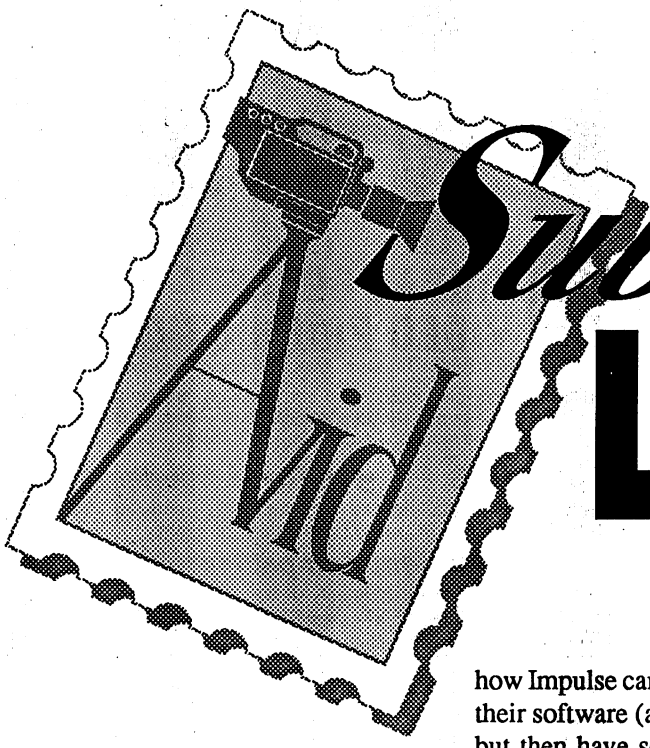
**OOPS! #2:**

In last month's column I also promised a full report on Deluxe Paint IV from Electronic Arts. Unfortunately, delays at EA have forced me to break that promise. A complete, in-depth report of DPaint IV will appear in the September issue (really!).

**OOPS #3:**

In "Toaster Tricks" a few issues back, James Hebert mentioned Perfect Video Production, a company producing a high-quality chroma-key device for the Amiga. Unfortunately, we forgot to give you a way to contact them for more information. We've heard the device is now shipping, so call (408) 737-0161 for details.

Jim Plant-Editor




# Subscriber's LETTER

**Dear AVID,**

I just got your May AVID LETTER and I'll certainly take advantage of your renewal offer. While I have your ear, I'll offer a few additional comments which may be of some interest.

My primary application is 3D graphics/animation, with output to video tape. I have well over 500 hours of experience with Imagine to date (... that doesn't make me an expert; just a slow learner, I guess!) so I was happy to see the Imagine introductory article in 5/91. Unfortunately it was also obvious that Mr. Mortier hasn't had a chance yet to become more fully familiar with Imagine. As good as this first release is, my own experience convinces me that it has a number of bugs that need to be eliminated, and operating characteristics that need to be improved, before it can be considered a professional product. (I've addressed my concerns to Impulse; and provided them with a video tape showing a number of bugs, but without feedback from them so far). I think Imagine has tremendous potential, but it needs a fair amount of polishing to fully realize that potential.

One of the improvements it needs most is not in the software itself, but in the user documentation. It baffles me how Impulse can put so much effort into their software (as they obviously have), but then have so little respect for their product (and their customers!) as to include two little pamphlets as "User's Manuals." These manuals (what there is of them) are not poorly written; just grossly inadequate in content. If my own experience is any guide, then it's safe to say that a new user of Imagine (...even one with a moderate working knowledge of Silver) is still faced with a monumental effort to become relatively comfortable with this software. In my view, this is due primarily to the fact that you ABSOLUTELY MUST perform a phenomenal amount of experimentation in order to find out what the program will do, simply because the manuals don't address many of the basics. And since experiments in 3D take so much time to set-up and render (even with my 33Mhz '030, and 50Mhz FPU)...well, you get the picture.

My apologies for rambling on about my frustrations with Imagine. But after reading Mr. Mortier's article, I felt strongly that his comments need a little better balance of what to expect from Imagine, after the "shine" wears off: this rosebush also has its share of thorns!

Incidentally, there's a very simple solution for Mr. Mortier's wish for a "target" to make camera-aiming easier (in the Stage/Action Editors). Here's the steps:

1. In the Stage Editor, add an "axis" to the scene. (The program will then automatically add this axis to the Action Editor as a new line-item, and give it the name "TRACK"). Move this axis to the place in the scene where you want the camera to point.
2. In the Action Editor, delete the existing "Align" control channel (the blue line) in the CAMERA actor-box.
3. Activate the ADD function, then click twice on the (now empty) "Align" control channel for the CAMERA actor. In the requestor that pops up, select "TRACK TO OBJECT"; and in the next requester, type in the name "TRACK".

The camera will now always point to the TRACK object (the axis you added), which makes it very quick and simple to re-orient the camera's aim in the Stage Editor, as needed. (The axis, of course, is not a visible object in the rendered scene, so it can be placed anywhere with impunity).

One last note: after moving the axis to a new location in the Stage Editor, the Perspective View is not automatically

redrawn to show the camera's new view. You must initiate some function (such as "Right Amiga, C") which forces the program to re-calculate, and redraw, all quadrants. All of this may sound involved, but it's actually very quick once you get the hang of it.

PS to the last note! The axis you just added can also be set in motion, causing the camera's aim-point to shift during the animation! (This can be done by relating the axis to a Path; or by just repositioning the axis in a series of key-frames). Neat stuff!

If you have enough Imagine users, perhaps you'd be interested in a "How-To" article (or series?), from a dedicated users viewpoint, on "Things That Mother Impulse Never Told You About Imagine." I could pass along a lot of tips and tricks that I've learned the hard way. And with enough interest, and input from other users, it could develop into a "clearing house" of invaluable information on how to get the most out of Imagine. Here's a sample of some of the topics which I could address:

- Tips on initially setting up the Stage Editor/Action Editor, to avoid frustrations later on.
- A list of current bugs, along with work-around solutions.
- The secret on how to get "Extrude by Path" to work.
- Critical tips on applying IFF image wraps to objects.
- The secret on how to get "Cycle Objects" to animate properly, once they've been loaded into the Stage Editor.
- The secret on how to get the parts of a "Cycle Object" oriented correctly.
- Critical things you need to know before transferring a Project from one disk to another (...if you expect it to work after that)!
- The relationship of "Objects" to "Groups" to "Joins".
- How to edit "Movie" scripts (don't try to use the Movie "Edit" function to do it)!
- And hopefully, there's someone out there who can tell ME how to get "Altitude Mapping" to work properly!

I certainly don't have all the answers on this subject, nor will my tips necessarily prove to be the best approach for all situations. But hopefully this would help stimulate others to share their knowledge so that we CAN generate the best possible information-exchange on Imagine.

Thanks for listening.

Sincerely,
Bob Thompson
Leonardtown, Maryland

*Mr. Thompson,*

*Your letter touched on a point (the lack of Imagine documentation) that has been the subject of many letters I've received. I chose to publish your letter because, in addition to the complaint, it also offered some solutions. and suggestions.*

*In response to your comments, let me mention that in the conversations I've had with Impulse's Mike Halvorson, he has been quick to acknowledge the skimpiness of Imagine's documentation. I suspect that he has heard this complaint enough to be looking into ways to remedy the problem. By the way, I don't think the documentation problem should be looked upon as an indication of lack of respect. It's probably more a combination of priorities and not enough hours in the day.*

*Fortunately, Imagine has become so popular that it has spawned a small cottage industry of supporting products (see AVID June 1991, An Imaginary World). There are a variety of books and tapes available that might fill in the gaps. Of course, with 500 hours of Imagine experience under your belt, you could probably write your own book.*

*As for your suggestions about possible subjects for articles about Imagine, I say "Bring 'em on". Your suggestions look very interesting and we would love to evaluate your submissions for publication in AVID. Here are a few guidelines to follow:*

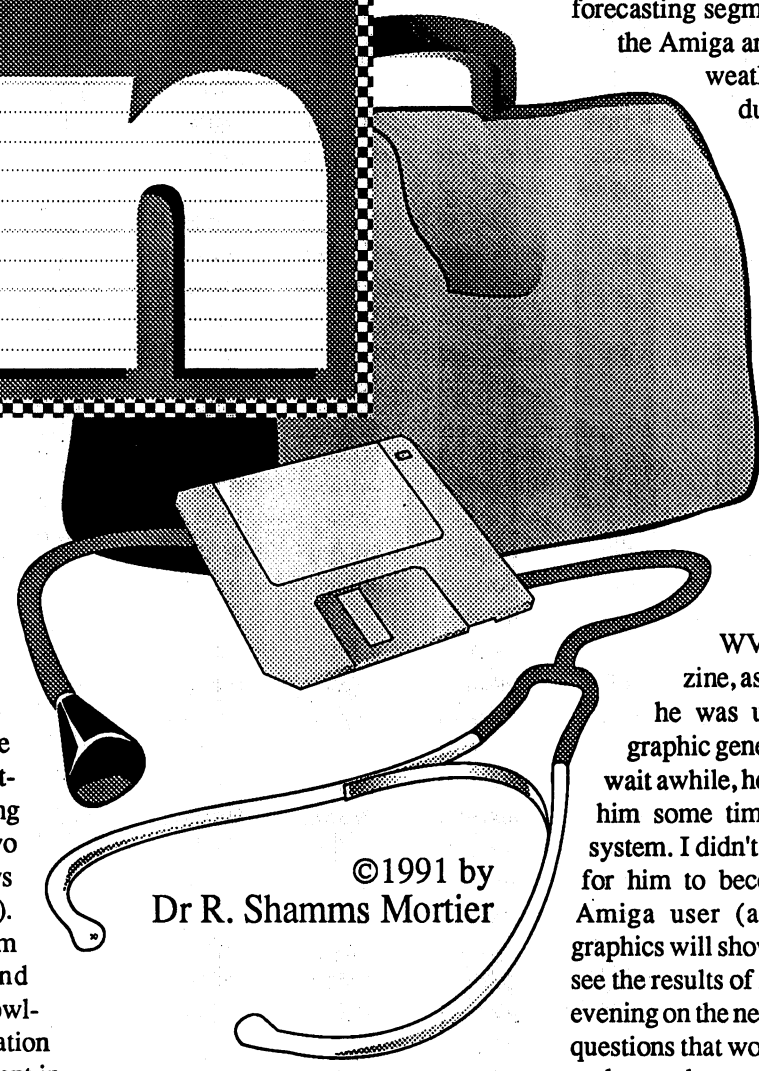
1. *Be specific: AVID readers, as you well know, appreciate detail. My philosophy on this comes from reading too many magazine articles that try to appeal to everyone and satisfy no one.*
2. *Articles should be 1800-2200 words (sometimes more if you have a lot to cover)*
3. *Send your article on an Amiga disk in ASCII format WITHOUT paragraph markers after each line.*
4. *Include a SASE if you want your materials returned.*

*Thanks again for your comments. I'll look forward to reviewing your articles on Imagine.*

*Sincerely,*
*Jim Plant*
*Editor*

*P.S. To say "Thanks" for the letter, we are adding an extra month to your subscription.*

# The DOCTOR is IN





As the Amiga continues to find its niche in the professional arena, it also continues to address a wide list of needs for live broadcast. One of these areas that the Amiga is making serious headway in is that of weather forecasting graphic support. Weather forecasters have become one of the troika of presenters that make up the standard evening news delivery models (the other two being the presentation of the news itself, and the exposition of sports). Weatherpeople (the non-sexist term that includes weathermen and weatherwomen) have to be knowledgeable in terms of the information they present, and must also be adept in using (and sometimes creating) the graphic screens that clarify their presentations. These presentations have to cover a lot of data in a small amount of time, so that videographics are vital as an accompanying tool.

WVNY is the regional ABC affiliate. It broadcasts from Burlington, Vermont, and serves a very wide area, including reaching up into Canada. Like most medium-sized stations, it lacks the funds to purchase dedicated graphics systems that may cost hundreds of thousands of dollars, and is always looking for ways to economize while still delivering a quality product to its audience. It purchased the Amiga in 1990 for a multitude of purposes, from support for its advertising productions to an upgrading of the screen graphics for the weather forecasting segments and more. Before the Amiga arrived on the scene, the weather graphics were produced from hand-drawn data that was superimposed upon traditional maps. The look did not compliment the hard work of the forecasters, especially since all of the competition was already using more up-to-date technology.

It was my intent to interview Jim Teske (the weatherperson at WVNY) for AVID Magazine, as soon as I found out that he was using the Amiga as a graphic generating tool. I wanted to wait awhile, however, in order to give him some time to learn to use the system. I didn't have to wait very long for him to become an accomplished Amiga user (as the accompanying graphics will show), and besides, I could see the results of his Amiga dance every evening on the news. I wanted to ask him questions that would help AVID readers understand some of the areas of concern that a professional broadcast person faces,

and was hoping that the answers would also show how our Amiga was helping him to address those areas. In the hopes that I have accomplished my mission, here is the result of that interview:

*AVID: Jim Teske, what prior experience have you had with computers and/or computer graphics before your introduction to the Amiga?*

JIM TESKE: Being a meteorologist, I come in contact with computers everyday, but most of that contact since college has been with database systems. This is the first time I've had hands-on experience with computer graphics. While at Accu-Weather (the world's largest private forecasting firm) I was exposed to their "Liveline Graphics System". They needed to provide hundreds of graphics products to their clients everyday. I think this experience impressed upon me that computer graphics can make a weather forecast much more interesting than just using current surface maps with standard high and low pressure symbols.

*AVID: What attracted you to the Amiga versus other systems?*

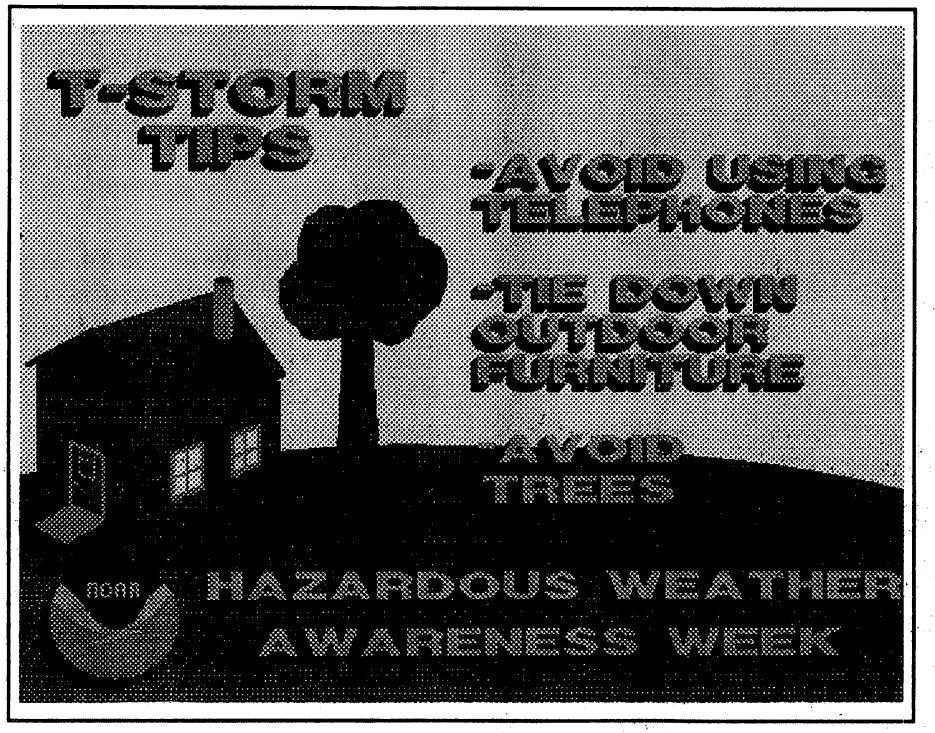
JIM TESKE: Because we are a small station, I think that the cost was the initial single most important factor. We had been pushing for a computer system for some time, but I can't take the credit for WVNY's purchase of the Amiga. Our creative director, Bob Tamburri, has an Amiga at home, and convinced the station to look at one, and finally to purchase the system.


*AVID: How long did it take you to get a feel for the system? Were you able to figure it out by yourself, or did someone provide one-to-one instruction to get you started?*

JIM TESKE: I would say that most of my Amiga knowledge is self taught. The first week or so I split my time reading the DPaint III manual (my primary software program) and just experimenting with the Amiga. The manual for DPaint pretty much covered all of the bases and the tutorial sections were very useful. It took about six weeks to get comfortable with the Amiga and to create the first actual graphics for broadcast.

*AVID: What special problems did you have as far as needing specific results from the system? How did/does the Amiga handle those problems?*

JIM TESKE: I think the only special request (I wouldn't call it a problem) was as to how the graphics would be presented. This was solved by Elan Performer. Elan is perfect because it will take single frame graphics, animations, and cyclic graphics (used to represent the jetstream). In the future, I would like to have more effects in going from frame to frame, but until I find a paint program as easy as DPaint III that can accomplish



that, I will continue to work without fancy wipes and dissolves.

*AVID: Exactly what is the hardware configuration of the system that you are using? What is the amount of memory, drives, model, and other peripheral configuration?*

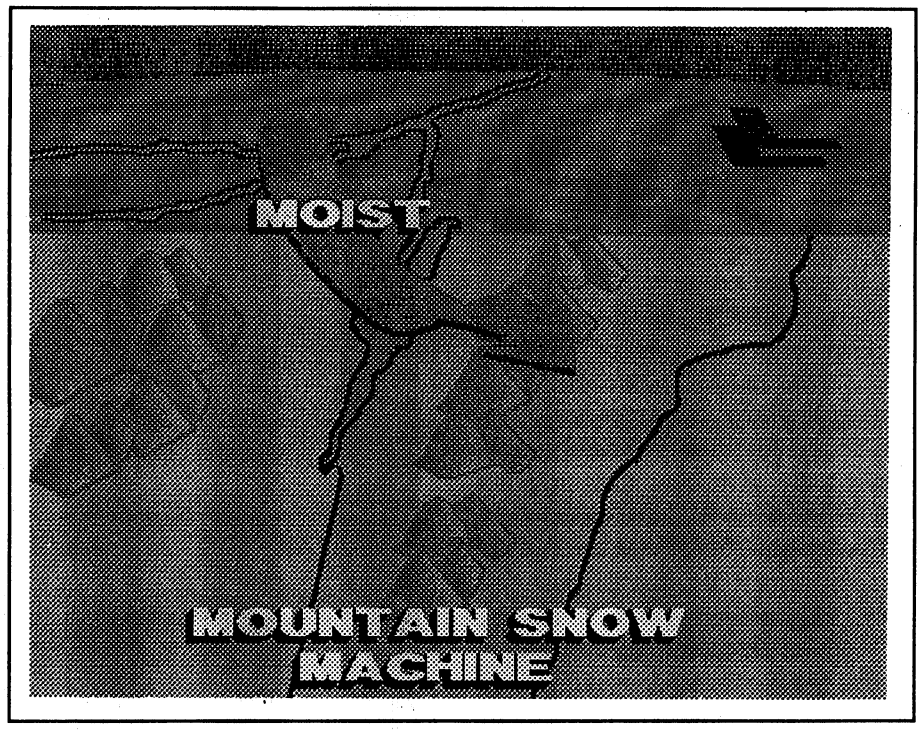
JIM TESKE: We have an Amiga 2500 with an internal hard drive, an accelerator, 8 megs of fast RAM, the Toaster, Digi-View peripherals, and the PP&S Framegrabber.

*AVID: What software do you use, and why do you like it?*

JIM TESKE: Primarily DPaint III. I have had limited exposure to ToasterPaint and PhotonPaint, but I always end up back with DPaint. Both of those other paint programs do have more capabilities as far as colors are concerned, but to me DPaint is more versatile and user-friendly. DPaint not only provides you with paint capabilities, but also with animation and better font control.

*AVID: Would you talk a bit about the necessity of working within short deadlines with the Amiga, and if and how the Amiga helps in the quick production of quality work?*

JIM TESKE: After using the Amiga in "working conditions" for 10 months now, I would say that the preparation time is roughly the same as before the Amiga. If there is a time problem, it comes when we have to create specialized graphics. If I want to draw anything detailed, I need a day to prepare it. I am building a library of graphics that I can use anytime...like the formation of thunderstorms, details of radiational cooling, etc.



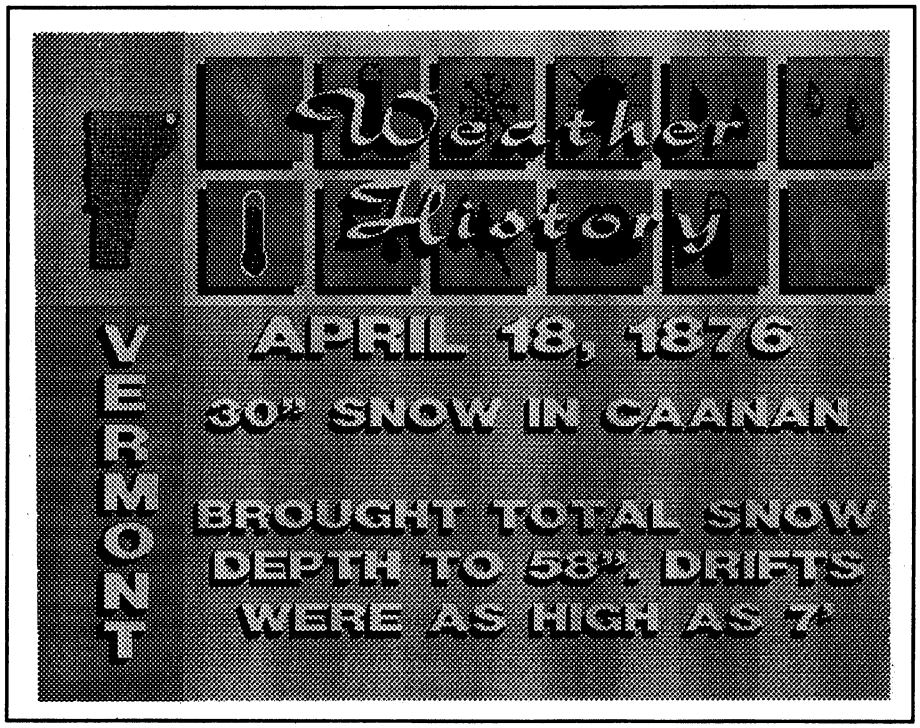

*AVID: What shortcomings have you found by using the Amiga to produce graphics for your purposes?*

JIM TESKE: The only problems I have had with the Amiga (and with DPaintIII) is creating detailed scenes with many colors and first-rate fonts . I'd like to do this for things like the marine forecast. What I envision is a detailed lake scene with the important information over it. This is something that the Video Toaster can accomplish, once I have more time to work with it.

*AVID: Does the Amiga interface well with other aspects of the WVNY operation?*

JIM TESKE: We use the Amiga not only for weather, but also for commercial production, over-the-shoulder slides in news, and backgrounds in sports. It is also being used for public service announcements. It will be utilized in a greater capacity in the future for news, still-to-come pages, and more.

*AVID: What would you like to do with the Amiga that is either not presently possible or that represents a process that you have yet to learn? Also, what other capacities or "fixes" would you like to have available?*



JIM TESKE: I would like to be able to do more complex animations where entire weather maps evolve (fronts, clouds, and precipitation changing position from one point in time to another). Also, I'd like to put more animation into the forecast pages. I plan to upgrade my learning and use of the NewTek Video Toaster.

*AVID: What do you really enjoy about your Amiga interaction?*

JIM TESKE: In general, the Amiga helps me to tell the weather story the way that I want to. Everyday, there is something different to talk about, either in Vermont or across the country. Some graphics are the same each night, but I can also experiment with their graphic images. If there is severe weather somewhere, I can use Amiga-generated regional maps to show more detail. Telling people why something has happened is the most important part of my job.

Before the Amiga arrived, there would be nights that I would explain things with hand gestures. We have a small staff, and I have become the main graphics artist. It's still an experimental process, but there's nothing like building the presentation from ground zero. A lot of stations subscribe to ready-made graphics, but having the freedom to create your own gives you more freedom and is more exciting.

*AVID: Would you recommend the Amiga to other professionals in your field?*

JIM TESKE: For small stations on small budgets, the Amiga may be the solution to your graphic needs. Not only does it enhance your weather but also production and news. While a little artistic ability helps, the Amiga and DPaint are easy enough to use with just a little practice.

*Jim Teske came to WVNY in May of 1988. His education includes two years at SUNY in Oswego, N.Y. followed by three years at Penn State. He graduated with a B.S. in Meteorology. He worked at Accu-Weather from May of 1986 to April of 1988, and during his last year there was a forecasting intern.*

# Still More Toaster Tricks!



In the course of working with the Video Toaster, I discovered an unexpected fact of life, which may or may not be termed a bug, that you should be aware of if you work a great deal with freeze frames: The faster your accelerator card, the longer it can take you to save a frame to disk.

This function of the Video Toaster software was designed to work around the Amiga's native clock speed. An accelerator card adds to the amount of system monitoring that the Toaster software needs to perform, causing the process of saving a frame to slow down.

Here's a short table of comparison times from systems I had available:

-Amiga 2000 with 5 MB RAM (no accelerator) - 22 secs
-Amiga 2000 with 9 MB RAM (28mhz accelerator) - 45 secs
-Amiga 2000 with 9 MB RAM (33mhz accelerator) - 65 secs

To someone viewing the process, an unaccelerated system alternates between screen-flashes and disk drive access some 4-5 times before finishing. An accelerated system merely flashes for the majority of the time, then writes the file to disk during the last few seconds.

It should be noted that all other functions within the Toaster benefit from the presence of acceleration.

In the case of the situation that caused us to discover this, we needed to save over 200 frames to disk. Unexpectedly, when we went to a faster card, it took more time! We needed to capture a lot of images, then play them back smoothly; we thought we needed a fast system.

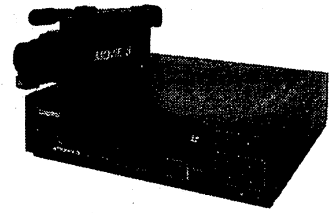
The solution was to equip this particular Amiga with 4 megabytes of standard RAM (16-bit), and an accelerator card with 4 megabytes of faster RAM (32-bit). This allowed the user to start the system in either an accelerated mode (for playback) or unaccelerated mode (for capture), depending on the work he needed to do, and still enjoy the best performance.

As is always the case, the hardware configuration you need depends on the work you need to undertake with it. There is the possibility that NewTek can address this situation, unless it affects too few users. My own experience is that this is not a major interruption of my work, yet I have to admit that I do not save large numbers of frames, so it is no problem.

Here are some miscellaneous tips you may attempt if you want to speed up

# TURN YOUR AMIGA INTO A VIDEO PRODUCTION SYSTEM!

***ShowMaker™ is the first package that turns your Amiga into a complete desktop video solution, providing sequencing of video, animation, and Toaster effects together with mattes*, wipes, titling, and multi-channel soundtracks. In short, ShowMaker lets you quickly and easily assemble full video productions on your Amiga.***



## VIDEO PRODUCTION MADE EASY

Integrate video, animations, music, effects, and more with the ease of the mouse. ShowMaker's unique Time-Line Production Interface gives you simple graphic controls to "layout" the order and duration of your elements. ShowMaker lets you assemble your whole production, from animations and video to Toaster effects and sound effects.

## VIDEO CONTROL

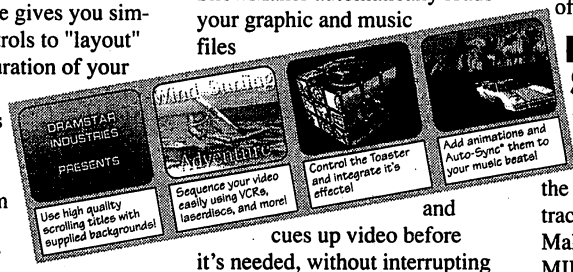
ShowMaker gives you control over genlocks, videodisc players, and VCRs. Just tell ShowMaker when to cut in your video, and it will automatically search to the correct position and cut or fade in the genlocked signal at exactly the right time.* Video sequencing has never been this easy!

## TOASTER POWER

If you have a Video Toaster, you need ShowMaker. Only with ShowMaker can you sequence a series of Toaster effects directly into your production, making for spectacular video. And ShowMaker makes it easy!

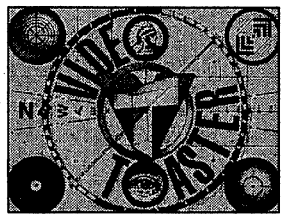
## AUTOMATIC PRE-LOADING

ShowMaker automatically loads your graphic and music files and cues up video before it's needed, without interrupting the playback. This means you can create long running productions, limited by disk space, not RAM.




## BUILT-IN TITLING

ShowMaker's built-in video titler gives you dynamic scrolling titles. And with ShowMaker you can run titles over video and animation, even adding special effects like drop shadow and outline! ShowMaker also includes a collection of high quality video fonts and exciting backgrounds.




## EXCITING TRANSITIONS

ShowMaker features dozens of built-in transitions, including wipes, fades, and dissolves. You can create exciting professional-style transitions with just a click of the mouse.

## DYNAMIC SOUNDTRACKS

Add dynamic stereo soundtracks just as easily. Simply position segments on any of the music or sound effects tracks with the mouse. ShowMaker supports MIDI output, MIDI files, SMUS files, and IFF samples. And ShowMaker's unique auto-sync feature** ensures that your p always remains synchronized to the music!

## EDITING POWER

With ShowMaker you can preview and refine your production at any time during its development. Then quickly and easily adjust, cut, copy, and paste tracks until your show is perfect. ShowMaker will even generate storyboards and cue sheets to help you visualize and fine tune your production.

## IT'S A WRAP!

Hit the play button and ShowMaker plays back your production in real time, automatically synchronizing the video, animation, soundtrack, and titling. A true multimedia presentation. Then record your production to videotape for a first generation Master Tape!

## REACH YOUR AUDIENCE

Business, education, presentation or entertainment. Whatever your message, video brings it to life. There is no easier way to combine graphics, animation, video, sound, and titling into exciting and effective productions. ShowMaker turns your Amiga into a video production system. Join the video revolution by seeing your dealer or calling us at 1-416-602-4000.

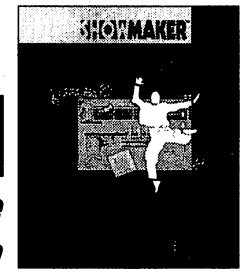
By the way, this entire ad was created with Professional Page 2.0 Desktop Publishing software, another high quality Gold Disk product.

*GOLD DISK*
P.O. Box 789, Streetsville
Mississauga, Ontario, Canada
L5M 2C2 (416) 602-4000

*Additional hardware required. **Patent pending. ShowMaker and Professional Page are trademarks of Gold Disk Inc. All other products mentioned are trademarks of their respective owners.

**SEE THE POWER!**
**Drop by your local dealer and ask to see our new ShowMaker demonstration tape "Multimedia Muscle", produced entirely with ShowMaker!**

**SHOWMAKER**
***The Complete Desktop Video Solution***



your system frame saving. These come from NewTek and GVP:

* If you have Commodore's 2091 hard drive controller card, go into the Hard Drive toolbox and access the partition/advanced section. Within the software there is an option labelled "Supports ReSelect." Set this to "No."
* If you have a GVP hard drive controller or Combo Card, within their hard drive software is an option for the number of buffers used by the card. It is normally set to 32. Raise this value to 256 and you may see increased performance.

In the Public Domain, there is a program called Journal, written years ago, that allows you to "record" a sequence of mouse movements, clicks, and keyboard presses, and then "play them back." Journal works with the Video Toaster! I successfully recorded a number of sequences that included opening the hard disk icon, opening the Toaster drawer, starting the Toaster, loading a frame, activating transitions, and exiting back to Workbench. They actually worked!

Further study of Journal taught me that the program did have some limitations. For example, while it can accept and record mouse clicks, it cannot not keep track of "click-and-drag" movements - for example, grabbing and dragging the T bar to effect a transition. Journal does not record the drag portion of any maneuver within the Toaster.

There are ways around this in most Toaster slices. Wherever a click-and-drag movement has a keyboard equivalent, the keyboard presses will be recorded properly. Click-and-drag boxes that support keyboard equivalents include the Frame/Page Number Indicator, the Luminance Key Clip Level Indicator, and the Project Number Indicator.

Also, any click-and-drag movement that you perform in Lightwave 3D can be entered as a numerical value to move, rotate, or size any object. This means that you should use keyboard input wherever possible for a successful playback.

Of what use is Journal? How about creating a self-running demo? Journal allows non-programmers the ability to create a presentation without requiring that they learn ARexx. How about recording the exact actions you take before running into a bug, and sending the file to NewTek to play back for themselves to see what happened? A friend could send you a file showing how he designed a certain image, object, or effect. The possibilities unfold the more you think about it.

Journal was written in 1987. If you would like a copy, you can find it in the Fred Fish public domain disk collection on disk #95. If you're interested in further development of Journal, you can reach the author, David Cervone, via the Department of Mathematics, Brown University, Providence, RI, 02912. (Note that there is a similar program in public domain called Record-Replay. While Record-Replay (Fish #105) seems to record events just fine, it has difficulty playing them back. For the moment, if you have the interest, check out Journal).

The final discovery I made with the Video Toaster centers on the CG. You may be aware that when you save a Project from the Preferences screen, two files may be written to your hard disk. For example, the Default file that ships with the Toaster is a saved Project, and the two files are:

* 000.BK.Default - This contains the Book (of 100 pages) for the CG.
* 000.PJ.Default - This contains the ChromaFX and Switcher settings.

"BK" refers to "book," and "PJ" to "project." If the CG is not active when you save a Project, there will be no "BK" file.

A Project may not have a book associated with it, as evidenced by the GetSmall Project that also ships with the Video Toaster. GetSmall contains no CG pages, no ChromaFX, and one special

effect transition: Smooth Fade. This Project is ideal for work sessions involving Paint or Lightwave, where you have no need for Switcher effects, and it saves valuable memory.

The GetSmall project file looks like this on disk (note there is no Book file):

* 001.PJ.GetSmall.

In order to save the pages of the CG that you have been working on, you need to save a Project. This action will save both the Project and Book files to hard disk. These files share the same three-digit ID prefix, which is important to recognize. In order for you to load the book from a previously saved Project, you must go to the Toaster Preferences screen, and enter the number of the Project that contains the Book you want.

Earlier, I had thought that the CG needed to be active in order to load Books from Preferences. This is not entirely true. Here's a nifty shortcut to loading both a particular Book file and the CG at the same time. When I pointed this out to the CG's programmer, he was pleasantly surprised at this undocumented "feature."

Under the Project Menu on the Toaster Preferences screen, three icons are displayed: Load Project, Save Project, and Load Book. If you have not loaded the CG into memory (the CG button on the Switcher is "ghosted"), the Load Book icon will not be visible whether the Project you select in the numerical window contains a Book or not. However, if you know that you have a Book saved within a certain Project, do the following:

- Go to Toaster Preferences - Click on the three-digit window in the Project Menu, and drag the mouse up or down to locate the Project that contains the Book you want. Find the file in the window, but don't load it. - Click on OK and return to Switcher - Click on the CG button. The CG will load, and automatically load the Book from the Project that you indicated at the Preferences screen.

That's all there is to it. Saves you the process of pre-loading CG unnecessarily.

Knowing about GetSmall is handy for saving space on your hard disk too. Instead of saving full Projects made up of Toaster Effects, ChromaFX, and a CG Book, you can save a GetSmall-type of Project with the CG Book. A Project that contains four banks of Toaster Digital Effects is roughly 40K in size. The GetSmall Project is less than 1K in size.

My system loads the GetSmall Project by default. I work on CG pages until I consider the Book complete, then save the entire Project. The Toaster saves a 1K Project file, with a CG Book file that varies in size (depending on the number of pages I worked on). I can save a larger number of Projects to my hard drive using GetSmall as the template.

## More news for 2.0

Titling over Framestore/Paint images will definitely be possible through the CG. Framestore Pages will have the option of being solid background, graduated background, and 24-bit image background. You'll be able to move text around to find the best placement as well.

Modeler will feature a number of new actions, such as Skin, Magnet, and others to enhance your modelling sessions. You will also be able to select polygons from the fourth window, where a pseudo-3D depiction of the object can be portrayed.

Lightwave 3D rendering information: each higher level of rendering increases the resolution by a factor of 2, and the rendering time by a factor of 4. Newer modes of rendering include Super Lo Res, for quick surface texture previews or very rough pencil sketches, and Print Resolution (previously called Super High Res here) for going to print or film recorders. Print Res displays only a very subtle difference on an NTSC monitor, and only if you're within about 1 foot of the screen! But it will be terrific for those specialized forms of output for which it is intended.

Speaking of 3D, there's news on the

texture mapping front.

### Texture City

This is a collection of 24-bit images in three formats: IFF24 (736x480), DCTV (736x482), and HAM (368x480). Additional formats are in the planning stages, including TARGA, TIFF, and PCX. Over 300 images are planned for release, with many already available. Textures include brushed metals, velvet, marble, wood, textiles, space, sand, and more. Contact Texture City at 3215 Overland Ave., #6167, Los Angeles, CA, 90034, or call Larry Rosen at (213) 836-9224. Retail cost is $299.95 for 30 24-bit images.

### ScreenMaker

This is a collection of 100 24-bit images in two formats: IFF24 (736x480) and HAM. Rather than a collection of natural textures, this is a wonderful set of pre-made backgrounds for titling, graphs, charts, and more. Images include Foils, Scrolls, Banners, Exotics, and others. The original images for ScreenMaker came to the Amiga from other high-end platforms as designed by The Digital Graphics Library, Inc., 1382 Third Avenue, Suite 333, New York, NY, 10021, or call (212) 978-8508. Additional libraries are in the works, and may be ordered on floppy disks, or SyQuest cartridges. Retail price is $399.00.

### ImageCELS

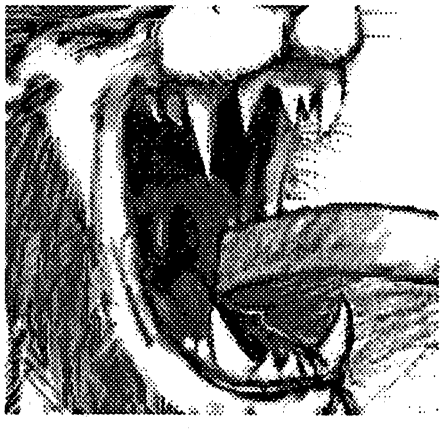
How about 1,150 images and textures, in GIF, PCX, TARGA, TIFF, CEL, PICT2 24-bit, DIB 8-bit, and 256-color IFF. It may sound like overkill, but the nicest thing about this collection is that images are seamless, designed so that when used in 3D they do not show edges where patterns repeat. Roofing, tiles, brick, people, and more are available on CD-ROM from Imagetects, 7200 Bollinger Road, #802, San Jose, CA, 95129, or by calling (408) 252-5487. Retail price is $395.00

For creating or scanning textures of your own, there's a terrific book by photographer Phil Brodatz called, appropriately enough, Textures (Dover Press). Although published in 1966, it is a marvelous collection of 112 black-and-white plates of patterns and textures, both man-made and natural. Titles include lizard skin, ceiling tile, sand, burlap, rattan, lace, clouds, bark, wire.

### New KARA FONTS

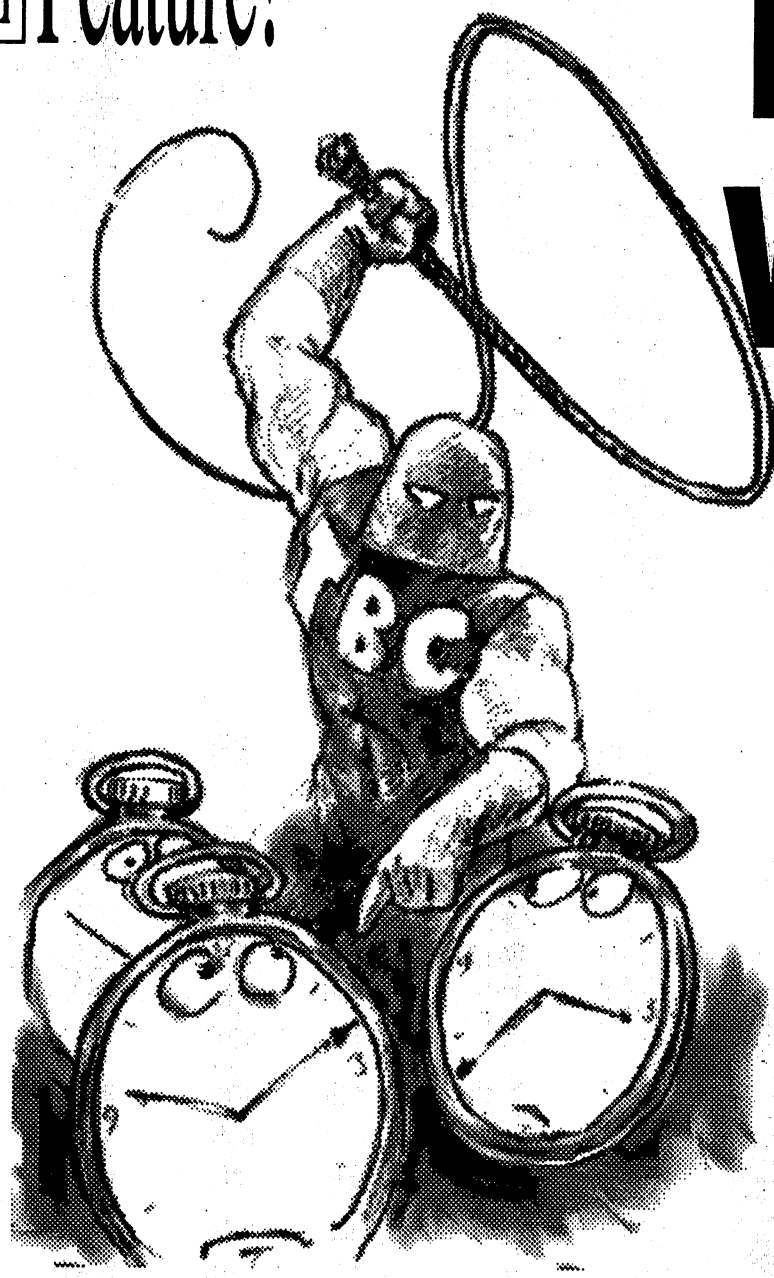
A few months back I reported that I had heard that Kara Blohm of KARA FONTS fame was working on some new Toaster Fonts. The rumor turns out to be true, because I recently received a press release along with a couple of color slides showing the new fonts. We won't print the photos here because black and white just won't do them justice, but take my word for it. These fonts are beautiful! Two separate packages are being offered: Toaster Fonts 1 contains four fonts with distinctive shiny and metallic surface. The fonts are called CHROME, GOLD, GOLDextruded and INFLATED. Toaster Fonts 2 consists of four textured fonts. in four different type styles. The textures are MARBLE, GRANITE, WOOD and BRASS (brushed). Each package lists for $99.95 and should be available in late July. For more info call KARA COMPUTER GRAPHICS at (213) 578-9177.

*NOTE: In last month's Toaster Tricks column I listed Louis Markoya's Map Master for Lightwave 3D at $55. This is the correct pricing for the Imagine version of the program, but the Lightwave 3D version of Map Master is $85. For additional information on this product, contact Computer Imagery at 49 Walnut Avenue, Shelton, CT, 06484. I apologize for any misunderstanding or inconvenience this error may have caused .*



Avid Feature!

# HOW IT WORKS: Time Base Correctors






Studio cameras, because they are totally electronic, can easily follow a drumbeat. Feed them a genlock or external sync signal and they will follow it. Character generators and computers with genlock cards are also able to follow an external sync input. This makes it possible to easily synchronize a studio filled with cameras, character generators, and electronic paint or animation systems; they can all synchronize their signals together precisely, making them mixable and switchable.

## Timing troubles of the VCR

VCRs, on the other hand, are ornery critters. Their mechanical motors vary in speed. If moved, their spinning video heads suffer gyroscopic aberrations. The tape stretches with temperature and age. All of this adds up to jitters and time base errors. Although VCRs with external sync inputs can approximate the cadence of the rest of the system, they can't do this precisely enough to make the images professionally switchable or mixable.

The solution is to send the VCR's signal to a time base corrector (TBC). The TBC swallows the video signal and meters it out at a precise rate in accordance with the house sync generator.

When a VCR plays back an image, time base errors cause some of the scan lines to occur a little early, some to occur a little late, some get stretched a little long, and some end up short. Sometimes the whole picture image gets played back in a tad less than 1/30th of a second, causing the image to shrink. TV sets are pretty forgiving of these time base errors. If a scan line comes a little early or late, the TV doesn't care; it just paints it on the

screen when it comes. Circles may get pie-crusty edges and the top of the image may flagwave every once in a while, but we hardly notice it. Such a signal is fine for viewing individually, but it is not "broadcast quality." The FCC demands that video signals adhere to strict timing accuracy if beamed over the public airways.

Copying an uncorrected video tape exacerbates the problem. The errors of the original tape are added to the errors of the recording VCR. If you edit or copy down three generations, then you get three layers of errors. If the errors get too great, even our trusty TV set won't stomach them.

The plot thickens when we try to mix video tape signals with other signals. Using a genlock, for instance, you can send a VCR's output to a computer and have the computer genlock to the VCR's signal. The final result will be a combination of the two images, but it will retain all the time base errors of the videotape. Put another way, the computer will follow the lead of the VCR's lousy drummer.

### Possible TBC hookups

Enter the TBC. By sending the VCR's signal through the TBC, the time base errors are corrected. The clean signal is then sent to the computer's genlock input so the two can mix neatly together.

Another possibility is that the VCR signal, after being time base corrected, can be mixed with other camera signals. For it to work, the VCR's signal must be not only smooth but synchronized with the other signals. Here's how it's done: The house sync generator feeds sync to the cameras, synchronizing them. It also feeds sync to the TBC that passes along a form of it (called subcarrier in, or advanced vertical) to an industrial VCR. The VCR now tries to follow the sync of the rest of the system, but cannot do so exactly. It sends its video back to the TBC that stores it and shifts it in time a little. Using the "system" sync sent into it as a guide, the TBC matches the VCR's video precisely with the incoming sync. With the two perfectly in tandem, the TBC pumps the signal out in perfect cadence with the cameras and other studio gear.

The TBC can even act as the house sync generator. It can generate clean sync that feeds the cameras. Meanwhile, it generates the signal that almost synchronizes the VCR. The VCR sends its video signal to the TBC which cleans it up to perfection, and then pumps it out to perhaps a switcher, ready for mixing with the other cameras.

Some TBCs, called frame grabbers, can fix tremendously large time base errors. It is even possible to feed home VCRs into such TBCs which can clean up and synchronize the video output with the rest of the system.

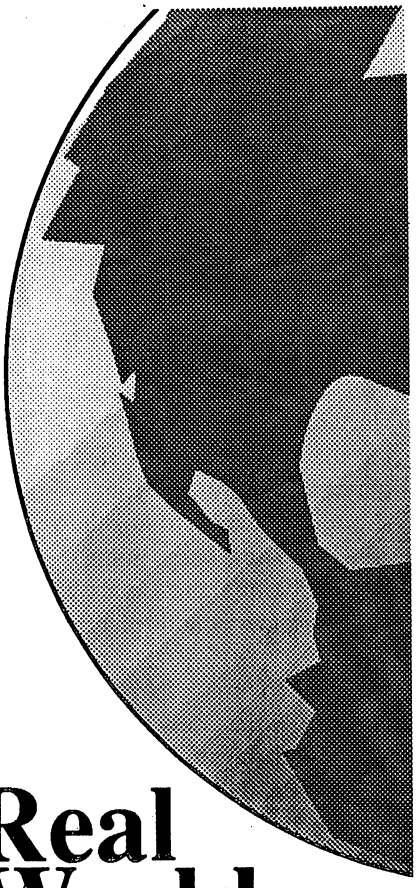
### What happens inside the TBC

The video signal comes into the TBC with an inconsistent drumbeat. It goes out with a smooth, synchronized drumbeat. How does this magic time machine work?

The incoming video signal gets digitized by the analog-to-digital (A-D) converter, which slices it into pieces, each piece being assigned a number. White slivers of picture get high numbers, while dark pieces get low numbers. These numbers are then turned into a code of ones and zeroes (the true meaning of "digital"), because electronic equipment can easily handle "ons" (ones) and "offs" (zeroes).

The digital information is stored for a moment, like a dam stores the surges of flash floods. A clock inside the TBC, acting on its own, or following the rhythm of another drummer (genlocking to house sync), creates a precise drumbeat to which it meters out the digits. These digits come out of the gate at exactly the right pace, regardless of what pace they entered the TBC.

Next, a digital-to-analog (D-A) converter converts the numbers back into voltages. Another circuit "smooths out" the wave a little, giving it the same shape as the original video vibration. Think of it as the digitizing process in reverse.



# Real World Applications

Sometimes understanding the science behind something explains why we do things a certain way, or how we troubleshoot problems. Do any of these actions make more sense to you now?

### 1. When to use a TBC

TBCs cost $1000 and up, so you don't want to invest in one if you don't need to. You don't need a TBC if:

a) You're just synchronizing cameras and computers together.

b) You're editing or copying a video tape from one VCR to another for home use or low budget industrial use. (Yes, a TBC will help, but its contribution will be minuscule compared to other, more important things like good script, lighting, or audio).

c) You can genlock your cameras, computers, character generators,

etc. to a VCR's video, just to get through one discrete edit. (Note: if you let the VCR drive the whole system through genlock, what happens if the tape plays a glitch or the VCR stops or wavers? The whole system stumbles. Doing a whole show locked to a VCR's sync is precarious, but doing just a short scene is feasible).

You need a TBC if:

a) You're mixing cameras, computers, etc. with a video scene from a VCR, but the VCR isn't scheduled to be playing throughout your whole show. (You expect to stop the VCR while the show keeps going).
b) You're mixing signals as above and you demand rock solid pictures and sync.
c) You plan to broadcast your work.
d) You're editing down 3 or more generations (hopefully with formats better than VHS and 8 mm).
e) You're doing high budget, high quality productions.
f) You need to perform A/B rolls --- two video taped pictures are mixed (dissolved, wiped, etc.) together and recorded (edited) onto a third VCR.

In general, most prosumers (i.e. wedding videographers, small industrial producers) don't need TBCs. If you shoot in VHS or 8 mm, you're probably not in the TBC league. If you're working with $10,000+ worth of gear, doing a show on a $3000+ budget, you may consider renting a TBC for a particular session. If you're working with the pros, then a TBC is expected.

## 2. Kinds of TBCs

A $10,000 TBC does more than a $2000 TBC. Why? Here are some differences:

a) Expensive TBCs sample the incoming video more times per second, slicing it up more finely and accurately, making a sharper picture. Check a TBC's specs. If the resolution is 240 lines, it's minimal. An excellent resolution is 400+.
b) Expensive TBCs use more "bits" to store the brightness levels of your picture. Avoid "7 bit" quantization and shoot for "8 bit" for smooth gray scales.
c) Expensive TBCs have larger windows, or correction ranges. Cheaper TBCs can fix tiny jitters, or half-corrected signals coming from VCRs locked to "external sync". These VCRs may be off by 6, 16, or maybe 32 scanning lines. Thus the TBC's correction window only needs to be 6, 16, or 32 lines large. If you're using a "free running" or home VCR, or playing a wayward tape, you need a TBC that can swallow big errors and fix them. If the TBC can fix an error of 525 lines (or full TV frame), it's called a frame grabber. It can fix almost any error coming into it.
d) Bigger TBCs have bells and whistles such as digital special effects, freeze frame, fast or slow motion picture, etc.
e) Professional TBCs work with component video signals as well as composite. They also have better signal-to-noise (S/N) specifications, resulting in less grainy pictures.

## 3. Cheap Tricks

If you want to dissolve (or wipe, mosaic, poster, push-on, etc.) from one videotaped image to another, you'll need 2 VCRs to play the tapes, one to record the result, an edit controller to coordinate the playing of the 3 machines --- and, a TBC for each tape player to keep their syncs together.

Some manufacturers make 2 TBCs in one box, plus they throw in special effects and other transition controls. The Alta Pyxis ($6250) will do poster, dissolve, fade, pull-on, push-off, and wipe between two industrial VCRs having external sync inputs. Alta's Pyxis-E ($8450) has a frame grabber capable of doing the above, plus freeze frames between any two VCRs, home or industrial.

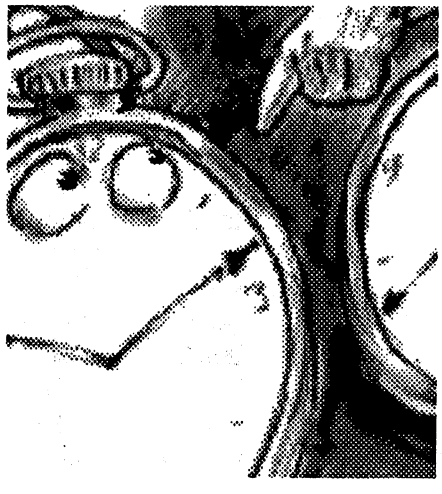
Shomi Corp. makes the $2995 Cheetah with two TBCs, but limits its internal effects to dissolves and still frames. Showline Video, a newcomer, also makes a dual TBC with dissolve, wipe, strobe, and still for $2695. Its single channel model costs $1895, and a "bare bones" TBC model with freeze frame only is $1295.

If top quality isn't necessary and you can accept the slight jitters of non-time-base-corrected signals, you have an alternative. Several companies make video mixers, devices that will --- breaking all the rules --- lock together two video players and do transitional effects between the pictures. They do not timebase correct the images, but using circuits like a timebase corrector, they mix the uncorrected signals together. It's like a genlock for VCRs. You can still find Panasonic WJ-MX10 mixers for about $2000. They would "grab" a still frame from VCR1 and mix VCR2's signal with it, resulting in a neat pseudo mix of the two signals. Some recent camcorders use this technique to make internal dissolves from the last recorded scene to the "live" scene.

Panasonic replaced the WJ-MX10 with two newer models, the WJ-MX12 ($3000) and WJ-AVE5 ($1800). Both perform real dissolves between VCRs (without time base correcting the picture), plus many effects. Both also sport S connectors for sharper colors. The WJ-MX12 is the industrial model with better specs and programmable memories.

Some manufacturers are starting to build TBCs into their VCRs (broadcast VCRs have had this feature for years). To name a few:

Sony CCD-V5000 Hi8 camcorder
Hitachi VL-S100 S-VHS recorder.



Avid Feature!

# Animating AutoCAD DXF files

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*EDITOR'S NOTE: Over the past year we've seen an increasing interest in importing DXF files from AutoDesk's AutoCAD into the Amiga and using its superior graphic and animation capabilities to enhance these renderings. More recently we've heard of Video Toaster users who have taken this to another level. The Syndesis Corporation produces a range of software utilities that assist in making the necessary translations for this type of activity. In this issue of AVID, we've invited the founder of Syndesis, John Foust, to share his considerable expertise and unique perspective on this process.*

An Amiga system brings together incredibly powerful yet affordable hardware and software. When new technology can do more for less money, new markets emerge. Video-resolution frame buffers and first-class 3D animation programs create a market for visualizing the world around us.

Syndesis Corporation makes InterChange, a system for translating data between many different 3D modeling programs. It is a modular system, meaning you can expand it by adding new programs that continue to work with other modules you own.

Lately our AutoCAD DXF translator has jumped in popularity. Amiga animators are discovering the market for animations of architectural and engineering drawings.

(Before I continue, I'd like to compliment AVID on its wisdom in allowing vendors to write about their products in the pages of the magazine. I see computer journalism from both sides. As a reader, I'm often disappointed by the lack of technical accuracy and depth in magazines. As a former computer magazine editor, I know how hard it is to find someone who is both highly skilled and capable of good writing. It's like an undiscovered rule of nature: if someone is good at what they do, chances are, they are so busy and well-paid that they don't have the time or incentive to write about it. If someone needs to write in order to eat, they'll write about anything without offending anyone, which makes advertisers happy but doesn't always impart much information to the reader.

When reading an article written by a vendor, the reader needs to exert more intellectual energy to winnow the truth from the chaff, but there is a greater chance for a pay-off in terms of truly valuable information. Back to the story of DXF...)

To be perfectly frank, if you think animating an architect's drawings is easy money, you're wrong. The rewards can be great, but it's no free lunch. At first glance, the problem looks trivial to solve. It's easy to see how the pieces fit together: You need 3D objects in a file format compatible with your Amiga animation program. The client has a drawing made in AutoCAD. The client can save the drawing in AutoCAD DXF format. You can buy a translator to go from DXF to the format you want. Sounds easy, right?

Wrong. Just like using a paper and pencil, an AutoCAD user is free to draw a house any way they like: as a series of connected lines, as a series of filled regions, as dozens of squares, or as dashed lines. In the ridiculous but not uncommon case, a customer might bring you a 2D drawing of three side-views of a building.

As the magical, high-paid 3D animator, you're expected to transmute a pile of 2D lines into a 3D fly-through. Your heart sinks. Perhaps the client doesn't really understand what 3D is all about. Or, they neglected to explain that the drawing is composed of only simple lines, not anything resembling the polygons you need for your Amiga program. What's the problem, they ask - after all, you said you could accept a DXF file, and they gave you one.

Obviously, no translation utility can integrate the three side-views into a perfect 3D object. Also, no translator can correctly join arbitrary lines into the polygons you need. You need a human translator. To satisfy this client and win the next job, you're going to spend the night in your modeling program, linking together those lines into polygons and triangles.

If your customer is still working with an older version of AutoCAD, or a compatible CAD program that can spit out a DXF file, they might give you a slightly more sophisticated version of the building. Maybe they worked in an overhead view of the building, but they've never seen a true 3D view. The walls might be represented with lines that have a given elevation and thickness. In other words, a 2D horizontal line is positioned somewhere above ground level and extruded to a given thickness, making something resembling a wall.

In an ideal world, a customer brings you a DXF file that represents a building purely as a series of polygonal faces. Unfortunately, the DXf format doesn't have many ways to represent faces. It does have plenty of other ways to represent things that look like faces, and this is your biggest problem.

## DXF background

First, some background on DXF files. It's enunciated "dee ecks eff." It's not "dee eff ecks." If I hear this mis-pronounced one more time, I'm going to scream. (Dyslexics of the world, untie!)

Filenames on the PC are limited to eight characters and a dot, followed by a three-character extension. A native AutoCAD drawing is stored in a file with a ".DWG" extension. DWG files are relatively compact, because numbers are stored in the computer's natural binary representation. AutoCAD can load them quickly.

Unfortunately, Autodesk does not publicize the DWG file format. Instead, Autodesk created the DXF format as a way to exchange drawings with other CAD systems. Most translators deal with DXF files, not DWG files. However, asking someone for a DXF file is a bit like asking for a hamburger at a French restaurant - they might serve you, but they're surprised you asked. On the PC, some tools have recently gained the ability to read DWG files. In fact, you can buy standalone PC utilities to translate from DWG to DXF. Such a program could be quite a boon to someone who doesn't want to shell out $3,000 for AutoCAD.

If you want your video business to profit from converting/enhancing DXF files, you should become comfortable poking around inside a DXF file. If you loaded a DXF file into a text editor, you'll see endless streams of numbers, separated by a few English words here and there.

DXF files are stored as ASCII text, meaning you can load the file into any text editor. However, ASCII is not the most compact way to store data. This is a diplomatic way of saying that DXF files are probably the largest, most bloated data files you'll ever encounter. It is perfectly possible that a client's DWG drawing could become a two megabyte DXF file. For that matter, most AutoCAD users are not very concerned about the size of their DWG drawing files, anyway. They buy the biggest, most powerful PCs available to side-step such concerns.

A DXF file stores the number "3.141592" as eight separate bytes plus the PC's two line-ending bytes. (This explains the reverse-M or ^M characters at the end of each line in your Amiga text editor. A good editor has a way to select a block of text and strip these extra characters from the file. This will not harm the DXF file, from the perspective of an Amiga translation program.) Each number is preceded by at least five bytes that explain what the number represents. DXF carries a lot of overhead.

Inside AutoCAD, you save a DXF file with the "DXFOUT" command. It asks for a file name and the precision of the floating point numbers, as the number of decimal places of accuracy.

A DXF file is broken into four sections, each preceded by the keyword "SECTION" and ending with the keyword "ENDSEC". The first two sections are "HEADER" and "TABLES". The next section is "BLOCKS", which contains definitions of standard sub-objects that are used in the "ENTITIES" section that follows. The "ENTITIES" section contains the actual objects in the drawing, represented by separate entities such as "LINE", "ARC", "POLYLINE", "3DFACE", etc. Each entity is followed by more number streams that describe it, such as the exact location of each of the four points outlining a "3DFACE". A "POLYLINE" is a series of line segments.

The AutoCAD Conversion Module that works with my company's InterChange program can convert only a certain type of DXF file, known as "ENTITIES only." If you give "e" or "entities" as the answer to the "decimal places of accuracy", AutoCAD lets you select the drawing entities to save.

An "ENTITIES only" DXF file has nothing in the "BLOCKS" section. Instead, all "INSERT"ed copies of "BLOCK" objects are burst out as separate entities that show up in the "ENTITIES" section. If any "BLOCKS" definitions are present, our translator currently ignores them. Someday, we may expand it to parse the "BLOCKS," too. An "ENTITIES only" DXF file is larger than a "BLOCKs and ENTITIES" DXF file, but the "ENTITIES only" file has the added advantage of giving you a better idea of how many polygons are actually in the drawing.

For example, the "BLOCKS" section of a "BLOCKS and ENTITIES" file might contain a single definition of a very complicated window. The "ENTITIES" section of this file might contain 1,000 "INSERT"ed copies of this window, keeping the DXF file relatively small but ballooning the final size of the Amiga 3D object after translation. Of course, saving this building as "ENTITIES only" will give you and your customer a better feel for the true size of objects in the drawing.

### File transfer

To ask a fundamental question, how does a client bring you a DXF file? Chances are, they can't supply it on an Amiga floppy. Most PCs now have a 3 1/2 inch floppy drive. With an Amiga utility such as Dos-2-Dos or CrossDOS, you can read and write 3 1/2 720K IBM PC floppies in an ordinary Amiga drive. Be careful, PC drives can also write 1.44

megabyte high-density floppies but the Amiga can't read them. Other possibilities include sending the file over a modem or across a network.

To reduce the bulk of the DXF file, ask the client to archive the file using a program such as PKZip. Most PC owners have this utility. It can easily compress a DXF file to a tenth of its size, letting it fit on a 720K floppy. There's an Amiga version of PKZip that can decompress the file to its original size on your hard disk. Other comparable utilities are LHarc and ARC.

## Natural limits

When that five-megabyte DXF file is translated to an Amiga object, it's very possible that you won't have the memory or the horsepower to render it effectively. Every Amiga 3D program has its limits. Some programs must hold the entire scene in RAM memory, plus extra memory for the image and the program's data for calculating the image. On a nine-meg Amiga, LightWave has a limit of about 32,000 polygons. Impulse's "Imagine" program uses a virtual memory scheme that eliminates the need to keep all objects in memory, but you'll still be limited by rendering speed. No matter which program you use, adding an excess of tiny, gratuitous polygons only leads to wasted RAM and wasted time.

You probably don't have the time to render more than a few seconds of motion. If you want to make five seconds of animation at 30 frames per second, and each frame takes four hours to ray-trace, then you'll only generate six frames a day. It will take 25 days to render this animation. Ray-tracing is out of the question.

Even with less time-consuming shading techniques, total object size directly affects rendering speed. Reducing a frame's rendering time to less than ten minutes means you could produce this animation in about 25 hours. (Or, you can take the Todd Rundgren approach to animation: just buy ten Amigas and ten Toasters, and start them all rendering sections of your animation in parallel, and THEN render for 25 days straight).

## MORE PROBLEMS

There are other DXF stumbling blocks. AutoCAD suffers from a high piracy rate. Your client might not have the manual for the program. (If you are principled, refuse the job. Their piracy proves they're ready to cheat people such as Autodesk who aren't there to defend themselves, and you might be next). Or, your client might not be familiar with AutoCAD, and you've got to be prepared to explain exactly what you need. Many architectural offices employ draftsmen

who do nothing but work in AutoCAD all day. Chances are, they're not the person who's asking for your services.

AutoCAD has been through several revisions in the past five years, from version 2.5 to 2.6 to Release 9, 10, and the most current version, called Release 11. Each version can represent 3D entities in different ways. In real life, AutoCAD drawings are an amalgam of standard library doors and windows drawn five years ago, plus new entities drawn yesterday.

Because of this, making a DXF translator is an endless job. I know a programmer at a CAD company who works on a DXF translator. More than two years later, he's still fine-tuning it. What needs to be tuned? For example, do you want POLYLINE variable line width segments to be translated as lines or as four-sided polygons? Someone can draw an extruded, thick wall with a POLYLINE that has segments shaped like wedges. Do they expect you to translate it as a line down the center, as two rectangles spaced apart, or as a four-sided tube? Do you want pen numbers translated as certain colors, or should layers get different colors, too? How should the drawing be split into a hierarchical object when translated to Imagine format - with layers as objects, pen colors as objects, or with "BLOCKS" as objects?

The simplest DXF translators will reject everything except for 3DFACE commands, for example. Anything drawn with POLYLINEs or LINES will be ignored. More sophisticated translators turn simple LINEs into polygons. They give you ways to control how the multitude of DXF entities will be translated. For example, you want to approximate ARCs and circles as a series of line segments, at a smoothness appropriate to the object. The Syndesis DXF translator lets you set a minimum number of sides per circle, and a maximum length per side segment. Together, these provide maximum flexibility when approximating circles and arcs.

## Syndesis products

Syndesis does have a competitor in the DXF translation business (ACAD Translator). Because of the many different ways you can translate a given set of DXF entities, the two translators are very different. Among other features, our translator allows you to customize the mapping of AutoCAD pen-plotting numbers to polygon surface attributes such as color and texture. We create true three- and four-sided polygons, not just triangles. In polygon-based programs such as LightWave, an excess of triangles is a serious limitation. We can also save both 2D and 3D DXF files, meaning you can export your Amiga objects to other CAD systems, too. Many other CAD and 3D programs can load DXF files, including programs on the Mac, mainframes and workstations. DXF format is a popular way to move 3D objects to other machines.

I'll bow towards fairness by quoting Brent Malnack from his May 1991 column in AV Video magazine, where he discusses CAD rendering on the Amiga: "I would own both the ACAD Translator and InterChange with the AutoCAD Conversion Module. Until one of the programs adds some capabilities, you'll want them both." Malnack also recommends buying an Amiga CAD program such as DynaCADD that can manipulate DXF files.

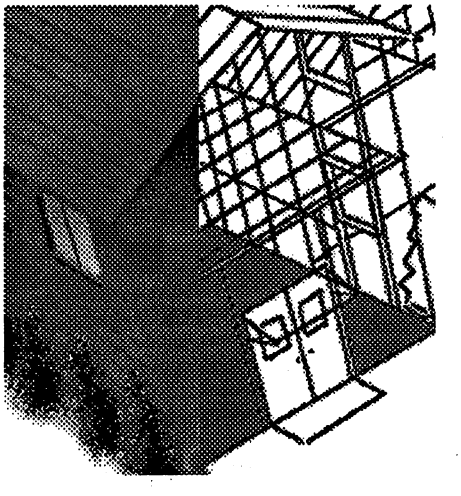
AutoCAD DXF is not the only high-end translator available for InterChange. We also sell modules for Wavefront ".obj" format and Digital Arts "AOB" format. Both modules read and write those formats, and include support for translating the surface and material library files for those systems. We also have modules for Sculpt 3D and 4D, VideoScape 1.0 and 2.0, LightWave, Turbo Silver, Imagine, PAGErender, Forms In Flight, Atari ST CAD-3D and the public domain raytracers DKB and QRT. (Our Turbo Silver module will work with Imagine, loading and saving objects. However, we are currently enhancing the module to take advantage of Imagine's extra features).

Some InterChange modules are tools, not translators. Our Turbo Silver Module Pack includes three tools: The PointReduce Tool removes excess points from objects. The Scale Tool is a very precise way to set the size of an object. The GridSnap Tool aligns the points of an object to a grid, removing unnecessary tiny polygons. The Pack also includes the Statistics Module, which creates an easy-to-read ASCII file that describes everything about your object, such as point locations and face colors in RGB, decimal and English color names.

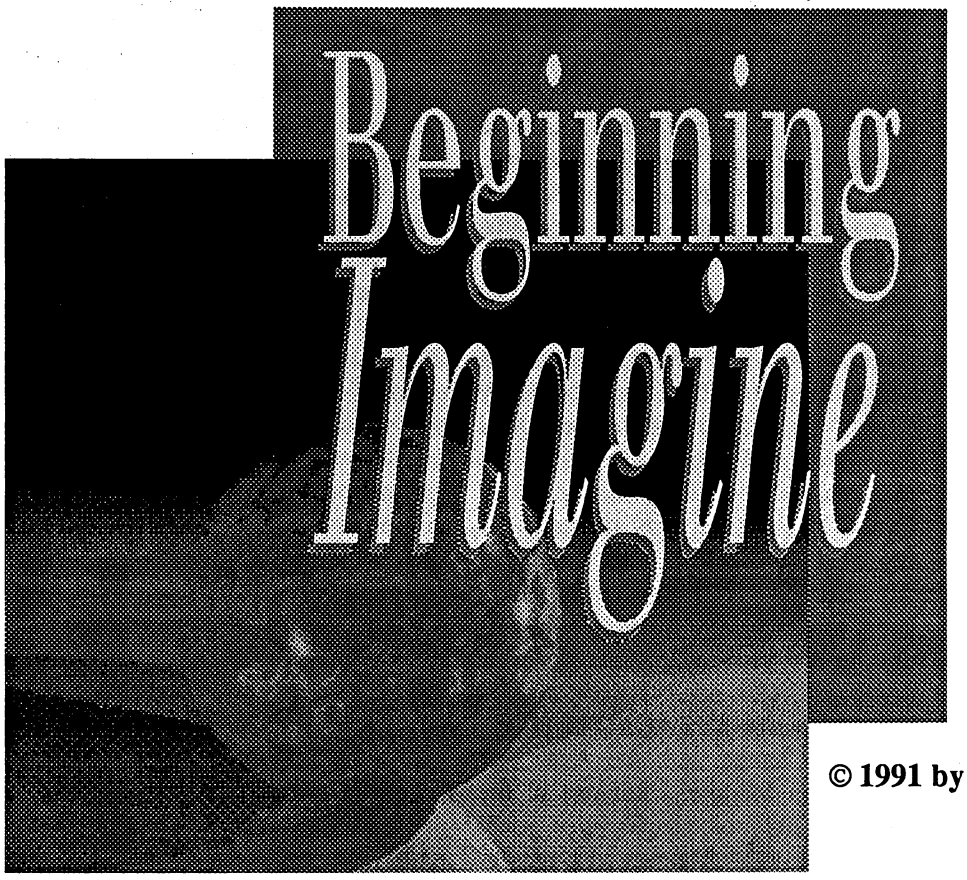
Our InterFont product makes it easy to create 3D text objects. It includes all of InterChange, plus an outline-based font editor. With a simple titling program, you select a font, enter text, set its attributes such as texture, size, extrusion, and smoothness. Press a button and out comes a 3D text object, in any InterChange-supported format. *[EDITOR'S NOTE: Some companies bypass the conversion step and offer fonts already in InterFont format, and ready to be manipulated in 3D programs. Selected fonts from the Masterpiece Font Collection (Data Grafix) are one example].*

It should be clear that Syndesis intends to make worthwhile tools for professional Amiga animators. We support our products. Our bug fixes are free and our upgrades are always affordable. Feel free to call if you have questions or if you'd like literature describing our products.

Syndesis Corporation N9353 Benson Road Brooklyn, WI 53521 (608) 455-1422 (608) 455-1317 FAX



# Beginning Imagine Part I





*EDITOR'S NOTE: When Mr. Duberman's popular "Beginning Turbo Silver" column concluded, he turned his attention to Impulse's latest release, Imagine. Within months he had published an excellent book on the subject called, "The Imagine Companion". We've invited him to share his considerable experience with Imagine in this new AVID series called, appropriately enough, "Beginning Imagine: Part 1"*

*If you have questions about "The Imagine Companion", this column or Imagine in general, you may contact David Duberman c/o: AVID Publications, 415-112 N. Mary Avenue #207, Sunnyvale, CA 94086*

One of the reasons many people find 3D computer graphics so compelling is that it's the perfect marriage of high-tech and esthetics. If you pay attention to the world around you, you know that high-tech is an important part of our lives, and if you appreciate beauty and ugliness then you've got esthetic sensibilities. No doubt more than a few Amigas have been sold because they place high-end computer graphics capabilities in the hands of those with relatively little money, i.e. most of us.

Of course, without software the computer can do nothing. If you'd like to create 3D computer graphics on your Amiga, you'd be hard put to find a better program than Imagine, from Impulse Inc. Currently it's the most powerful all-around 3D modeling, ray-tracing and animation package for Amiga computers.

While Imagine is one of the user-friendliest 3D programs to date for any computer, there's still a certain amount of information you need to know before you can become a proficient user. In this article I'll attempt to help you over the initial learning curve by explaining the basic concepts necessary for starting to gain a thorough understanding of Imagine. I'll start with a brief look at object structure, then go on to discuss the Imagine user interface in detail. As a matter of convention, I'll capitalize Imagine command names.

## Objects in Imagine

To render a picture in Imagine you

must use one or more objects; there's no getting around it. Imagine's Detail editor offers a number of built-in shapes including sphere, plane, cone and cylinder; and there are a number of ready-made objects available from outside sources that you can just load and render. Eventually you'll want to create and manipulate objects to help put your own unique stamp on your 3D creations. That's when it becomes important to understand how objects are constructed in Imagine. There are a couple of special-case objects such as non-faceted sphere and ground that are basically non-editable, and which we'll avoid discussing here.

In Imagine, an object is made up of several different types of elements; there are vertices, edges, faces, and of course each object has its own axis. An object's structure is determined by a set of points in space called vertices. A point's location is defined by three numbers; the X, Y, and Z-axis position.

In most objects the vertices are connected in threes by triangular polygons called faces. You can also connect vertices with lines called edges. This can be somewhat confusing because the side of a polygon is also called an edge. However, three points connected in a triangular shape by edges does not constitute a polygon. Since edges aren't visible when rendered in Imagine, they're generally not useful in solid objects, but used only for extrude paths and to create outlines for extrusion or lathing. Incidentally, points are invisible as well when rendered in scanline or trace modes; you can only see an object's faces.

The structure of points defining an object's shape is sometimes called a polygon mesh, which is a good analogy if you think of them as a sort of fisherman's net draped tightly around the object. The points are arranged in groups of three; each group defines a triangular polygon which is one of the object's facets. These polygons can be moved, resized, rotated, and even reshaped, but they always remain flat.

Note that most objects in reality are not made of perfectly flat triangular faces; instead there are many curved and irregularly- shaped surfaces. That's why an object in a 3D program such as Imagine can only be at best a close approximation of its real-life counterpart. To depict a complex object very accurately you must use many vertices and polygons, which causes increased memory consumption and rendering time. Thanks to the new Fracture command in Imagine 1.1, you can subdivide faces or groups of faces only where extra complexity in an object is necessary. Since most Amigas don't have unlimited memory, your 3D objects will always represent a compromise between quality and available memory; only you can determine the point at which an object is "close enough".

## The Project Editor

The Imagine user interface consists of five editors; Project, Detail, Forms, Cycle, Stage, and Action. The program starts you out in the Project editor, which is where you set file names and destinations as well as project parameters. To render images with Imagine, you must first Open or create a New project. In the latter case, Imagine creates a drawer with the name you specify plus ".imp" at the end. For example, if you create a project named "Myproject", Imagine creates a drawer called "Myproject.imp". By the way, the program doesn't create icons for any of its files, so if you want to move files around or delete them, you must use the Shell/CLI or a DOS utility programs such as Diskmaster.

When Imagine creates a new project drawer, it also creates a file and another drawer inside the project drawer. The file, called Staging, contains all information created in the Stage and Action editors. Use of the drawer, called Objects, is optional. It's a good idea to use a project's Objects drawer to save objects to be used only in that project. However, if you create objects also intended for use in other projects, you may wish to create a "public" Objects drawer in your Imagine drawer (or on a separate disk for floppy drive users). That way you can avoid wasting time rummaging around through all your different projects' Objects drawers trying to find a particular object. On the other hand, a public Objects drawer, unless carefully maintained and/or subdivided thematically into subdrawers can become unmanageably large in time.

There's a second step necessary before rendering pictures in Imagine, which is to open or create a subproject. A project can have any number of subprojects, each of which uses the same Stage setup. This is a great idea on Impulse's part, because it lets you render the same setup in different graphics formats. For example, in a large project you might use two subprojects; one for small test renderings while setting up, and another for the larger final rendering. This way you can retain the images rendered in the first subproject for reference.

When you start a new subproject, Imagine creates a drawer inside the project drawer using the name you specify in the file requester, appended with ".pix". For example, if you give your subproject the name "HAM-qs" (qs stands for quarter-screen, one of the subproject parameter presets), the subproject's drawer name is "HAM-qs.pix".

After you name the subproject and its subdirectory is created, the program presents you with a requester bearing the formidable title "Parameters for Rendering Subproject". Here you specify the rendering method, picture and pixel sizes, path for stills, file format, Amiga view mode, path for movie (animation), and animation file format. We'll cover each of these in turn.

## Rendering Methods

Your choices for rendering method are B/W (black-and-white) Wire and Shade, Color Wire and Shade, Scanline, and Trace. B/W Wire is analogous to the Perspective view in the Stage (or Detail or Forms or Cycle) editor when you've selected the Solid command from the Display menu. You see a wireframe view with hidden line removal--you can't see surfaces hidden behind other surfaces. This is useful for very fast animation tests at resolutions higher than that used by the Stage editor's Make command, or

for keeping permanent records of such tests.

B/W Shade is similar to the Shaded Perspective view, which of course is visible in the Stage editor only when the Perspective window is expanded to fill the screen. There's one significant difference, however; lighting in the shaded Perspective view always consists of a single point source at the camera's position, while the B/W Shade mode reflects the true lighting conditions as set in the Stage and Action editors, including ambient light. This mode is useful for quick tests of lighting setups, understanding that since each polygon can have only one color, shading effects are crude at best.

Color Wire and Shade are very close to B/W Wire and Shade, brought one step closer to realism via the use of color. In Color Wire the polygon outlines are the same (or similar) color as the object to which they belong. And Shade correctly renders multicolor objects as well as ambient light color.

Imagine's default rendering method is Scanline, which accurately depicts almost all aspects of a scene including object smoothing, brush and texture mapping, and transparency. Scanline mode even does environment reflection mapping, in which reflective objects contain reflections of the sky and ground. However, you must use the Trace rendering method to have objects cast shadows and reflect other objects around them. This is the most time-consuming mode, though; a complex scene with many reflections and shadows can take hours or days to render. Scanline is many times faster than Trace in most cases, so in general you should only use Trace for a final rendering.

## Size and Aspect Ratio

The next section of the Subproject Parameters requester lets you set the size of the image as well as its pixel aspect ratio, which determines whether or not objects appear "squeezed" in the rendered image. The Presets gadget on the right side gives you access to a user-modifiable list of useful size settings such as HAM, Lo-Res, Hi-Res, plus quarterscreen settings for quick renderings at a reduced size. All presets include the proper X and Y Aspect settings. Try selecting a few of the different presets and note the corresponding X and Y Aspect settings.

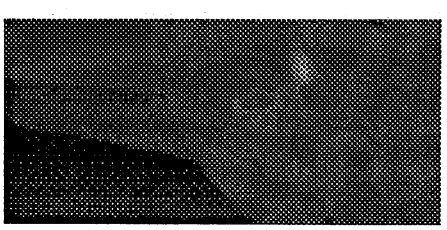
In Imagine, the pixel aspect ratio is the relative pixel width divided by its height, whereas in most other applications it's Y over X. So for perfectly square pixels, you'd use 1/1, or 1. On the Amiga, the low resolution (320 x 200) and high resolution (640 x 400) graphics modes use pixels the closest in shape to square, so Imagine's presets use the pixel aspect ratio of 6/7. In most other programs this would be expressed as the decimal fraction which is the inverse of that number, or about 1.17.

Consider, on the other hand, the "Laced HAM" mode which uses a screen resolution of 320 by 400. In this case there are twice as many pixels in the vertical dimension, which means that pixels are now about twice as wide as they are high. Therefore, the pixel aspect ratio must be adjusted to account for this fact; we must tell the program to use wide pixels, either by halving the Y component or height, or by doubling the X component or width. Since Imagine doesn't use decimal fractions as components of the X and Y Aspects, we can't use the former tactic, which would result in a Y factor of 3.5. Therefore, when you select a 320 x 400 mode the program simply doubles the X Aspect to 12, retaining the Y Aspect of 7.

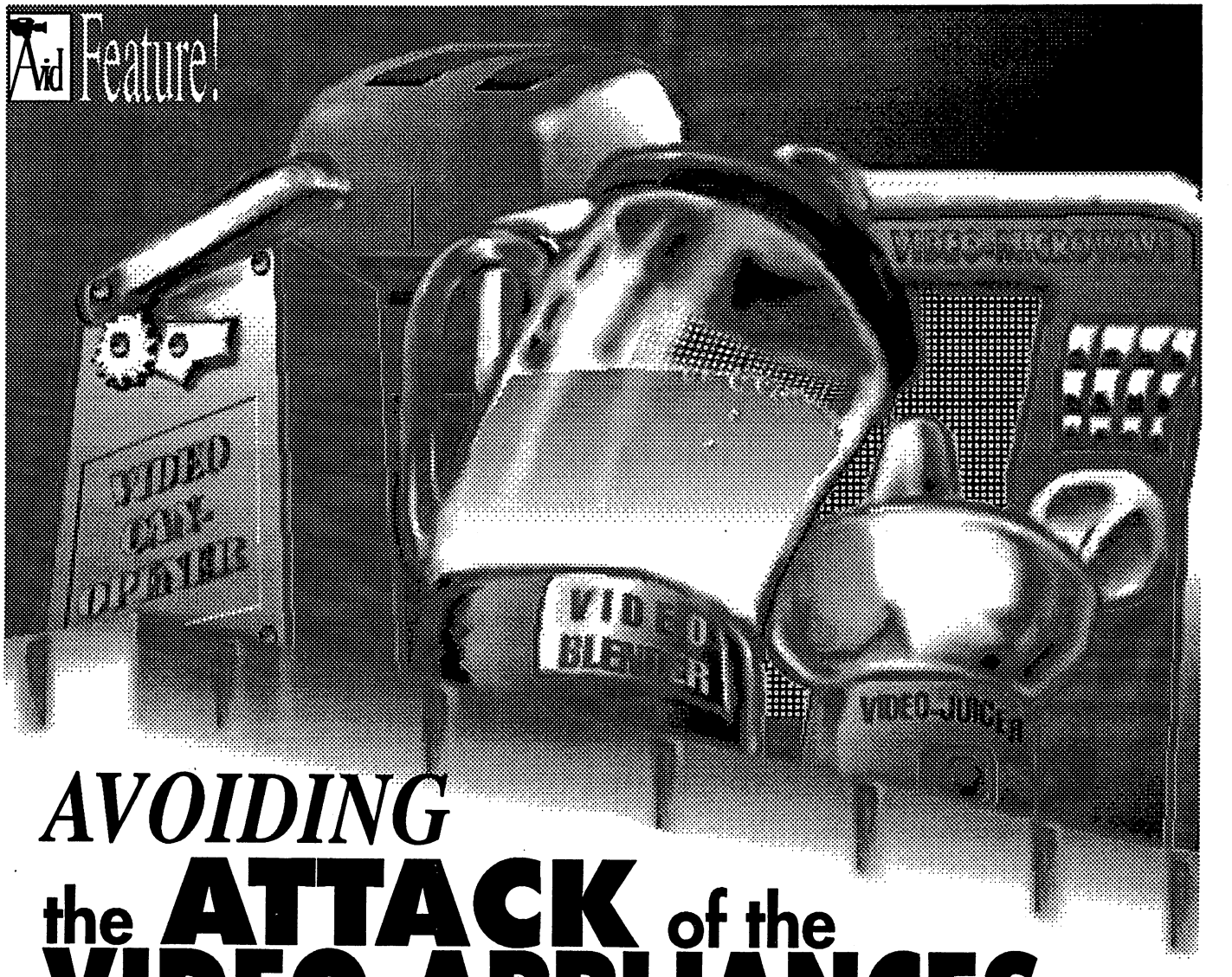
If you wish to use a resolution of 640 by 200, which is not one of the presets, to preserve the correct aspect ratio in your image you must halve the X Aspect to 3, keeping the Y Aspect at 7.

The outline of a sphere, when rendered, in most cases should be perfectly circular. If the pixel aspect ratio is too high, the sphere appears vertically oval, or squeezed from the sides. You've probably seen this phenomenon when theatrical movies are broadcast on TV. During the initial or closing credits the picture is usually horizontally compressed using a special lens so that the titles aren't cut off on the sides. On the other hand, if the aspect ratio is too low, the sphere appears horizontally oval, or squeezed from above and below. The only way to gain a thorough understanding of the aspect ratio is by experimenting with it, and I strongly encourage you to do so. Since you're only concerned with object shapes, I recommend using the B/W Wire rendering method for the fastest possible results.

That concludes the first part of our in-depth introduction to Imagine. In the next part we'll examine the remaining sections of the Rendering Parameters requester and start to look at the Detail editor.

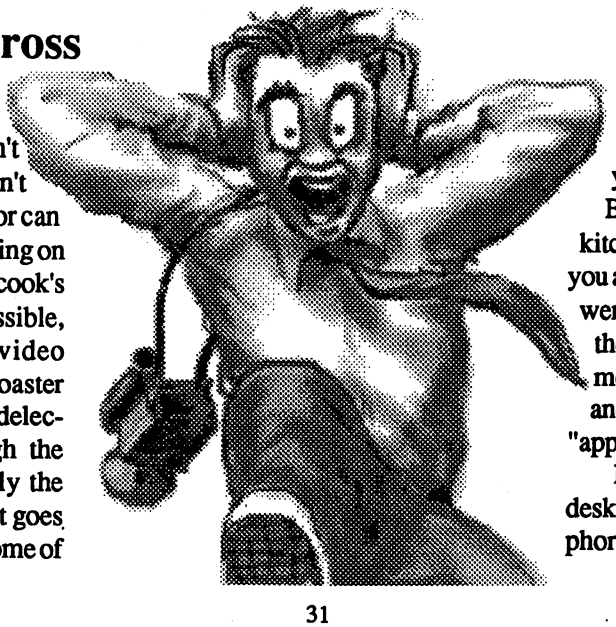


Avid Feature!




# *AVOIDING* the ATTACK of the VIDEO APPLIANCES

**©1991 by Jay Gross**



Just as every kitchen doesn't have a toaster, every Amiga doesn't have a Video Toaster - or blender, or can opener, or whatever else. So, building on the breakfast metaphor, here's a cook's tour of the tasty treats that are possible, affordable, and doable in a video "kitchen" that isn't blessed with a Toaster - for whatever reasons. The fare's delectable, just the same, even though the "appliances" are different; it's only the showy sauteing and scalloping that goes lacking. Indeed, unless you need some of the Toaster's fancy video effects, you might not need a Toaster at all.

Besides, another reason your video kitchen might not have a toaster is that you already had a microwave oven. There were plentiful Amiga video boards on the market before the Toaster finally moved from airware to kitchenware, and you might have invested in those "appliances" during the long wait.

For reasons known only to NewTek, desktop video is awash in kitchen metaphors. All the better for the punsters

among us. Okay, enough awful puns, temporarily. Fact is, NewTek's Video Toaster's only connection with breakfast food is that NewTek gets to buy a lot of fancy breakfasts with the money they get from you for one. Suppose, on the other hand, that you already had an internal genlock device in your Amiga 2000/2500. A nice one. SuperGen 2000S, for example, or maybe Magni 4004. These babies cost more than Toasters, and in breakfast parlance, they cook up some nice video, too - although they don't do the sizzlin' digital effects that Toaster offers. If you just need titles on the screen, these and other genlock devices will deliver that, and nicely, and with your choice of titling programs, a large library of nice fonts, and an ease of operation that the Toaster doesn't boast.

Or suppose, again, that you've invested in one of the external genlock devices. Neriki, SuperGen, VidTech, Omicron, or others. Do you pawn it all and your Hondacar to buy a Toaster? While quite nice and very powerful, the Toaster isn't the only appliance in the "kitchen." You can do a lot of nice work with those other doodads, too - can openers, dishwashers, muffin makers - many of which you may already have at your shall-we-say. . . disposal.

Titling is quite at home on a normal genlock device, without the help of a Toaster. In fact, titling without a Toaster can be much quicker and simpler than with one. All you need is a simple genlock device and some software. The video and computer businesses disagree somewhat on what the term "genlock" means, but in computers (and kitchens?), it means a contraption which mixes Amiga graphics with incoming video from a camera, video tape machine, or whatever. The Amiga's screen is "superimposed" over the video, and the combined picture goes out to your recorder and is generally pre-viewable on your monitor. Genlock devices are an excellent way to get some work done while watching baseball games. You plug the broadcast or cable video signal into the genlock, and superimpose the Amiga screen. The color of the Amiga's background is usually set to "0," and you see the game everywhere there's a background color. Note that not all programs (and not even all genlock devices) are friendly to this idea. Also note that "color 0" refers to a programmer's term for the way a color choice is addressed; it has nothing to do with the hue of the color.

Over on the video side of desktop video, the term "genlock" means something slightly different, but closely related. There it means "agreeing on a sync," or sending one out (devoid of any picture information, just the sync). In either case, of course, the term "sync" has nothing to do with kitchens, but the pun possibilities are just too tempting.

**"The existence of the Video Toaster has put pressure on the internal genlock makers to get out of the way "**

With genlocking going on, instead of baseball behind the graphics of your computer screen, you get Cousin Sam and his new wife Becky at their Wedding. Neat if the computer's graphics are letters that read "Sam and Becky, 3 p.m. April 31st." Huge. Centered in the screen, along with the logo of your video production service blazing forth from over in the corner. Or maybe you do get baseball, after all. "The Little League Blue Devils." The point is that you "genlock" the Amiga's graphics display - which is the titles and logos and such-- over the incoming video, so that you can record to a second generation which contains both elements.

External genlocks for the Amiga start under $200 for purely amateur quality, and jump to $750 or so for Digital Creations' external SuperGen (The 2000S is $1800). A Neriki starts in the $1000 range and goes up to $2500 if you opt for absolutely all the bells and whistles. VidTech's ScanLock is now out in a new model that works in separated video ("S" video, or "S-VHS," as well as Hi8 and other formats) throughout. The Toaster, on the other hand, is only NTSC.

If you've been into video longer than NewTek has been into kitchen appliances (which is only a few months), you've probably already invested in one of these titling programs, and invested the time it takes to become proficient with it, too. Amiga titling programs come in a wide range of prices and capabilities, from the terminally simple to the fabulously complex. They can animate, too, and even produce many of the Toaster's special effects by generating animations that you can record in real time.

Some simple Amiga titling programs include Hash Enterprises' Animation:Titler, which fits into an entire range of software for doing related work in video. Animation:Titler's titles can be zinged into and out of the screen by setting them up to do so during the creation process. The program will handle enormous font directories (though of course using more than a few at once is considered bad form), and it doesn't require specialized fonts. Just feed Animation:Titler standard Amiga fonts in fairly large sizes and it's happy. Another simple titler is TV*Text and TV*Text Professional, whose titles can be animated with TV*Show, all three from Zuma Group software. Zuma's titling products also use standard Amiga fonts.

A more elaborate approach is Broadcast Titler, and the more video-esque approach - closely following traditional video-industry standard equipment - is Pro Video Post, from Shereff Systems. Broadcast Titler and Pro Video Post are among the "special" fonts pro-

grams. These programs want special fonts in special formats that the Amiga doesn't come with out of the box. What you give up in inconvenience, however, you gain in looks in the end product. Pro Video's titles are even anti-aliased, if you have enough memory to do the job (three megabytes is sufficient).

These aren't the only titler softwares on the shelves, but they're representative. To get them to work over live video, however, you need a genlock device. However, you don't have to have a titling program to do titling. Good ol' Amiga paint programs which have animation capabilities (such as DeluxePaint III) will do the job nicely. Depending on what you're doing, it might even be easier to use a paint program than a titling program that's specific to the task.

Aside from not occupying the space that a Toaster requires inside your Amiga, external genlock devices have the advantage of being portable from machine to machine. So, if you have more than one Amiga, you can own just one quality genlock device, and attach it to whichever of your Amigas you need without opening up the computers. Another good reason to go external with your genlock device is that you won't occupy valuable slots in your computer that you might need for something else. External genlocks are also not terribly picky about which Amiga they work with, and you can use them on Amiga 500's and 3000's, neither of which will accommodate Toasters (NewTek says Toaster can be made to fit in a 3000, but won't work reliably).

The existence of the Toaster puts pressure on the internal genlock makers to get out of the way. Leading the way in getting out of the way is Digital Creations, which has announced a version of their 2000S genlock that mounts externally, as well as a box that will permit you to move an internal 2000S out of the machine. MicroWay blazed this trail a few months back by making the DEB, a board that permits mounting their flickerFixer board elsewhere in the 2000/2500 computers besides the precious video slot.

Even without "The Toaster Question" to worry about, another reason to own an external, rather than internal, genlock device is the Amiga ChromaKey device, a brand-new peripheral by MicroSearch. This magic box allows you to do "The Weatherman Trick." That is, superimpose a live, moving video picture over the Amiga graphic screen. This is the reverse of the normal genlock effect, which is graphics "keyed" over video, not video over graphics. The video term "key" means replacing one picture component with another. NewTek's Video Toaster has built-in keying, but it's based on brightness, not color. "ChromaKey" means that the picture replacement is based on the color component of the video signal. Usually, a hideous, blue-green background is used (ChromaKey comes with a sheet of plastic of the right color), and when the electronics has done its thing, the incoming video is substituted in the picture every place the hideous blue shows up.

You don't need timebase correctors or sync generators to do video titling without a Toaster, but unless you use one of the frame buffers or display improvement devices, you'll get the Amiga's vanilla graphics screens, rather than the much higher palettes that video buffs drool over. These boards include DCTV, by Digital Creations, Ham-E by Black Belt Systems, and FireCracker 24 by Impulse. DCTV is a slow scan digitizer, display enhancer, and large-palette (16 million colors) paint program all in one. This connects to your RGB and parallel ports (it doesn't covet the Toaster's preferred real estate, the video slot). The output of the DCTV is an excellent NTSC video signal, so it's suitable for still-frame, still-store, and single-frame animation applications. Too bad Digital Creations wasn't onto the breakfast metaphor when they did the DCTV. It'd be easy to name its pictures something like "Hotcakes," and the device itself the "Video Griddle." It sets you back around $500 at list price. Butter and syrup optional.

Ham-E is another external display enhancer for the Amiga. It takes an oddly configured Amiga HAM image and translates it in external hardware to an image of higher color resolution. The uses are about the same as for DCTV, but Ham-E doesn't digitize. It lists for half the price of DCTV, too.

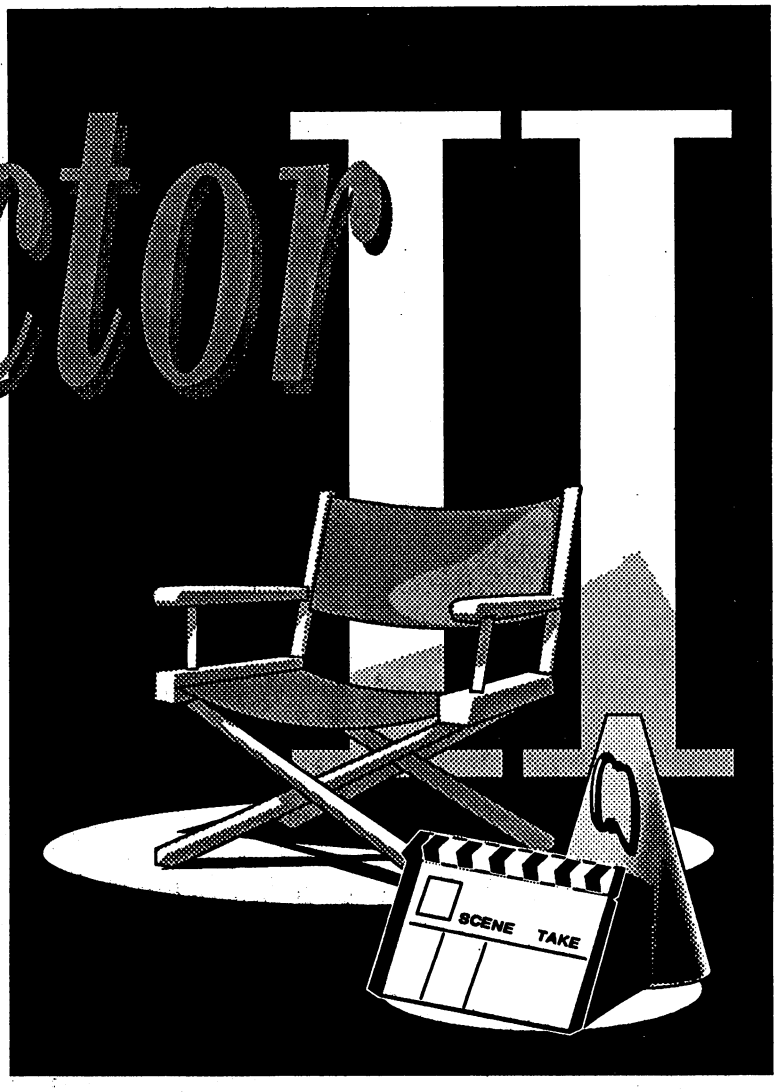
Toaster, DCTV, and Ham-E all display an NTSC picture to any suitable monitor (or television set), and although the quality of the image they produce is excellent, the limits of the NTSC standard itself start showing if you do things brashly. Like juxtaposing complementary colors (cyan and magenta, for example). To sidestep the limitations, you must move away from the world of video-tapeable signals (meaning NTSC) and into the prettier, purer world of 24-bit RGB color. This is where the FireCrackers blaze. FireCracker 24 is a true, 24-bit frame buffer. That means you can display a raytraced image done in 24-bit mode on your Amiga monitor in its RGB analog mode. FireCracker goes in a non-video slot inside the Amiga, and sends its signal out the back. At this writing, Impulse has just dramatically reduced the price of the FireCracker boards, and made many improvements to the Lite24 paint program that it comes with. There are several configurations bearing different amounts of memory to support various resolutions, so check with your dealer for the new pricing. The highest-end one is now around $1000.

Just as there are many titling programs, there are also many other display enhancers, including those from Mimetics, M.A.S.T., and others. With most of them, you can have your Toast, too, if you want.

Genlocks, ChromaKey, Titling, and animation...it's a breakfast banquet, even without any toast. Sample the fare... and pass the marmalade, please. Oh, and just when you thought all the kitchen puns were used up, Mike Berro, the brilliant author of a lot of neat Amiga video programs for MicroIllusions, has one more. He calls his new video utilities collection "Video Tools on Tap."

Avid Review!

# Director II




©1991 by Michael D. Brown

You say you want to be the Cecille B. Demille of desktop video? Be the producer of a multimedia masterpiece? Well, the first thing you better do is get yourself a good director.

Perhaps the Director 2 from the Right Answers Group will fill the bill. It's a significant upgrade of the original Director scripting language. Wait a minute! "Scripting language?" you ask. What exactly is that? Well, I suspect it is a term coined to avoid frightening non-programmers. Because when you get right down to it, that is exactly what the Director 2 is.

Does that mean you have to be a programmer to take advantage of some of its unique videographic and multimedia capabilities? No, but you will have to learn some simple programming concepts. There's no way around that. On the positive side, the skills you develop will carry over to other languages or programs with language-like environments. If you have ever wanted to learn a computer programming language, the Director is not only a fun and easy way to start, but the results can make a major impact on your video productions.

As for you programmers (there are programmers among you, right...right?), I'd describe the Director 2 language as a small C with a BASIC accent. You'll find GOTO's and global variables, but no line numbers, so you can keep things as structured as you like. You C programmers will feel right at home handling files using OPEN, READ, SEEK, etc. The bulk of the language is, however, made up of the Director's own unique and powerful commands.

Because The Director 2 is a programming language, it can tackle a very broad range of tasks. Its command of the

Amiga's graphics and sound means you could use The Director 2 to create some awesome games (it even controls sprites). Multi-media applications are another possibility. And you could create stand-alone utility programs which would, for example, allow the user to load DPaint format ANIM files, convert them to ANIM Brush (i.e. OP 5 XOR) format, and save the converted files to disk (in fact, the "script" for just such a utility is included with The Director 2).

But the potential uses of The Director 2 which are of most interest to AVID readers are its applications for video work. In this article we'll explore how The Director 2 fits into your chest of video tools.

First off, it won't replace graphics generation programs like DPaint or Disney Animation Studio (although you could write a decent paint program using The Director 2's graphic commands, such as DRAW, FILL, CIRCLE, and so on). Similarly, The Director 2 will probably not take the place of your favorite character generator program. However, it can do many of the things your CG program can. Commands can load several fonts into memory and then switch between them, display your text right from the program or load it from a text file, change the text's color, style (bold, italic, underline), complete with automatic word wrap, even drop shadows in the color of your choice.

The Director's closest relatives in the DTV arena are what are commonly referred to as authoring systems: AmigaVision; Deluxe Video III; CanDo; ShowMaker; TV*Show 2. On the surface, all these programs look very different from The Director 2 (and from each other), but their purpose is the same: to allow you to precisely coordinate sequences of video and audio events.

The most powerful of these are, like The Director 2, actually programming languages, no matter how mightily they may try to disguise themselves as something else.

And try they do. In TV*Show 2, for instance, when you come to the point in your "script" (i.e. program) where you want a transition, you call up a screen which simulates the control panel of a Special Effects Generator. Kind of neat, I guess, and perhaps useful if you have a lot of experience working with SEG's, like the one simulated. In The Director, you don't have to call up a special screen or try to figure out what the symbols on the buttons mean. You just type in the kind of transition you want: FADE, FADETO, DISSOLVE, WIPE, etcetera. And then add parameters to specify width, height, direction, speed and so on. Sample programs on the Tutorial Disk exemplify other kinds of transitions, and, of course, the real fun begins when you start to create your own.

In short, The Director 2 differs most from its competition in its interface and its flexibility. AmigaVision, for instance, calls its editor the "Flow Window" and has icons to represent GOTO and IF THEN. To direct program flow, you click on little pictures of plumbing sections. In The Director, you run a text editor and type in commands.

In the other authoring systems, you're limited pretty much to what the developer thought you'd want to do. In The Director, you'll be able to make your Amiga do just about anything it's capable of doing.

You could call AmigaVision (and the others) "The Director for the rest of us." At least those of us who: A. Want to program but while pretending we really aren't, or B. can't read English.

Now that we know how The Director 2 compares to other programs, let's look at exactly what it's like to do real world video-type tasks using the program. Let's say you need a utility to make a crawler move horizontally across the bottom of the screen. And you want to be able to move graphics as well as text. Might be difficult, if not impossible, using other authoring systems. But The Director 2 gives you direct access to the Amiga's blitter. The BLIT command takes a rectangular chunk of one screen (or "buffer") and draws it on another screen. Put that command inside a loop which increments or decrements the x or horizontal screen coordinate of the "draw-to" screen, and you have your crawler utility.

In fact, that was one of the first programs I wrote using the first version of the Director, and it became one of the more popular tools on a disk set I distribute as part of my VidZeen I DPaint Tutorial. The Director 2 now comes with a similar crawler program on its Tutorial Disk (made simpler using The Director 2's new features): a usable, text/graphics screen crawler in a program of less than fifty lines of "script."

Another utility I wrote for our MBZ disk set allows you to manipulate palettes in real time from the keyboard. Creating slideshows, fading your pictures to and from red, white, whatever, is easy using CHROMA, GETMAP, CYCLE and the other palette manipulation commands in The Director 2.

Exactly how would you begin to write your own programs? By loading the text editor included with The Director 2. Dedit, as it's called, is quite capable (in fact, I'm using it to write this review), with all the features you'd expect. However, it is possible to reconfigure the environment to use a different editor if you would prefer it.

Then you'd dig into the projects included on the tutorial disk and documented in the first section of the manual. These examples give you the basic knowledge to start writing your own programs quickly. What's a simple program look like? To load a picture, you'd type a line something like,

```
LOAD "df0:mypic.iff"
```

A second line, PAUSE 30 tells your Amiga to wait a while, displaying the picture on the screen.

```
LOAD 2,"df0:anotherpic.iff"
DISPLAY 2 PAUSE 30
```

These lines would load a second picture, display it, then exit the program.

Getting started in The Director 2 is easy, but mastery is something else. As computer users know, real power seldom comes cheap, and if you want to use The Director 2 to get at the wonderful

video capabilities in your Amiga, expect to spend many hours learning and practicing. You'll need a lot of help, but, fortunately, the manual is up to the task. The tutorial is good, but the reference section is what really shines. Complete, well organized, a first rate job. You'll learn a lot about not only The Director, but perhaps about your Amiga and video as well.

The Director 2 supports all the expected screen resolutions from lo-res through HAM, including halfbrite and overscan. Both standard and SMUS sound files can be loaded and played with control over volume, pitch, fade rate and so on.

The Director 2's ANIM commands (and the documentation of them) are impressive. I can't begin to cover all the ANIM capabilities, but you can chain anims, play one while another is loading; synchronize sound with anims, even make color map changes and turn color cycling off and on between frames. You can loop anims, play them once, play them in reverse or stop them in mid-play, reset them and start them again.

I've already touched on many of The Director 2's commands, but a few more high points should be mentioned. It handles input from keyboard, joystick and mouse. Mouse support especially has been improved in version 2. Now you can do things like define irregular shaped areas on the screen which your user can click on. The REXX command lets you communicate with ARexx and/or other ARexx compatible programs.

On The Director 2's downside, one bone I'd always had to pick with version 1 still seemed to be present in the sequel, i.e. there was no way to flush the key buffer. In other words, if the user presses keys (or even holds them down) while The Director is busy doing something (loading a picture, for example), then, when a command comes along that looks for a key press (such as the GETKEY command), it uses those extraneous, and often inappropriate, key inputs. I've found no way to say to The Director, "Flush any old key inputs waiting in line and get me the first new one."

However, a letter to Right Answers elicited a prompt reply with a solution to the problem: put "IFKEY key" in a "WHILE key # -1" loop until you waste all the unwanted keystrokes.

Another thing to be aware of is a change in policy regarding your right to sell the programs you create with The Director. The manual for version 1 asked only that you give credit to Right Answers in your documentation. With version 2, Right Answers reserves the right to ask for a license fee. However, I emphasize that this only applies to programs you offer for sale, and, after talking about this with Right Answers, I'm assured that their policy on this is very fair and should not be a concern to developers.

My final caveat isn't really a negative; I'll just to reiterate what I've said above. If you have programmaphobia and wouldn't touch a GOTO with a ten foot icon, and you only plan to use an authoring system occasionally, you might be better off with one of the others. But be prepared to face the fact that none of them is likely to match the power of The Director 2, at least not for those of us willing to get our hands dirty learning and doing some actual programming.

(Michael D. Brown is owner of MBZ Products and can be contacted at 6023 Kilgore Av, Muncie IN 47304.)

Avid Tutorial!

# Using Digi-View and Deluxe Paint III to Produce VIDEOGRAPHICS

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Last summer I had the opportunity to produce some graphics for a series of videotapes on the Soviet Union. Specifically, the client wanted several maps that showed the whole Soviet Union in one color, another map with the 15 individual republics highlighted in different colors, various cities identified, several animations involving the six republics that the client was actually going to visit, as well as some simple charts and closing credits. As this was my first experience doing anything this elaborate for videotape, I learned quite a lot in the process.

The first step was to secure some maps of the Soviet Union that could be digitized. The client had a number of maps available which ultimately proved unusable, having too much detail which produced an overly cluttered computer image once they were digitized and rendered. What worked the best was a map brought back from the Soviet Union itself, in Russian, that showed the republics in different colors and wasn't too busy or detailed. As an unexpected bonus, this avoided any potential copyright infringement, as the map was not copyrighted.

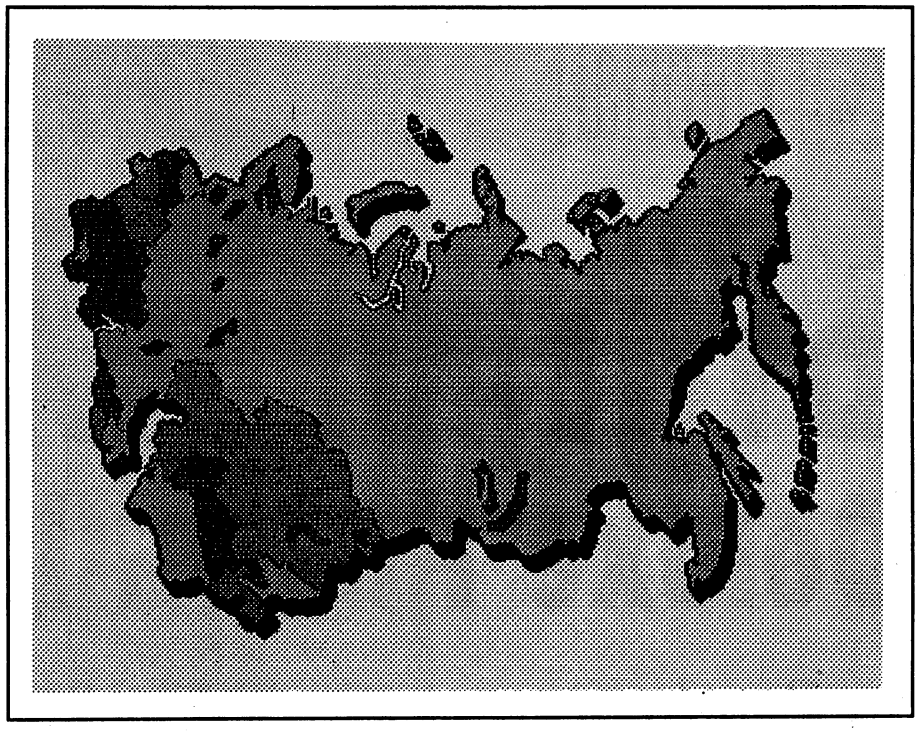
The next step was to digitize the Russian map using a video camera and my Amiga. The camera that I used deserves an explanation. After extensive experimentation with Digi-View, I discovered that using a color composite video camera, even with a color splitter, produced an inferior image, with vertical streaks and other unwanted artifacts. And while using a black and white video camera and Digi-View's color wheel produced excellent results, I didn't have easy access to such a camera. I did have easy access to a JVC BY-110U three-tube color camera, which has a test video output switchable between composite and separate red, green and blue video signals. By simply flipping a switch on the side of the camera, I could easily take out just the red, green or blue video information from the camera, eliminating the need for a color splitter or a black and white camera. The results were excellent, with good resolution, accurate color and no unwanted artifacts. The BY-110U is no longer being made, but is still available as a demo or used camera. Or you may want to consider buying a new three-chip camera that has RGB output.

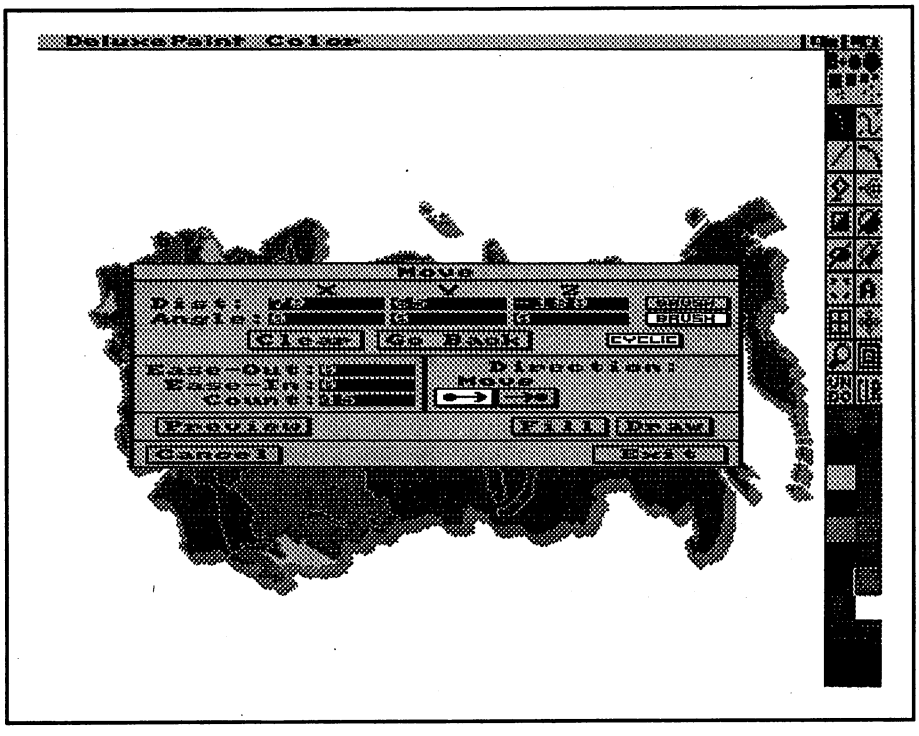
Knowing that I only had 3 megs of RAM in my computer, I decided to work in medium, overscanned (352 x 480) resolution and 16 colors. Fortunately I saved the map as an RGB file with Digi-View 4.0, which allowed me the chance to render the image of the Soviet Union in 64 colors for use with Deluxe Paint III. Because the final result had to be just a map of the Soviet Union, with none of the surrounding countries or bodies of water that were part of the original map that I had digitized, it was important to be able to clearly see where one country began and another ended. I found using a 64 color image in DPaint much easier to rework than just 16 colors because the extra colors made for a sharper image that showed the edge of a lake or border with a neighboring country or republic more clearly. Once the entire Soviet Union had been isolated from the rest of the map (by coloring everything but the Soviet Union blue), I simply reduced the image to 16 colors. I also discovered the importance of making sure that Color 0 was turned off when rendering an image with Digi-View. If Color 0 was left on it became a part of the graphic, which can make picking up part of the image as a brush very difficult.

Once the Soviet Union was a large brush on my screen, with the fifteen republics neatly outlined with black borders, I extruded the entire brush to add a black shadow for contrast and depth.

Because the images were to be recorded onto videotape, I used colors that I knew would work well with video. For the background and lakes I chose a nice dark blue, with the republics highlighted in yellow, green, red, brown or light gray. I used red with the smaller republics to avoid any potential smearing problems. Unfortunately my choice of yellow for the Russian Republic, which accounts for the bulk of the Soviet Union and consequently was a large area on-screen, was something of a mistake. Later, when adding the titles of the various cities to be named, using white for the titles, the yellow shade of the Russian Republic and white title letters had too little contrast and was difficult to read as composite video (it looked wonderful on my RGB monitor, however). Consequently I swapped the colors around in the palette so that green and yellow exchanged places and the white letters had a dark-colored background behind them most of the time.

With the Soviet Union and its fifteen individual republics resting on a blue background, I now had a graphic that could easily be modified into whatever was needed. For example, the client wanted one graphic to be a solid-colored land mass of the Soviet Union with none of the republics highlighted. I simply made all of the republics the same color using DPaint's fill tool and hid the borders with the same color. For an animation involving the keying on-screen of various city names, I added one name at a time to the map and saved each sequential frame with DPaint, then used TV*SHOW to display the different frames one after the other. Most of the required graphics were this simple. However, the request for making six of the republics fly out from the map and fill the center of the screen one at a time proved to be a real challenge.






Because the client intended to describe the six republics at some length, they wanted each of the republics to fly out from the map and fill the screen while being introduced by the videotape's narrator. The first step was to cut out each republic from the rest of the map using DPaint's magnify tool and painting around the desired republic with Color 0, then pick up the brush and save it to disk. I then reloaded the main map and set the number of frames to be animated to 45. I then stamped the republic brush over its original position on the map, opened the animation move requester and set the coordinates so that the brush would fly out from the map and fill the center of the screen. This took a lot of trial and error using the wireframe preview mode to get just the right movement and final positioning of the brush on-screen. Once I finally found the correct settings and rendered the animation, I discovered a very serious problem.

What looked fine as a small area on the map looked extremely coarse and undetailed when enlarged to fill the middle of the screen. The resulting animation was not acceptable by my standards. It certainly wouldn't meet the client's standards either. Knowing that I had to animate six republics and had a tight deadline to meet, I began to feel genuine anxiety over my ability to complete the project in time.

The solution was fairly simple but required some time and effort. I went to the 45th frame of the animation, where the republic ceased moving and rested in the center of the screen, picked up the enlarged republic as a brush, and drew a new republic by hand in its place. The redrawn republic then had enough detail to conform with the rest of the graphic and was also the same size as the original DPaint-generated republic at the 45th frame. I then ran the animation backwards, frame by frame, and shrank the reworked brush using the minus key on my Amiga's keyboard frame by frame as well. The original motion path of the DPaint animation indicated where to properly place the successively smaller brushes. In the process of running the animation backwards and stamping the brushes on screen, I covered up the original, coarse-looking brushes. I did this for perhaps the final thirty frames of the animation, and left the first fifteen or so frames untouched because the image was still too small for the eye to see the true shape of the brush.

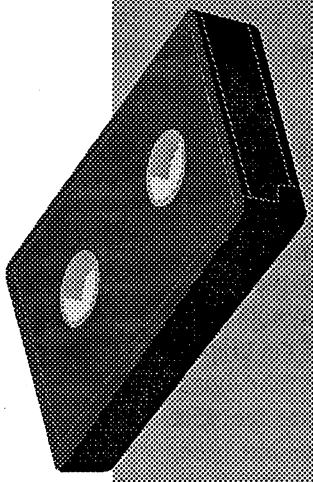
I did try to simply render the animation backwards using the reworked final brush so that I wouldn't have to do all of the touching-up work by hand, but I never could get the coordinates exactly right so that the shrinking brush rested in its proper place for the first frame. Redoing the animation frame by frame proved the best solution. After reworking the first animation by hand, I quickly learned the technique and was able to correct the other five animations in short order.

After using 45 frames to create the flying out effect, I held the screen still for another fifteen frames (half a second for videotape) before adding the name of the republic. The entire animation ran 230 frames or almost eight seconds to allow plenty of time for editing purposes.

If I had to do the same process all over again, I would have spent more time trying to find an even simpler map to digitize that had less information on it. A big chunk of the time involved with this project was converting the digitized map from a fairly detailed image with its well-labeled cities, towns and rivers and surrounding countries and oceans into a simple, easy-to-read-for-video graphic. Also, I would have used only dark colors for the various republics to avoid any contrast problems with any titles. The quality of the genlock used with the video editing system probably had a lot to do with the overall look of the graphics. A more expensive genlock would have allowed for the more successful use of yellow. And I would have saved some time if I had rendered the initial map in 64 colors before discovering how difficult it was using 16 colors. But overall the job went well, with both myself and the client well pleased with the final results. I look forward to doing more work like this.

Avid Spotlight on...

# THE AMIGA VIDEO MAGAZINE



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In the ongoing COMPUTER WARS, it's usually the Macintosh that gets the center of attention - as in desktop publishing. Video, however, is another story, and an Amiga owner can take a pretty big bite out of the Mac just about anytime he/she wants. This is because the Amiga was MADE for video; it's timed correctly to handle, process, and display an NTSC signal. It doesn't hurt a bit that software/hardware is less costly than in the Mac world either, and of course we have the Video Toaster.

"Yeh, so what," retorts the Macker. "Show me something you can do with that stuff." "Okay," you respond, "how many broadcast quality shows are being producing with YOUR computer?"

Dead silence.

So you whip out your video cassette of THE AMIGA VIDEO MAGAZINE and shut him up good.

Now what's the scoop behind that VHS tape - retail $15.00 on the wall of Amiga retailers, or found at various booths during trade shows? For that answer we head to the upper west side of New York City, and the office of CVF Productions.

Entering the suite is a bit like going into a doctor's office - you know what to expect, but aren't sure just what you'll find. In this case, it's devoted to CVF's main business, which is the making of commercials and A/V tapes. But the good stuff's in the back room down the hall.

That's where we meet Mark Montellese, one of the three executive producers for AMIGA VIDEO MAGAZINE (AVM), as well as the show's director. "The important thing to understand," begins Montellese, "is that the Amiga is a fantastic machine that really allows you to stretch and create. AVM isn't our first effort. We started doing a cable show on the Amiga in November of 1989. It was a weekly half hour devoted to products and techniques, and it drove us crazy, I mean, trying to handle two hours a month!"

While Montellese expounds on, the two other executive producers, Kirk Duncan and Charles Lopez, ramble in. Duncan plops down into the only swivel chair unoccupied, while Lopez stands

with the resigned look of one who's become used to failing at this form of musical chairs. Both clearly sympathize with Montellese's painful recollections of days of video past.

"We decided to go to a once-a-month one hour 'news magazine' format in February of 1990," chimes in Lopez. "And you can imagine our thrill when the Video Toaster became reality, and we could integrate it with our existing editing equipment."

Montellese agrees, and notes that another improvement in the show was to make it available by satellite. By using a beaming service to transmit the show over SATCOM to cable and satellite viewers, AVM can now be seen by 100's of thousands of people, with a potential viewing audience of 5.5 million that spans North America and Canada [satellite channel 11, Tuesday 8PM EST].

Kirk Duncan is uncharacteristically quiet, for an actor anyway. He stumbled into the show as a result of having done an unrelated acting job for CVF. When AVM was in the planning stages, a host was needed - and Duncan was called in. "My level of computer 'literacy' wasn't exactly up there," he laughs. "I became an Amiga enthusiast real fast though."

Just as Duncan was "drafted" into the computer world, Lopez too found himself taking on responsibility for graphics for the show. As he puts it - "Creating with an Amiga is easy, the programs are so intuitive that they pretty much enable you to get up and going quickly. TVTEXT PRO makes the manipulation of fonts easy (considering the hundreds to choose from), as does Deluxe Paint 3. Since I do most of the graphic work at home (on an 8meg 2000 without a Toaster), the new 24bit digitizer DCTV has turned into a really simple and efficient way for me to capture and manipulate text and graphics. I break down palettes from 24bit format, so as to make them more compact and convenient to work with, adapt brushes and do overlays - Art Department Professional is the tool of choice here - and then port them into DPaint 3. I'm just now going into Spectracolor, which allows me to use more colors due to the HAM format. I'm also excited about using DCTV's animation feature in the future to do 24bit color animations." Lopez extolls the quickness of DCTV, which he says speeds up the digitizing phase to where he can now finish everything needed for the show within two days.

Preparations for each show begin with a meeting of the three to discuss content. Then the materials are assembled, some being shot for the program, others being provided as tape or disk materials by software designers and companies. Product demos are handled in-house, although all three agree that those provided by the designers are preferred, since they (designers) are so familiar with the products that they're able to reach in and grab the strongest features for presentation immediately. A final meeting is now held to review all that has been done, before the editing process is begun.

Creativity aside, it's the technical end that can potentially be the most disruptive. AVM uses three-tube professional video cameras [Hitachi/Sony], with all the work shot and edited on 3/4" tape. Editing is done with a Sony 5850, with single frame transfers accomplished through an IDEN TBC. "It only allows one input/output," notes Montellese, "but that's sufficient right now, although we're looking into the Showline series of TBC units - as they offer multiple input/outputs, plus other features at very affordable prices."

As mentioned above, a Video Toaster is at the heart of the system. AVM's post production uses three 2000's online with two, eight, and ten megs of RAM - the Toaster being used primarily as a multipurpose post-production tool.

Montellese recalls how three Toasters died in rapid succession. "Fortunately New Tek kept replacing them, but fun it wasn't. Then we started getting strange results - garbage images, blank screens, what have you - which we traced to our Series 2 GVP hard disk controller. Seems the Toaster didn't like the controller card."

Lopez continues. "So we took our old GVP controller out of another 2000, switched it for the Series 2, and the Toaster seemed happy. NewTek said that they believed that the memory on board the controller was causing the problem, but nobody knows for sure. All we know is that the Toaster was fine once we made the switch."

Other Toaster horror stories abound, including repeated startups to try and get the Toaster to "sync-in" with the TBC. All three agree that, at least in their situation, the Toaster is a delicate device that requires a lot of patience and tolerance.

Providing that all starts up well, there are other production problems peculiar to a Toaster system. "Some things occasionally happen which drive you mad," notes Montellese. "Like when a freezed image breaks up when you recall it from a framestore. Others are more technical reality that you have to deal with, like taking a freeze frame, then shrinking the screen to use as a news box - only now you find its lost a lot of image clarity." Duncan calls to our attention that the latest software has removed that "news box insert" feature from the switcher. "I can understand that additional buffers would have driven up the price of the Toaster," laments Duncan, "but why have features that get disabled just when you need them most?" [EDITOR's NOTE: At press time NewTek had not officially released version 2.0 of the Toaster software.]

Other problems are more pedestrian, but no less frustrating. "I guess it's the price you pay for being on the 'cutting edge' of technology," says Lopez. "Doing 24-bit takes a bit longer, but the results are always well worth it." Montellese agrees, but notes that their end-of-month deadline's 30-40 hours of editing always has them working right up against the wall, and that they're just about always a bit late.

"That's partly because we try to be fresh and timely," says Duncan. "If something new shows up that's worth being seen, we somehow manage to get it in regardless of what it'll do to the schedule." Lopez chips in with a comment about how "great 3D stuff is," but how involved and time consuming it is to produce on a deadline. Other little aggravations include Commodore's less-than-ongoing support of the magazine (though they did let them use the Amiga name in the title).

Problems aside, Montellese wraps it up positively. "The big point is that the Amiga is designed to do television, and we're doing it within a realistic budget. Yet thanks to the Toaster and other soft/hardware, we are able to create a broadcast quality, professional program that can stand head to head proudly with any show on the air."

For more information about the Amiga Video Magazine, contact:

CVF Production
200 West 72nd Street, suite #53
New York, NY 10024
(212) 724-0288

Tutorial!

# Using The Amiga for "PSA" Design and Creation

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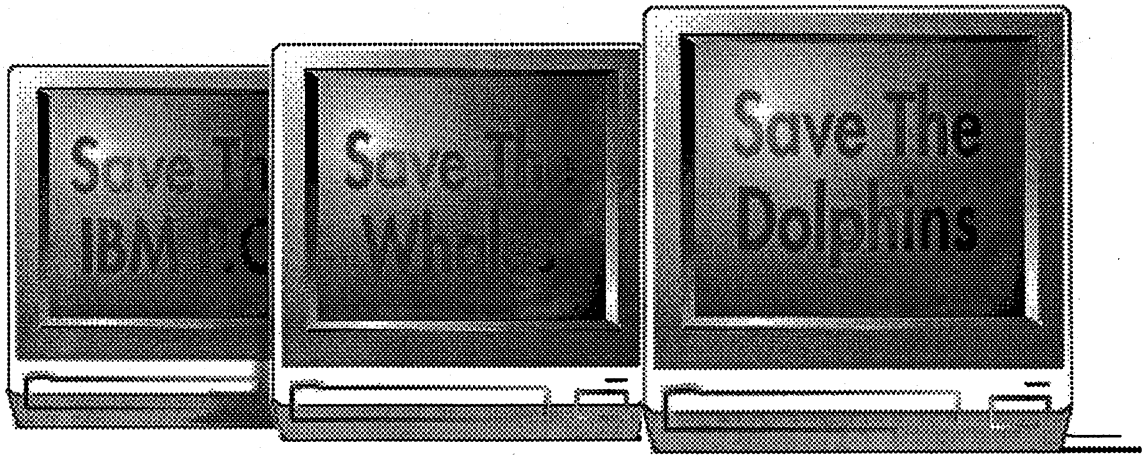



Generally, there are five types of video projects that the Amiga animator/artist can hope to address:

1. Commercial TV spots (usually 3-10 second spots: flying logos,etc.)
2. Animated features (very difficult & time consuming to do: 5 minutes to two hours in length)
3. Industrial segments (business graphics: animated flow charts, etc.: from several seconds to a minute or so each)
4. Instructional video (animated work that illustrates classroom work: from several seconds to an entire video in length)
5. PSA's (usually from 30 sec to 1 minute in length).

"PSA" means "Public Service Announcement", and PSA's are an area which Amiga artists and animators can address quite creatively and successfully. PSA's come in many flavors: newspaper copy, radio, and video. Naturally, it is the video PSA that is of primary interest to AVID readers.

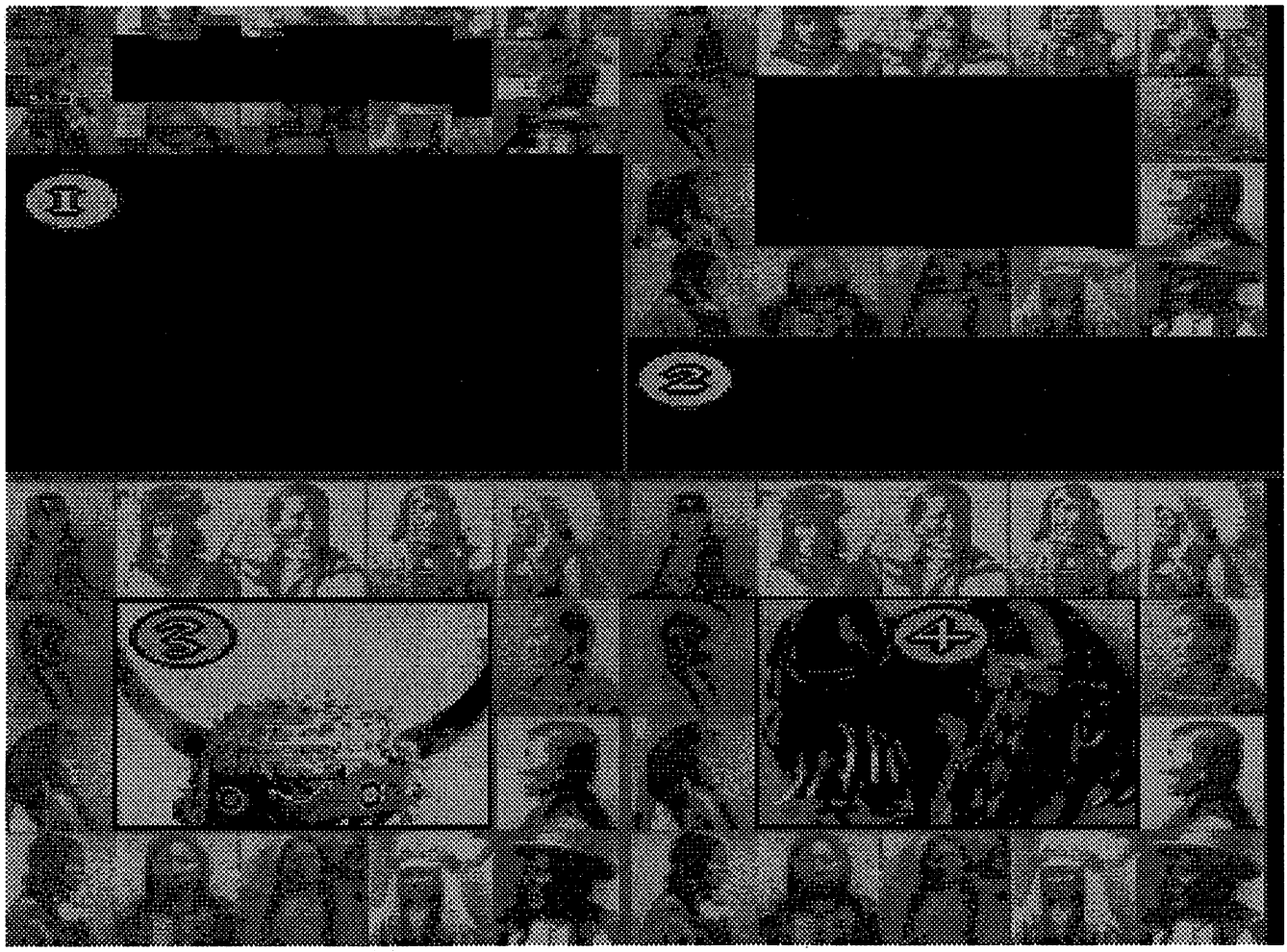
The PSA is unique because it offers the artist/animator almost unlimited creative potential, exceeded, perhaps, only by an original animated production. This is ripe territory for the Amiga, and it is an area that can take advantage of the wealth of video-oriented software and peripherals in the production process. As far as remuneration, PSA work can pay handsomely (especially when incorporated in a grant funded production), or it might pay very little (in which case you might want to do it to expand your video portfolio).

The Amiga artist's approach to a specific PSA project may vary infinitely, but generally will be determined by that person's experience with a wide range of software and hardware. It is very seldom that a job of this kind can be completed by one software package alone, as the following example will illustrate.

## The Assignment

The Fleming Museum at the University of Vermont in Burlington, Vermont needed to inform the public about its exhibit of Plains Indian artifacts and art. The actual pieces of work in the exhibit were collected over the last hundred and more years from many sources, and were stored in the Museum's facilities. As with most PSA work, the process starts with many hours of brainstorming. Usually, the PSA client knows little about what is possible, and the Amiga artist is unfamiliar with the clients wishes (which may not be articulated particularly well). Initial work on a PSA, then, should take into account about five hours (or more) of exchange of information in order to prepare a visual storyboard for layout and timing purposes.

In the initial verbal information exchanges, the Amiga artist should take copious notes, and should ask questions such as:



1. Has the client taken into consideration which local or regional TV stations offer free PSA broadcast (that's important because each station may have different time slot lengths to which a PSA has to fit)?
2. Are all of the visual materials for the PSA at hand for necessary digitization and/or artistic rendering (also ask about copyrighted material that has to be cleared before it can be incorporated)?
3. What is to be the makeup of the textual material?
4. Will there be a voice-over (and who will do it) or will the piece rely on a music track?
5. (And most important) Is the deadline for the finished project reasonable?

## Storyboarding a PSA

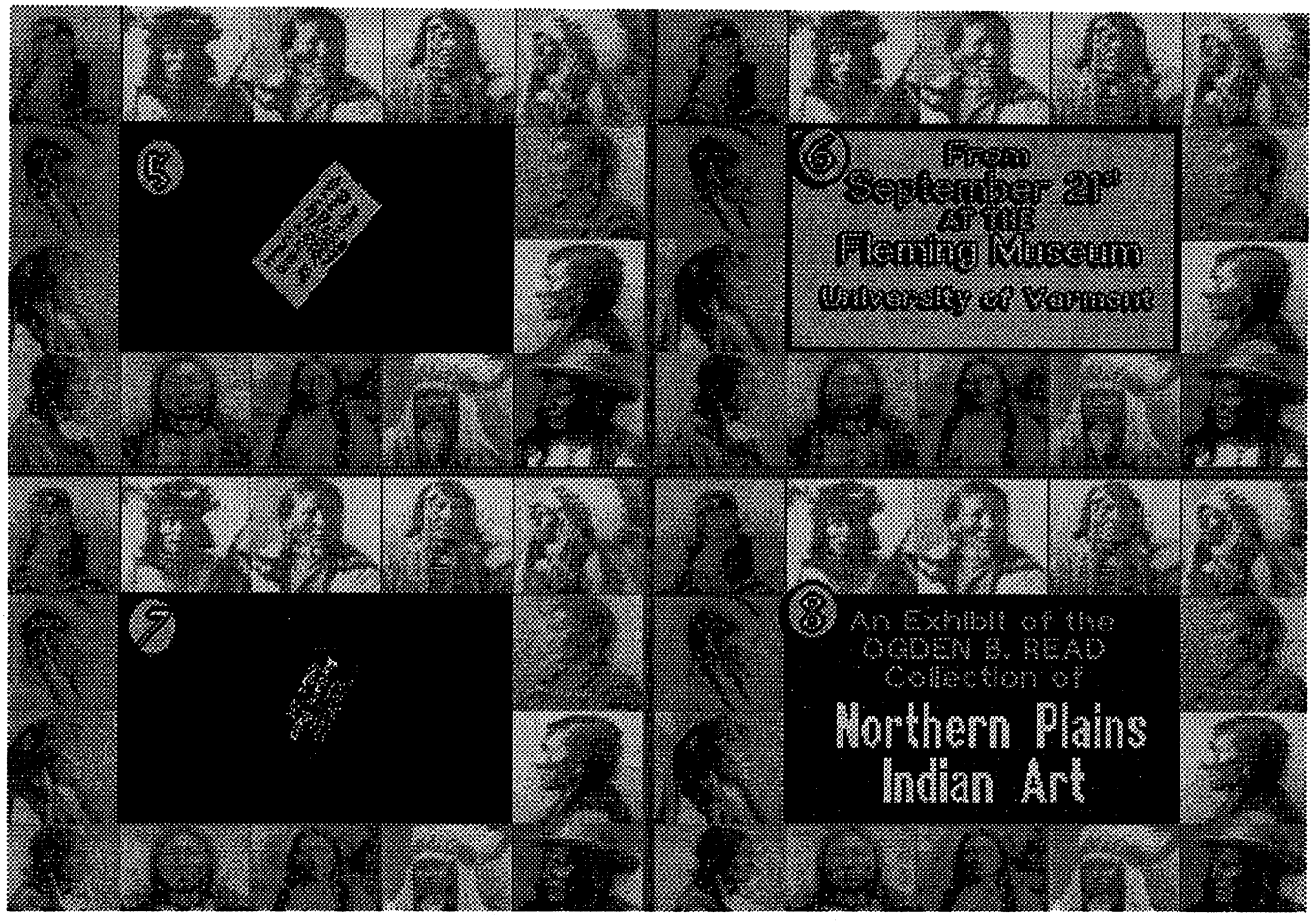
A storyboard is a hardcopy layout of an animation that tells exactly when a specific event will happen. Usually it contains layers of information, somewhat segmented as follows:

1. A visual sketch of keyframe information (important places in the animation that act as visual centers for the piece).
2. The exact timing settings that this visual is taking place (eg., a visual may take 3 seconds to unfold).
3. A verbal description of the visual.
4. Notated verbal voice-over narrative to be added in the editing process and/or musical or sound effect tracks.

The illustrations that I have included with this article represent what might have been sketched in at the keyframe positions, and you can readily see the animation progress from figures one through eight.

## The Assignment's Parameters

For this assignment, after thoroughly brainstorming the procedure with the client, we decided upon the following animation. It would open up with a frame of pictures digitized from the Museum's collection of hundred-year-old Native American portraits. I began with twice as many examples as I thought I would need (a wise procedure to follow, as you never know what a piece will look like on the screen), and the number was narrowed to the needed amount. I wanted to bring this frame of portraits on-screen in an animated fashion, and will tell you how that was accomplished a little later. Then the center of the frame was to slideshow about twenty of the artifacts that were to be on display. These were to be digitized from a full color book that the museum itself had published some years earlier, so there would be no copyright infringements. Finally, I wanted to "fly" the text information up to the front of the screen inside the frame. As for sound, the




museum wanted to use a digitized sample from a Plains Indian flute piece.

## How It Was Done

The actual portraits were about 8" x 10". They had to be cropped to a standard size for the video. DigiView Gold (NewTek) was used to capture them, and the palette was frozen because I wanted to work in 16 color Hi-Res. They were then all reduced to a common size using ASDG's Art Department (an indispensable tool!). They were flipped as needed for dramatic interest, and manipulated into place with Deluxe Paint III (Electronic Arts). This gave me the "Frame" within which all other actions would take place, the center of which was set to color 0 for genlocking purposes.

Next, I set out to make the frame itself enter as an animation. Doing this required some special software, ANIMagic (Oxxi/Aegis) to be exact. Any Amiga animator not familiar with this gem should become so A.S.A.P. With ANIMagic, some very unique transitional animations are possible, effects that no other program even touches. The effect that I chose was to have the portrait frame descend slowly from the top of the screen. Just to make sure that I had enough room for storing the completed animation, I used non-overscanned Hi-Res. The resulting "border" was okay, because no movement would be going on outside of the central portion of the frame. The animated frame melts onto the screen from the top, and the images move from a compressed view to fully recognizable portraits.

Next, I had to make the twenty-plus full-color artifacts appear inside of the Hi-Res frame. Obviously, I couldn't do this on one computer because my limited 16 color palette would not allow for the expanded colors necessary. After the images were digitized in Hi-Res and reduced to their appropriate size, I imported them in to Oxxi/Aegis "Lights, Camera, Action" (LCA). This software allows you to tag disks of IFF pictures with various scripted transition effects. For playback, all of the pictures are loaded into RAM for realtime playback. I loaded the full portrait frame on one Amiga, and the scripted LCA IFF's on another. I then genlocked the two, and recorded the segment with Elan's "Performer", which I'll mention in more detail in a moment.

The last two portions, were easy to produce. They were the text screens, and their palettes were workable in the same colors as the portrait frame. For this purpose, DPaint III served well; I flew the text up to the screen from the background, using the "Move" requester. Just to add to the visual interest, I made sure each of the two text boxes rotated in an opposite direction as it moved. Once centered in the middle area, each piece remained there for five seconds.

## Elan's Performer as Lifesaver

If you've been counting, that gave

me four separate segments to edit together. Now editing (post production) is an expensive process, and not a little time consuming. There's no getting around the edit room for most productions, but since this was an all Amiga animation with no "live" video to worry about, there was another simpler solution. Elan Design's "Performer" software is the perfect answer to many Amiga animators needs for final edit control. Performer allows you to load animations and single frame IFFs to separate keys on your Amiga keyboard, from which you can "play" them back in any order desired while the tape is running. In this way, animations can be created on the spot from single frames, and limited animations can be combined and recombined to produce extremely long and interesting features. If your interest is in creating a full feature length Amiga animation, by the way, I can't imagine you doing so without the Performer software. I have assigned as many as 12 separate (and different resolution) animations to Performer at one time, and then taped them in rapid fire variation successfully. Getting a finished result from the four segments of this piece was comparatively very simple.

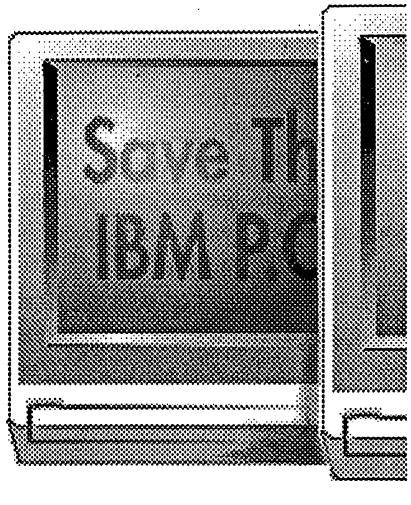
### Sound: The Final Frontier

Adding the soundtrack was another challenge. I've already mentioned that the client wanted to use a recorded segment from a Plains Indian flute piece. I used Oxxi/Aegis "AudioMaster" software to capture a nice segment from the audio tape. Then, after saving the musical data, I reached for my copy of Sonix. I have a wealth of Amiga music software, but because Sonix has easy controls for fading and playing tracks, it was perfect for this assignment. I composed a simple drum part, loaded it into Sonix, pressed the "repeat" function, and set it playing on my Amiga 2000. I then loaded the digitized flute sample into two tracks, and set them playing on my Amiga 1000, with the volume turned temporarily off. I fed both audio signals from each computer into an audio mixer (Radio Shack Realistic #32-1105), and fed the output to the audio dub on my 3/4" recorder (I had previously recorded several versions of the video to the same tape). Watching the monitor very carefully as the video played back, I was able to record the audio as I wanted it. The drum track starts first, and then the flute tracks chime in at certain segues. I recorded four slightly different versions of the piece for the museum.

### CONCLUSION

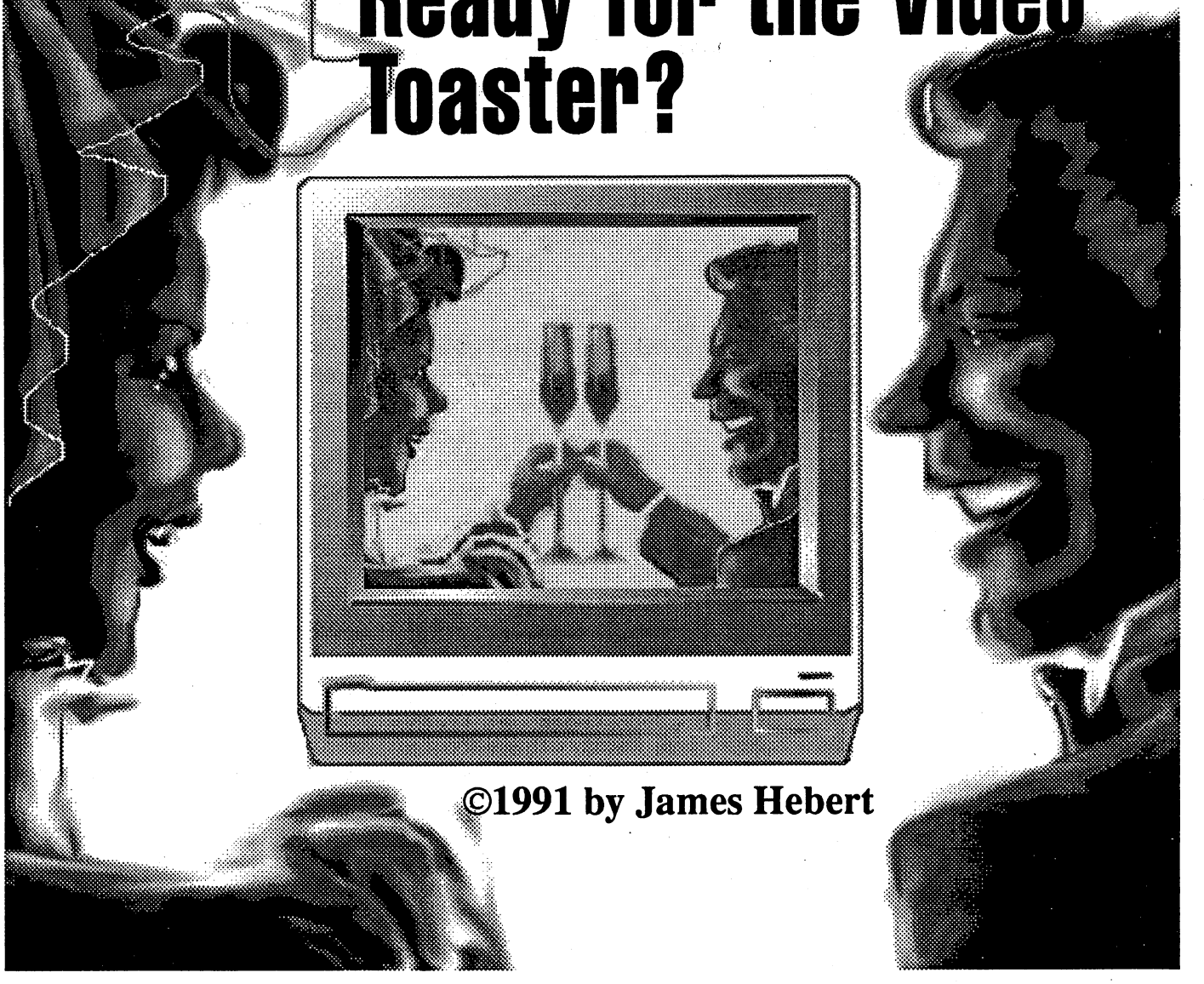
There you have it. A PSA that both client and artist are proud of. My biggest thrill in the whole process came when I was watching the Carson show on NBC one night, and the commercial break came along. There, in full Amiga wonder, being seen by who knows how many folks in my region, was the broadcast PSA. I smiled large and wide. Having done other PSAs for broadcast in addition to this one, I'd like to share their amazing production secrets with you in future issues of AVID. In addition to that, if you'd like to possess two Amiga disks that have the actual animations referenced in this article, and you are an AVID subscriber, remit $10.00 to the following address (non-AVID subscribers will have to send $15.00,.. and shame on you for not subscribing!):

R. Shamms Mortier 15 Rockydale Bristol, VT 05443 Well, that's all for now. Enjoy! And,..oh yes...see you in ROMulan space.



Avid Feature!

# Is Digital Photography Ready for the Video Toaster?





Mark, a good friend of mine, is a professional photographer. Like many in his field, he is highly motivated to improve his work on a steady basis. Toward that end he regularly attends seminars and classes on portraiture, lighting technique, and more. Recently he was introduced to video proofing. The term refers to transferring negative images onto videotape rather than making prints; with the end result that customers order their final prints from a videotape rather than the traditional proofbook.

The advantages to the photographer are numerous. He saves time in that he need not wait for development of individual proofs; he can begin work with only the negatives. Customers may view video proofbooks in their home, even send them to relatives elsewhere. A musical soundtrack may add to the emotional appeal of the images and increase sales. The video proof itself may be sold for additional profit. The professional wedding photographer saves on his costs by not having to print some 240 5x5 prints, with the usual half not being ordered for the final album.

Consider a proofbook with 240 5x5 deluxe proof color prints, consisting of 10 rolls of color film, processing, proof book and pages, at approximately $400.00 (excluding the amount of time spent pre-proofing prints and assembling the book). Of these prints, roughly one-half will become trashcan fodder, while

the other half are ordered for inclusion in the final album. At $1.00 per print, that's $120.00 being thrown away every weekend. With subcontractors working additional weddings on the same weekend, that figure may double or triple. Multiply it by, say, only 26 weekends, and you begin to realize a substantial sum of money.

A video-based proofing system seemed achievable with today's technology. Already various elements of the final equation were in place. The difficulty lay in Mark's simple yet very specific needs. Mark needed to be able to transfer 240 negative film images to videotape, sequenced in the proper order, with graphics that indicated both the number of the image (for reordering) and his studio name (for copyright purposes, and to discourage home copying). The first element of the video proofing system is a device that converts photographic negatives to NTSC video positives. We test-drove the Fotovix II-X, which Mark had been studying for months.

Fotovix's II-X looks and operates much like a microscope. Negative images are placed in a carrier mounted where the glass slide would go on a microscope. The mount is backlit from beneath, and a camera lens (with video imager) is aimed at the negative. Cropping by zooming in and out from the image is possible, as well as rudimentary color correction. Output from the Fotovix, which may be negative or positive, is standard NTSC video, like that of your home VCR.

The II-X has interchangeable lenses, allowing for a variety of negative sizes to be utilized. For Mark's work, it performed very well and produced high quality NTSC images. My reservations about the unit concern its housing and structure. I'm used to industrial video equipment with a solid build and sturdy feel; the FotoVix has neither. With its high center of gravity, tiny footprint, and thin plastic and metal construction, I felt that the manufacturer cut corners. Mark is contemplating a foot-wide base of his own design to attach to the unit for stability. Too bad Tamron didn't think of it already.

We then tried out the Video Toaster to get an idea of how the video proofbook would look. It was awkward at first, juggling Framestores and CG graphics back and forth manually, but the basic idea worked and looked great. If ARexx scripting were brought into play for the playback to videotape, Mark could automate the laying-to-tape process. However, ARexx appeared pretty formidable to non-programmers. Mark was uncertain of unknown territory, and he'd been told of promising videocards for other computer-based systems. We decided to look into these other systems to see what they had to offer before continuing with the Toaster.

Our search then led us to look at the Video Toaster, the NeXT computer, the Macintosh, the PC, and the new Kodak Prism and Premier Imaging Systems.

The NeXT's entry into video is the NeXTDimension board, a 32-bit capture device. With powerful processing, 24-bit paint, and its ability to capture a certain number of sequential frames, it looked like a solid bet. However, it is a single-input, single-output device. In the Amiga community, it would be known strictly as a framebuffer card, allowing for single frame capture, display, and paint. There was no software for it to handle sequenced images with graphics and transitions. One multimedia software package we did see allowed for graphics overlays, but oddly it could not re-save the image with the overlay intact. Also, it offered only 20 transitions, which were primarily wipes, and its dissolve actually proceeded through 10 stages of brightness as it faded into the next image.

The NeXT's fast Motorola 68040 processor was bogged down by the burden of heavy UNIX overhead while it tried to manipulate video images. Nowhere in the literature or demonstration we received was there mention of coprocessing, one of the major features of the Amiga, which relieves the main processor from the burden of governing every task on the machine (and slowing it down). One multi-media software developer for the NeXT confided to me that we would seriously need to consider a 32-megabyte RAM system in order to have enough overhead "to do it right." Compared to the Toaster we had demoed on a 68030-based Amiga system with nine megabytes of RAM, the NeXT couldn't compete at nearly thrice the cost.

We ran into a similar situation with framebuffer cards for PC's. Most boards support framecapture, or compressed capture of images, still storage and paint. They unquestionably offered some of the best image processing capabilities available for NTSC imagery, mainly due to these cards having years of development as a foundation. And there is a wide variety of boards to choose from. However, quality sequencing and transitions were unavailable with what we were shown.

On the Macintosh, we were promised that soon there would be a graphics board capable of frame capture, switching, character generation, and more. However, the cost of the Macintosh platform and the requirements of the board were too high. Not to mention that the video board wasn't out yet.

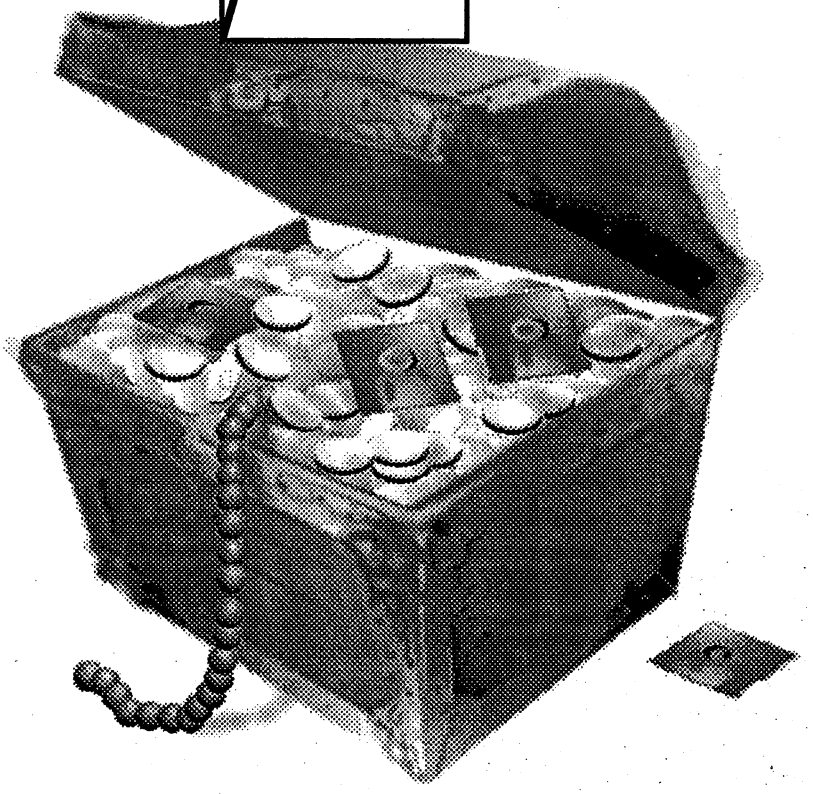
The Kodak Prism held high hopes for Mark. Kodak bills it as an electronic previewing system, "the Studio of Tomorrow." The Prism consists of a device that looks like a teleprompter hanging in front of the photographer's camera, a color monitor, still video recorder, and optional accessories. At the moment the photographer clicks the shutter to capture a traditional negative, a digital image is recorded by Prism as well. The idea is to allow the photographer to preview the video images immediately following a photo session, as well as adjust lighting and composition during the session.

Unfortunately, Prism showed no capabilities for processing, graphics, or sequencing. It is strictly a record-and-display device, and was obviously not the right machine for the job we intended.

Kodak's Premier Image Enhancement System quickly became another no-go situation. Premier is unquestionably a stunning achievement for Kodak.

# THE Avid TREASURE CHEST

SPECIAL THANKS TO THESE COMPANIES WHO HAVE GENEROUSLY DONATED PRODUCTS FOR AN AVID SUBSCRIBER RENEWAL PROMOTION



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The winner of the AVID Treasure Chest is ...Ann Brooks of Brooks Video Service in Baton Rouge, Louisiana. Ann has won a boatload of Amiga-Video software including Deluxe Paint III from Electronic Arts; Pro Fills from JEK Graphics; The Art Department Professional (including the Professional Conversion Pack) from ASDG, Inc.; a set of First Prize Toasted Fonts and the 600 Amiga font package from Allied Studios; the complete alternate font set (4 packages) for Pro Video Gold/Post from Shereff Systems; the Imagine Companion Book from Motion Blur Publishing; the new Madrigal Automobile Construction Set (MACS) from Madrigal Design; Pixel 3D from Axiom Software; the Lightwave 3D video tape from AVP; and probably a few more items that have been promised but haven't come in yet. All told, nearly $1000 worth of Amiga-Video software. Congratulations Ann!!

The sheer immensity of its image processing capabilities is mind-boggling, yet Premier runs on a Sun MicroSystems SPARCstation, has no direct output to NTSC (unless there are NTSC boards that can run on the Sun and work with the software), and is intended for single-image processing at a time. It would be best utilized at a business where compositing and high-quality print graphics are needed. It is a wonderful tool limited to a pricey audience at this time (primarily service bureaus, photographic image banks, and private organizations).

An electronic imaging system from Sony also appeared momentarily intriguing, as it had a playback device for sequencing electronic images. However, the live demonstrations of image-capture we watched yielded poor results. A set of prepared demonstration images being played back exhibited some remarkably clear images. When we inquired, we learned that those particular images had been shot with a High Definition camera, not a video camera of the type most individuals would have or use, and not the type they were using to capture images live for demonstration. Oh well.

During the course of our quest, Mark and I continually compared the gear we were seeing to gear we had previously seen, with numerous references to the Video Toaster such as "more", "better", "easier", and "less expensive". None of these machines could outperform the Video Toaster running on the Amiga. We had not dismissed the Toaster during our search, but Mark had wanted to see what was offered by other platforms. In fact, I did too; since the majority of my work has not involved them, I felt ignorant of their capabilities and wanted to experience these for myself. It's always good to know what the other guys have, after all!

Therefore, we returned to the Video Toaster to give it a serious runthrough. Capturing images was as simple as connecting the Fotovix's video output to the Toaster's input, running the Toaster, and pressing 'f' on the keyboard. Writing that image to the hard disk required roughly 22 seconds on a stock Amiga. Mark used this time to align, crop, and focus his next image on the Fotovix. Allowing 30 seconds per image, 240 images would require 120 minutes, or 2 hours, to capture and save into the Toaster. (As a proof book of prints, this same set of images would have required Mark 3-4 hours to assemble.)

The last step was to purchase the ARexx command language for programming automated playback sequences for the Toaster to render. Mark wanted a minimum of two scripts to work with. The first script would load an image, generate and display the copyright graphic, load the next image, dissolve to it, and generate the next graphic, and so on for the full set of images. This would create the master videotape used for customer proofing. The second script would only load and transition between the set of images, one at a time, without graphics. This would create a master video tape without the annoying graphics, and be yet another product Mark can sell to wedding couples with no more work than starting the second script!

**"None of these machines could outperform the Video Toaster running on the Amiga."**

As a test, Mark and I used the images from my wedding last year. Set to selected piano music, the overall emotional effect of the video is powerful and enthralling. It brought tears to my wife's eyes, and in a compelling way was more powerful than our wedding video itself. We were sold.

The development and fine tuning of the ARexx scripts continues at the time of this writing. Currently, a local Amiga programmer is designing a table where Mark may enter the image number, transition effect, graphic page, and delay, allowing him to see the overall presentation in chart form before running it.

If you would like further information about Mark's use of the Video Toaster in his photography work or the ARexx scripts for yourself, someone else, or as a sales aid, write me care of AVID Magazine. The publisher and I will have Mark (or his programmer) contact you in return.

## Some further thoughts...

The single most surprising element in studying video imaging systems on other computers was the fact that none could reproduce the quality, ease of use, and flexibility of the Video Toaster. In cases where images could be manipulated with great accuracy, NTSC output was lacking. Certainly, the Kodak system could outperform the Toaster's image processing capabilities; but the final output is intended for print use, not video. And images approaching 36 megabytes in size are a tad bulky for expedient manipulation.

A few peripherals for other systems compare their product to the Toaster... most compare their one function to one of the Toaster's functions. For example, their paintbox to ToasterPaint. This is like comparing a Yugo to an NSX. The Yugo is a basic car, allowing you to get from here to there. The NSX also allows you to get from here to there, but look at how much more there is to enjoy on the trip, and how much more you can do with the NSX. Granted, there are better paint packages than the Toaster's, but until these peripherals offer digital effects, character generation, switching, and 3D animation, I have a hard time attaching much weight to any one comparison.

The key here is flexibility. It's unlikely NewTek conceived this use for the Toaster. But neither did they design a closed system. More and more one of the important buzzwords used to describe computer systems today is compatibility. Keep this in mind when researching new equipment, and your new acquisitions will pay off.

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I am currently using the Video Toaster..... ☐ YES ☐ NO

I am planning to buy a Toaster soon..... ☐ YES ☐ NO

I use Deluxe Paint III..... ☐ YES ☐ NO

I use Shereff Systems Pro Video Gold/Post : ☐ YES ☐ NO

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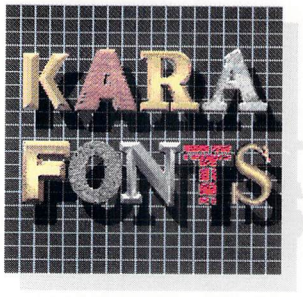


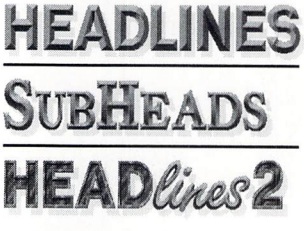


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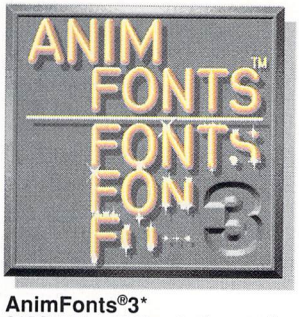


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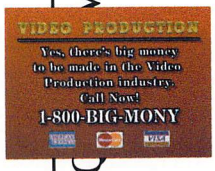


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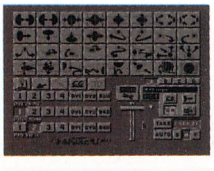

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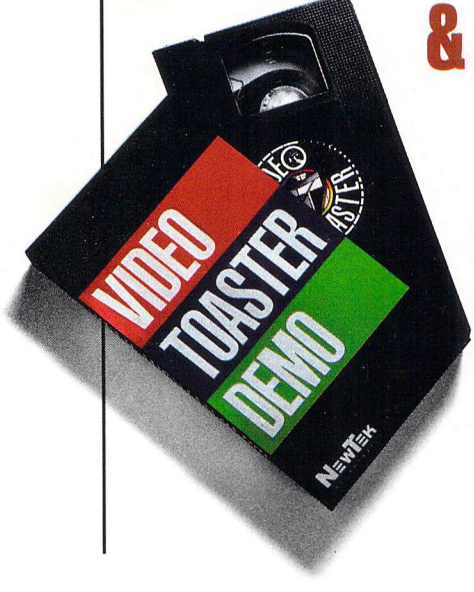


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