Disks Inside

ANIMATION

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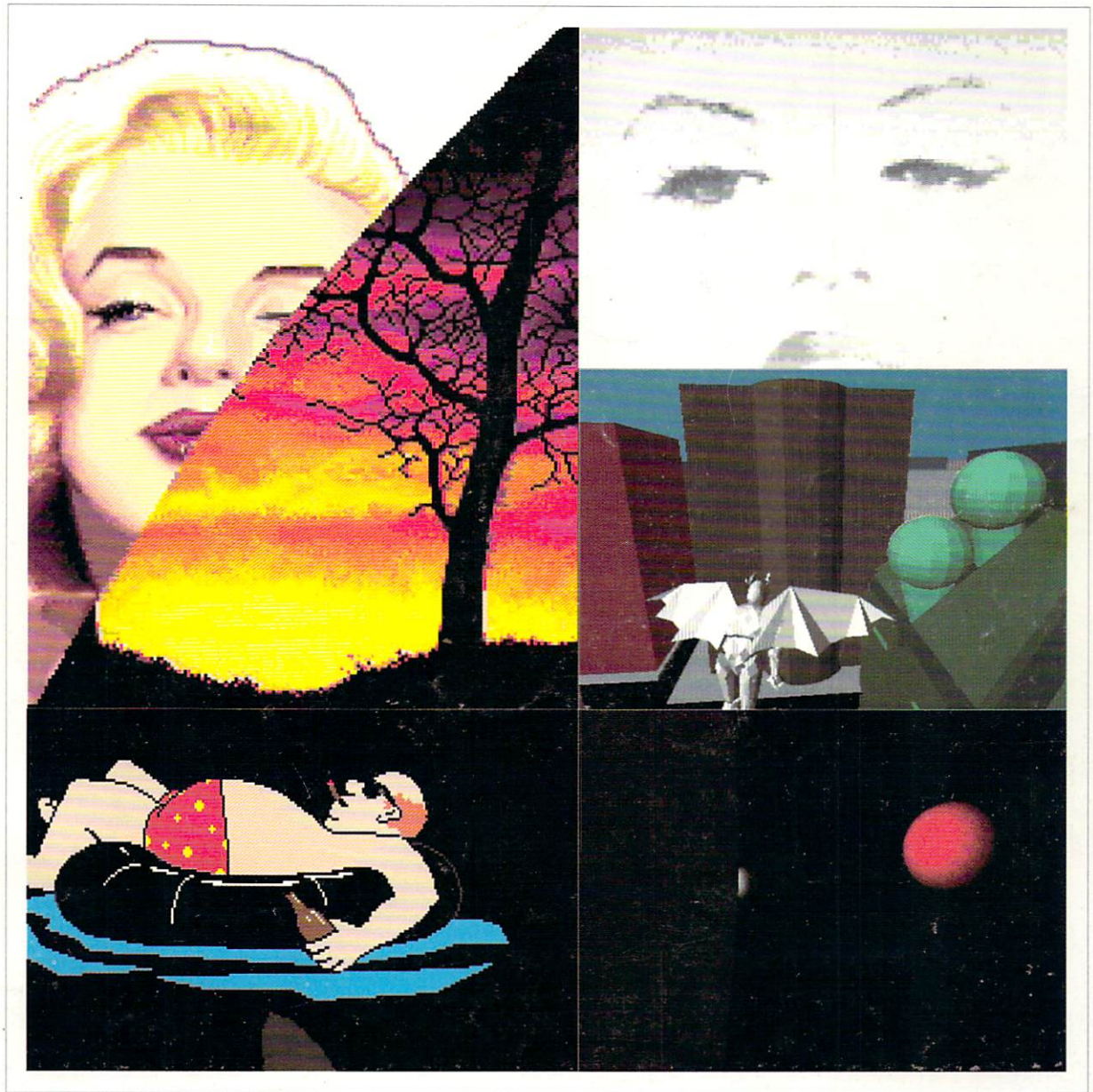

Animation Program

Included so you can try your hand at animation!

Covered This Issue

- *Deluxe Paint III*
- *Videoscape-3D*
- *Turbo Silver*
- *Framegrabber*
- *Fantavision*
- *Sculpt/Elan*
- *Zoetrope*
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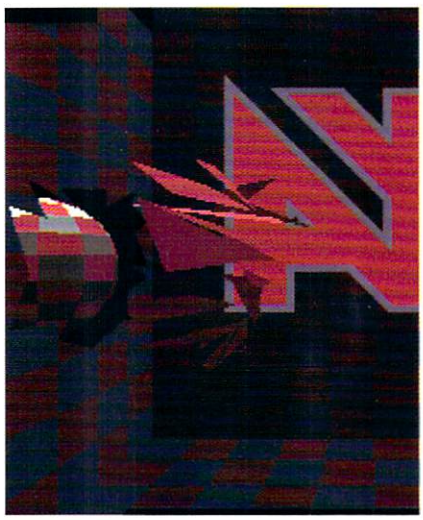
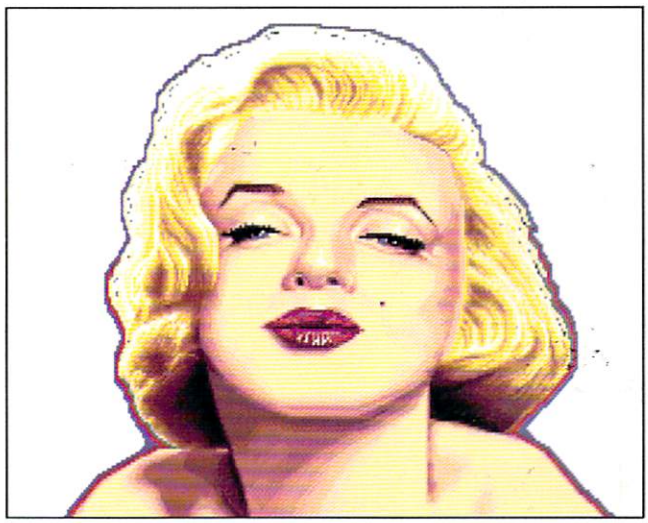


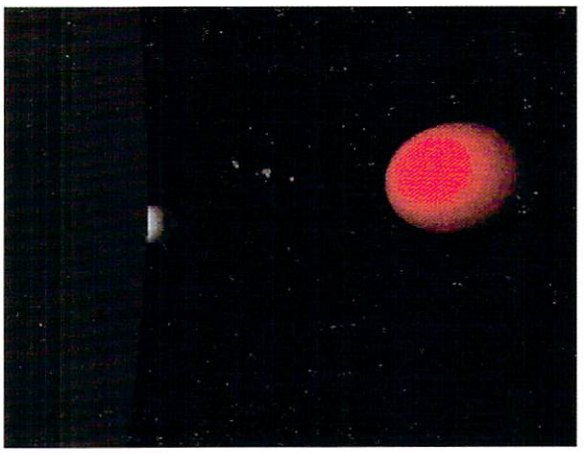
Videoscape-3D Tutorial 12
Boing Breakout, shows off Videoscape-3D.



Marilyn - The Animation
This Fantavision animation is available on the disks included.

A.X. Animation
An elaborate Deluxe Paint III animation on disk.

(Continued)



Turbo Silver
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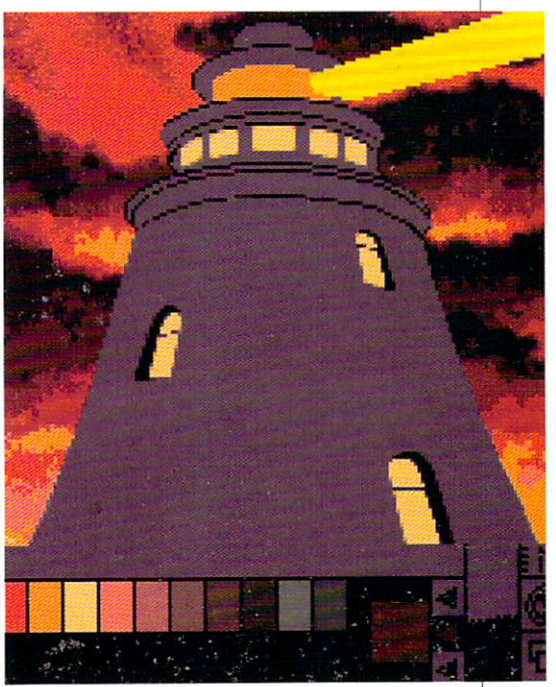

Fantavision 9
Review by Brian Roberts

Marilyn
AMarilyn comes to life in this FrameGrabber animation.

Startinglinell Animation
The NCR volleyball tournament. The plot thickens. And a good time was had by all. Fantavision animation by Brian Roberts.

Marilyn - Fantavision Style
A colorized Marilyn Monroe animation done with Fantavision.

Objects
This is a whole subdirectory of objects for your animating and ray-tracing pleasure. The first batch goes with the Videoscape tutorial. They are: *amov.ax* *ax.ax* *ball.ax* *bmov.ax* *cam.ax*
Next is an object for raytracing in Sculpt-3D. It is: *HangGlider.scene*

3D Font
Some of the most difficult to make objects in raytracing packages are alphabet characters. They're complicated and time-consuming. Here for your raytracing pleasure is a set of capitals in a 3-D font named AX.Bold. It's in Turbo Silver 3.0 format.

Ami Exchange's
AMIGA
Software & Information
More affectionately known as A.X. Magazine

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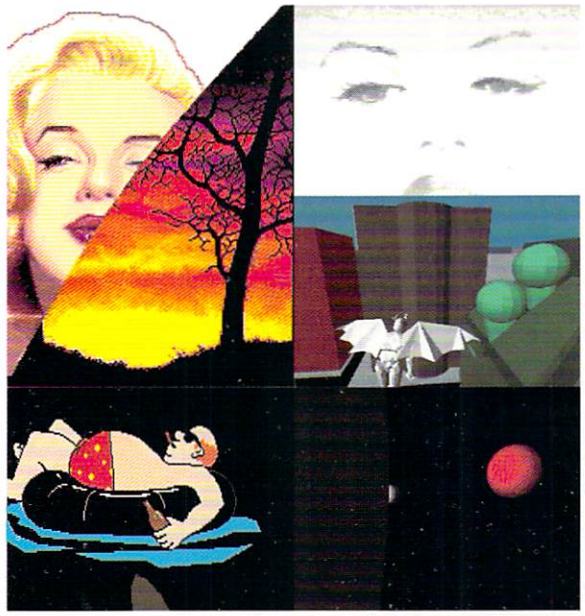
ANIMATION

Amiga Animation • A Limited Edition



About This Special Issue

Figures that move. Objects that rotate. Ah, animation. These days, things go bump and grind and every other motion, not just in the night but on your computer screen, and with a little extra hardware and patience, onto videotape, too. How about it? Like anything else that's new to the scene, there are a lot of unanswered questions in the realm of animation. So, to help with the answers to those questions, here is the Animation Special Issue of Ami Exchange, where all the talk is about - what else! - animation.

Not to mention the examples of what's being done, along with details on how you can do it.

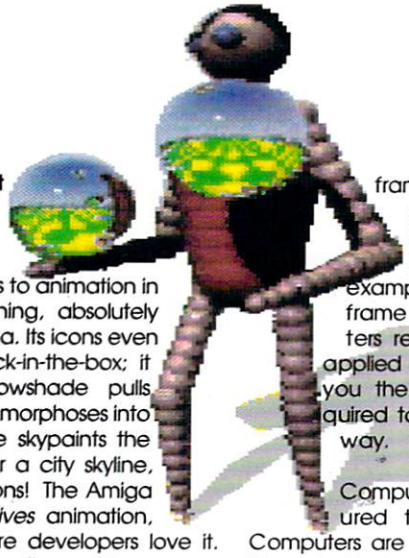
There are now many products to choose from for any of the little tasks that you need to do to whip up animations. Each one, of course, brings up a decision of its own. Do you raytrace, or render? Do you draw bitmaps and pageflip them to the screen? Do you want sounds, too?

Here then is the Animation Special to help you figure it all out. To keynote the whole affair, there's an introduction to animation on the Amiga as well as specifics of some of the raytracers and animation programs. There are objects for your raytracing pleasure, a complete 3-D font alphabet, and of course, a bunch of example animations created with the various Amiga animation programs that are available. Some of them - such as the Fantavision and MovieSetter ones - permit you to load and edit them if you have the programs.

The result is, you'll know about animation on the Amiga, and you can get a taste for the process of creating animation in many of the available Amiga programs. From there, the sky - or your imagination - is the limit.
J:

Amiga

The



by Jay Gross

And now a word about what the Amiga does best - Animating on the Amiga

Animation! When it comes to animation in desktop computers, nothing, absolutely nothing touches the Amiga. Its icons even animate. Click on a jack-in-the-box; it springs open. A windowshade pulls down. A telephone metamorphoses into a computer. An airplane skypaints the name of a program over a city skyline, and those are just the icons! The Amiga was born animating, it *lives* animation, and its users and software developers love it. And *live* it. The Amiga's software blazes new, previously unheard-of trails in the exotic world of animation, especially when it comes to creating animations, either computer ones, or the stuff you'd see at the local Bijou, or gracing the television networks between commercials.

Yes, the Amiga is the animation *machine*, going where no computer (none that normal humans can afford, anyway) has ever gone before - no, wait, that's another movie... Anyway, the Amiga's animation software puts the power of animation, any level of it from amateur to professional, in your hands. And yes, there are indeed a number of professional animation studios which use *only* Amigas for their productions.

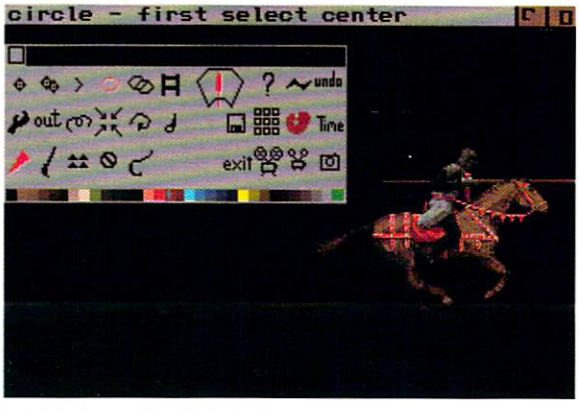
The "classical" method of animating is "cell" animation. Its name derives from "cellophane" which is the medium on which classic cartoon animations are painted, in order to do the job. To create a moving character, you layer a number of transparent plastic overlays "cells" onto a painted background. Then, a motion-picture camera films the cell sandwiches one at a time. When the film is projected, motion appears on the screen. Simple.

No! Not so simple. "Laborious," might be a better word. Imagine painting cell after cell after cell, repeating and repeating till you build up enough layers and frames to make a standard seven-minute cartoon. Or even a *one*-minute television commercial. It takes a *lot* of drawings. For film, multiply the number of seconds of animation you want by 24 - that's the number of frames that flash by in one second. The video frame rate is 30 frames per second. Actually, the human eye will begin perceiving individual frames as motion at around eight or ten frames per second. Some contemporary animation (the popular "Japanimation", for example) is produced at even lower frame rates. If each of your characters requires several overlays, a little applied mathematics will quickly show you the massive amount of work required to do animation in the classical way.

Computers to the rescue, but you figured that out already, most likely. Computers are the trick for animation, 'cause they don't mind doing repetitive tasks, they're good at step-and-repeat functions, they have memories for pictures that are easily changed and re-saved, and some other niceties - raytracing being one of the main ones.

Computers are *so* nice for animation that Walt Disney Studios (they're into animation in a big way, and yes, they even have a bunch of Amigas to help them with the job) recently announced that after they finish their current projects, they will do *all* their animation projects entirely on computers. No more cells. Cellophane stock dropped five points at the news.

This is exactly the way things are moving in the animation business (pun intended). In fact, Disney's a good bit behind the times on this one, since almost all of the fancy animations you see on television have been computer-produced for a long time. Those intros for the features and shows, where the letters fly through space, and look absolutely, impossibly real. They're not real. They're raytraced. Computer animated.



Aegis Animator, one of the original animation programs for the Amiga.

Tracing Rays

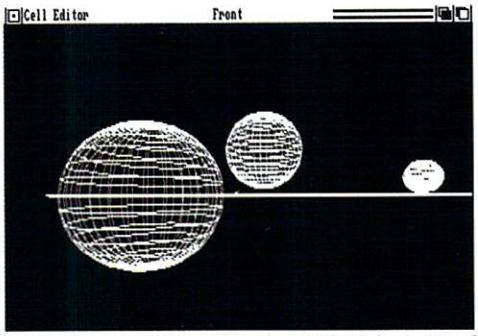
For animating on the Amiga, the approach you choose depends on the "look" you want to get, on the purpose of the finished output, and on the amount of time (and money) you have to spend on the process. Many Amiga animations are produced with the various raytracing packages. These products use the same computer techniques employed by television networks' animation computers to figure out mathematically how a fictional object would look and then draw it on the screen one pixel at a time.

That's how you can have gigantic glass spheres floating above a brick-tiled floor, scenes that could *not* exist in reality, no way, no how. The computer starts at the screen, and then figures out how each pixel is lit. If it's reflecting the red surface of a Boing ball, it turns the pixel red. On the other hand, if the exact piece of the ball that it's reflecting is *dark* red - on account of a shadow - it turns it a deeper shade of red accordingly. The computer does a *lot* of math to accomplish this, and it takes a long time to raytrace a complicated scene, sometimes weeks, for those really complex ones that some Amiga raytrace artists like to produce.

What do you need to do ray tracing? First, an Amiga. Your choice, but an Amiga 2500, or an Amiga with one of the speedup boards installed, traces rays much faster than a regular ol' Amiga, largely due to the presence of a dedicated chip for handling vast quantities of math. Plain Amigas do the job just as well, but take longer. Of course, you can multitask other projects while that process goes on in the background, if you have enough memory in your computer. Beware of bring down the whole system with a crash, however, if you're doing something in other windows while your raytracing proceeds.

The next thing you need is software. Pick from an array of products from totally free (in the vast Amiga freely distributable libraries) to several

Animation Possibilities



Wireframe mock-ups help in designing time intensive ray traced animations.

hundred smackers. The commercial ones that get all the press on this score are Sculpt-Animate 3D and Sculpt-Animate 4D and Turbo Silver 3.0 (or the newer Turbo Silver SV). The freely distributable software libraries include QRT and DW-Render.

The commercial product Sculpt 3D, by Byte by Byte, pretty much started the Amiga raytracing fray. The well-known Amiga Juggler demo was created with algorithms that eventually became part of Sculpt 3D, and few products have rivaled the product for the brilliance of its raytracing, though some have managed the job in a lot less time.

Sculpt 3D is sold now as two products, Sculpt 3D and Animate 3D. You can create raytraced pictures with Sculpt 3D, but to do raytraced animations, you need to add the Animate module, which merges itself into the Sculpt one to make a single package that fulfills both functions. Sculpt-Animate 3D is (are?) sold by Byte by Byte, whose newest product is Sculpt-Animate 4D. Yes, that's FOUR-D: The fourth "D" is time, since animation occurs over time.

The much more expensive Sculpt-Animate 4D product does basically the same thing as the earlier one, but adds some very elaborate, professional features and capabilities, particularly in the object creation department, and traces its rays with much improved speed. Byte by Byte is aiming the 4D product at a very professional market (meaning broadcast video, where most of the world's raytracing finds warm welcome), with features and options that permit interfacing the Sculpt-Animate package to some of the extremely high-end broadcast rendering computers (e.g., Waveform, Pixar, CubiComp, and others in the quarter-million-dollar-up category).

The Heuristic Approach

Impulse, Inc.'s Turbo Silver product line does pretty much the same job as Sculpt-Animate 3D or 4D. However, Turbo Silver's approach is to use heuristics (the computer equivalent of "second guessing") to figure out which rays to trace before actually bothering with the vast math of doing so, and rather than just tracing every possible ray in every possible direction, as the Byte by Byte products pretty much do. Turbo Silver 3.0 is the current version of the product, now updated to Turbo Silver SV. The "SV" means Stereo Vision, as the newest product includes automatic support for Haitex's X-Specs 3D glasses. The product will raytrace a scene which, when viewed through the X-Specs, will look *exactly* like you can reach in and touch the objects.

Turbo Silver traces its rays, generally, considerably quicker than Sculpt products. However, some of the subtleties present in the Sculpt images are not present in the Turbo Silver images unless you tell the program to go through the same mathematical gyrations to arrive at the pictures, which evens out the tracing times. Turbo Silver's strengths are its glass and reflective objects, and its ability to map an Amiga IFF brush onto a surface and adjust shadows and reflections accordingly, both of which greatly increase raytracing times.

The user interfaces of the two ray tracing products are vastly different, so you really ought to have a look at them before you make your choice. Although the output of the two products has a different "look and feel", both can produce extremely high quality images that show off the Amiga's graphic power - and your talents. The real power in the user interfaces is in their ability to "tween" the images, a feature common to both. You create the first and last frames of a sequence, placing the same objects in different places around the screen in the two frames. The Boing ball is first on one side of the frame, then the other, for example. The programs calculate the difference and raytrace the in-between frames for you, so you don't have to create frames of objects for each picture by hand. The result is a smooth, even motion that would be take a lot of work and effort to achieve by hand.

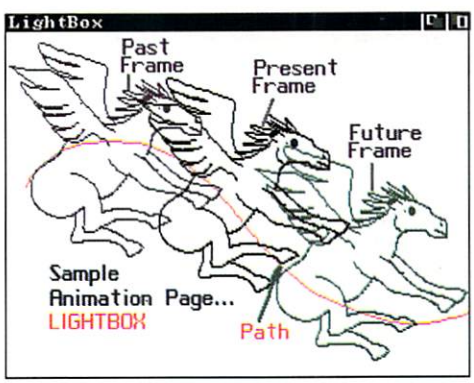
Objects? Who said objects? Object creation is what you do *before* you do any raytracing - you have to have something to trace!

Animations generated by ray tracing programs depend on computer "page-flipping" techniques to display them in real time on the screen. "Real time" means you get to *see* things move. The computer is playing the part of the movie projector, displaying your frames one at a time at animation speed, so you can see what the motion looks like. To "page-flip" in a computer, you store a bunch of images off in the far reaches of memory. Then you pull them into screen memory - i.e., show them on the monitor - one at a time, in the right order, and at animation speed. Some Amiga animation programs can swap screens as fast as 60 times per second - twice as fast as needed to animate on video - but of course, most computer animation is done at much slower frame rates, to save memory as well as the work of drawing all those frames.

Painting Animation

The latest fashion in Amiga animation software is the inclusion of animation support in paint programs. So far, both DeluxePaint III - an upgrade from DeluxePaint II - and Microlllusions' new Photon Paint 2.0 support animation directly. Animation support will undoubtedly become a standard feature of Amiga paint programs within the year, if not sooner.

DeluxePaint III permits a unique "animated draw" technique, where animated brushes are pasted onto succeeding frames in an animation with but one stroke of the mousepointer. Photon Paint 2.0, an Amiga HAM-mode paint program, does its work in the ANIM format on multiple HAM screens at one time. The ANIM format is about the closest thing the Amiga has to an animation "standard" file format, as a number of programs support it, either loading or saving in it,



or both. ("HAM", by the way, is Amiga jargon for "those nice 4096-color pictures.")

HARDWARE Animation

It's A Live!

The Amiga's vast bag of animation tricks even boasts a couple of *hardware* animating devices. A-Squared makes a device for all the Amiga models called "Live!" that facilitates some real-time frame capturing. Although its framing rate is somewhat limited to lower resolutions for capturing in real time, Live! does save an animation to disk while the motion is *still occurring*. It can even handle higher resolutions if you can withstand a rather slow frame rate.

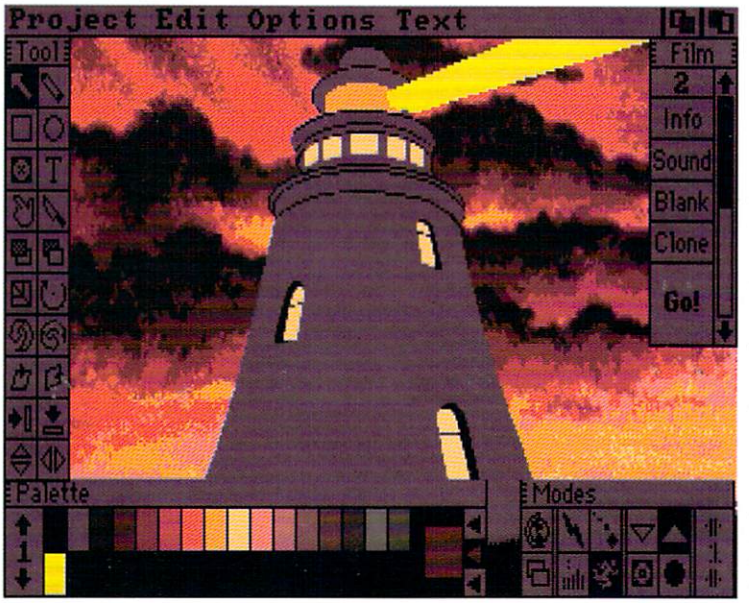
Another Amiga hardware animation device is Progressive Peripherals' FrameGrabber. Although the FrameGrabber doesn't do the Live! trick of capturing succeeding frames in real time, it does grab a frame in a 60th of a second. The difference is that FrameGrabber can't do consecutive frames at that speed (or anything like it). The FrameGrabber hardware stores the frame of video, then downloads it to the computer for further processing by its associated software. However, FrameGrabber supports the ANIM file format in its saves, so even though the time is longer than real time between the digitizing steps, the ANIM file can be played back in real time.

This technique for animating on the Amiga can be compared to the widely used "pixelation" techniques of classical animators. Animators - the classical ones that don't use computers (yet) - use this technique to animate clay figures in a very realistic manner. The same skills would of course apply to the Amiga hardware method of capturing the frames, but computer images would be generated instead of film frames.

The Sprite Animators

The usual way computers, including Amigas, make things move on screen in regular programs - independent of animation - is with "sprites." These are little chunks of memory that the computer knows how to display without disturbing what's underneath them. The Amiga's a very talented sprite mover, thanks to its custom graphics chips, which do that sort of thing without even working up a good sweat. The Amiga's mousepointer, for example, is a sprite that the system hardware keeps track of all the time, in order to be able to accept mouseclicks as user input.

It took a while, but Amiga software developers have put sprites and BOB's ("Blitter objects", like sprites only more flexible) to work in animation development programs. These programs are generally called "sprite" animation programs, but that's not necessarily exactly how they achieve the effects they generate. The star of this category is Gold Disk's MovieSetter package. MovieSetter doesn't trace any rays. It doesn't flip any screens, either. What it does is draw a screen on the fly from information the user provides when the MovieSetter animation is created. This information includes separate sets of data for the sampled sounds, animated character positions, background motion, palette and color cycling changes, etc. Each frame of the animation has its own set of "events", and the frame rate and frame replay sequence can be manipulated individually, too.



Fantavision shows off its convenient paint, and animation controls and gadgets.

The program simply draws the screen as fast as it has to, according to the user's instructions. Those instructions are entered interactively, and easily, so you can see what's happening, replay from any frame, change things, add or subtract sounds, pictures, backgrounds, etc. Indeed, one of MovieSetter's many strengths is its user interface, which makes animation not just easy but actually fun.


This frame was captured in real time from moving video tape with the FrameGrabber.

Vectors, Vectors

Another category of animation on the Amiga is based on mathematically described lines, blocks and shapes known as "vectors." A vector is just a set of math coordinates for an object, not the object itself. Rather than a collection of pixel information (bitmaps, in the trade), vectors are directions on what sort of object to draw where, how big to make it, and such. Since the Amiga has no trouble dealing with such things, it can draw and fill objects at incredible speeds - plenty fast enough to do real time animation based on vectors. An early Amiga animation title, Aegis Animator, is vector based. It's still around, but it suffers from being an early release, however, and it hasn't been kept up to date. Problems it has when it were new - inability to address overscan, frequent crashes - are still there, and there's no sign of any updating.

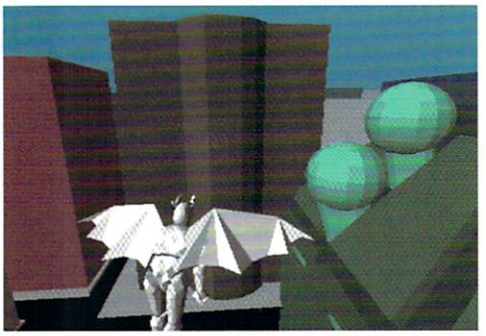
A much newer Amiga title by Brøderbund, however, brings vector animation up to the state of the art. This is Fantavision, which has an easy, mouse-driven user interface and performs a lot of the work of animation automatically in the "tweens" that it generates. Fantavision's friendly user-interface also permits attaching Amiga sampled sounds to any frame, and does its work in realtime so you can see what's going to happen. Its animations save in a very compact, proprietary format, and when placed in a subdirectory along with Fantavision's player program they will automatically load and play in turn, or you can have the player program adhere to a script on which ones to play when. With a list price of only $59.95, Fantavision is the lowest-priced of the Amiga animation programs, too, but don't let its low price fool you. It is neat, even though it does have some limitations as to screen resolution and number of colors it supports.

Two other vector-based titles are Antic's Zoëtrope and Forms in Flight. Zoëtrope is severely limited for video applications because it doesn't support overscan images, just as its predecessor, Aegis Animator, which was written by the same person for a different company (perhaps there's a correlation there?). Forms in Flight is noted mostly for its wireframe effects, although it renders, too, and some of its animations can get extremely complex and impressive.

The Amiga's original vector-based animation product is Aegis' VideoScape 3D, now in version 2.0. VideoScape, the work of programmer Allen Hastings, renders its objects in bitmapped form to a specialized version of the Amiga's trusty IFF

file format for graphics. The result is a highly compressed file which, when decompressed into the computer's memory, can be page-flipped to the screen in real time.

Many professional animators are using VideoScape (and other things of course) for their productions, including a company called Winners Circle Systems of Berkeley, California. Winners Circle's Amiga-based animation "Time and Again" was selected for showing in the prestigious Siggraph video theater last year. In computer animation, that's about like winning



Time & Again, the animation chosen to be included in the prestigious Siggraph Video Theatre.

the Academy Award, though of course not as widely publicized.

VideoScape's animations display a faceted quality to the objects, which lends quite an interesting "look" to Winners Circle's animation. For the animation enthusiast, however, VideoScape's object format is rather forbiddingly text-based. That is, you have to type scads of parameters into a text file, which the program them imports and uses to draw its objects. It comes with good examples of the files you need, but avid VideoScape users will most likely prefer using an "object editor" program of some kind - there are several - rather than typing text files. Objects can also be imported from other Amiga programs using InterChange, a facility that some of the object editing programs offer in a limited form, as well.

New Developments

A brand-new software product named AniMagic, from Aegis, makers of VideoScape 3D and other software titles, works on ANIM files generated by VideoScape (or other programs) to produce full, video style fades, wipes, dissolves, and the absolute fanciest of video special effects. The program reads data from ANIM files and generates a new one that combines the others in ways that you have described to it in its graphics-based (meaning mouse-clickable) "script" editor. For example, many network television program intros move a picture block around the screen while the both of them are in motion. The block might appear to roll, twirl, whirl and swirl *while* its picture still moves, too.

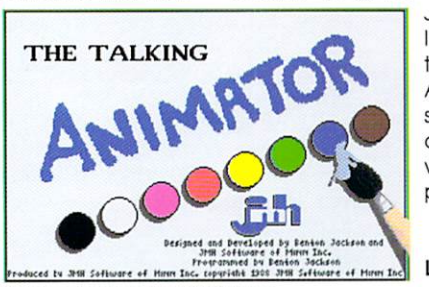
You can do the same thing with ANIM files using AniMagic, but the work is done on the disk files that describe the graphics, rather than occurring in real time as the pictures are coming in from Studio A, Camera B, Tape Deck 37, etc. AniMagic isn't an animation program. It's an animation *manipulation* program largely aimed at video production applications.

An Animation Language

The most unusual and one of the most capable Amiga animation programs is really more of a programming language than an applications program. It's The Director, by The Right Answers Group. The Director, for a list price of $69.95, enables a very high-level, interpreted command language for making Amiga screens animate. The strength of the product is that it *is* a command language, and that's also its biggest problem. You have to write a program to make something work, and programming isn't everybody's niche. The Director's programming language is very similar to BASIC in its structure and syntax, but it adds a whole bunch of commands specific to doing animation on the screen.

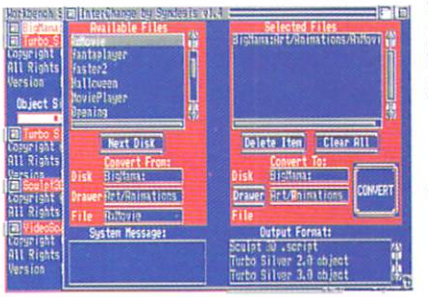
The Director will load and play other programs' animations *while* one of its own is proceeding. It will, for example, play an ANIM in a window on a screen of its own (memory permitting, of course). The Director language has commands for integrating music, sampled sounds, text, logically generated screens and backgrounds, and timing all of the above to the user's whims.

Another "language-based" Amiga animation product is Mindware's PageFlipper Plus F/X. The "F/X" part of that is moviemaker-ese for "special effects." The program permits mouse clicking your way to a script, however, rather than having to type one in (though you can just type it if you prefer). The images are then loaded and stored in memory, and the program performs many special effects and graphics manipulations as it displays them in the order and manner you've specified with the script.



Childproof software by JMH Software.

PageFlipper Plus F/X and The Director are both extremely powerful script-based animation packages, PageFlipper being less language-intensive than The Director on account of its elaborate user interface that essentially produces the script for you as you click the mouse on its many buttons, gadgets, and menus.



Interchange ties together all the differing object formats.

The Classical Approach

No matter how easy some of the Amiga animation programs are to use - and many of them are REALLY easy - classical animators pine for their long-loved "cells." Several Amiga products aim at just that - classical animation. They include Animator's Apprentice and Animator's Apprentice Jr. by Hash Enterprises, and a recent introduction by MicroIllusions, Photon Cel Animator.

Photon Cel Animator is what its name says it is, a "cell" animation program. Photon stores its cells in chunks of the computer's memory like everything else does. However, although most other Amiga animation players compress the frames into memory and then uncompress them on the fly, Photon takes the conservative approach and stores the whole thing uncompressed. Although that consumes much more memory (*lots* of memory for Amiga HAM screens, for example), that gives the program very precise and predictable control over the timing of the frame display, which is interfaced to video recording equipment for building full-scale, professional animations complete with synchronized sound track. It is the synchronization and timing which is Photon's strength, and its ability to interface to single-frame video recording equipment.

Even at a list price of $150, the product is aimed primarily at a professional animation market, and in the hands of a serious classical animator its tools are electronic heaven. MicroIllusions also markets companion products for videotape editing and control from the Amiga - another requirement of professional-level animators.

For the Young Ones

Amiga animation is a fascinating thing, and there's no reason to leave out the younger set when you talk about being able to animate on the computer screen. For the kiddies, the Amiga even has a child-proof, scaled-down animation program, The Talking Animator, from JMH Software of Minnesota. It puts simple animation in the hands of the youngest of Amiga users - although these days, the younger set is often startling their parents with their facility at the computer.

Looking Ahead

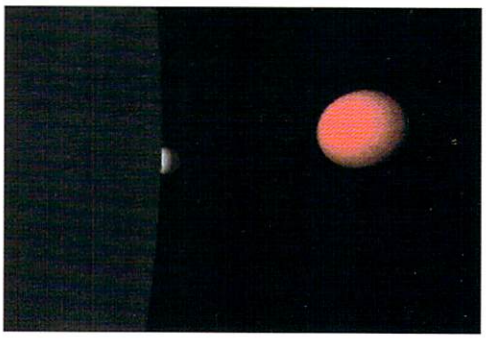
There are new animation products aplenty on the horizon, and the chances are that the task of making images move on the screen will get easier, and more fun as time goes by. However, for doing animations, you can't beat a computer, and for doing animations on an *affordable* computer...

Only Amiga Makes It Possible.

J:

TURBO Silver

by Clyde Wallace



Turbo Silver 3.0 is one of those animation packages that combines ray tracing with animation. Its animations are a series of page-flipped, raytraced pictures. Because they are raytraced, you can expect the animations to display a great deal of intricate shadows, reflections, and light detail as different objects move in and about other objects and light sources.

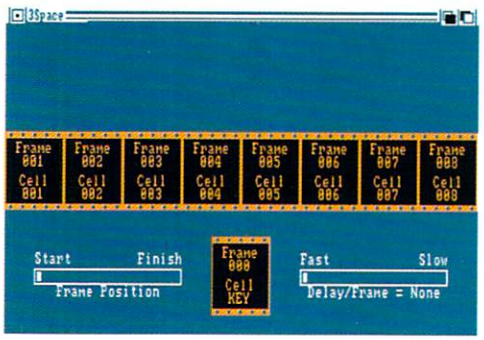
The animation, Spacial FlyBy is a small, planetary system (spheres) in 3-D space. There is one large planet in the center, and several moons to give some spacial perspective. What's interesting about this animation is that the observer (you - sitting in a spaceship, looking out the window) are moving around in that 3-D space, in and around the planets. The sun is initially to your left, so as you move to the dark side of a planet, you can see shadows and shade changes with respect to the sun.

In this animation, the world (planets and moons) sit still, as they should, and you do all the moving. This "observer" based animation is especially easy to do with Turbo Silver.

CREATING THE WORLD

Turbo excels in dealing with three-dimensional space. To create the small world, add a series of spheres to serve as planets and moons. Then vary the size of the moons to add some spice. This is easily done with a size requestor which can be summoned for each object in turn. Then, by switching from a top view to a horizontal view, it is easy to position the spheres around eachother with point and clicks.

A quick peek with the wire-frame mode (Turbo's fast render option) will show whether the planets are in the right locations. Once the planet and moons are pleasingly positioned, a light source can be added. Just add a point (Axis), and with the Attributes Requestor, make it a light source, like the sun. Then with the same point and click method, position it to one side and slightly in front. This will act as a perspective reference by throwing light and shadows directionally.



TIP: Don't forget to add a light source. Turbo Silver will not check to see whether there is a light source before doing a full raytrace, and such an omission doesn't show in wireframe preview mode. Of course, if you raytrace a scene in which there are no light sources, you get a totally black picture - after a long session in the raytracing mode.

ADDING A STORY

The story line is as easy to add as the objects themselves. A story is a path of points for objects to follow. The points are added by clicking with the mouse along a path. This means it was possible to have the moons circle the planets, but for this example, too much motion would have been confusing.

After placing the observer some distance from the planet, a path of points was laid down, moving toward the planet, then around the planet, and back. The problem here was that the observer always faces forward (north). So as the observer would fly around a planet, he would first be facing the planet, then as he moved around it he would be staring into blank space as he moved backwards, and all this would produce an unrealistic feel. So, to have the observer always face the direction he is traveling, a reference object was added (a sphere, axis or any object would do).

This type of effect would always have the observer facing forwards, so as he orbited a planet, he would always see a piece of the planet traveling by. The object was given another path, (ADD AXIS, then ADD POINTS) always slightly ahead of the observer. The reference object would be given the story of the second path to follow. Then by asking the observer to always face the reference object - using the TRACK function on the reference object - he (or she, or it for that matter) would always be facing the direction of his/her/its path. This same effect could also be achieved by using a "Follow-Me" option with STORY. With this option, you could ask the reference object to simply follow the same path as the observer. But by placing your own path for the reference object, you can more easily control where the observer is looking. For instance, in this example, as the observer orbited the large planet, the reference object was placed slightly closer to the planet. This would cause the observer to look towards the planet, allowing more of a view of the planet during the orbit.

PUTTING IT ALL TOGETHER

Now that the sub-universe is created, and the observer, and reference paths are set, the actual animation creation begins. When Turbo Silver first boots up, you see a film strip with several frames visible, and what is called "FRAME 000". It is in this frame that the universe and stories are created. The next step is to decide how many frames you want the animation to use in developing the stories. Whether you give it 5 frames, or 50 frames, your stories will have been completed, and unwound in full. Therefore, the only difference will be that the 5 frame animation will be very fast, and very jerky (full speed animations run at 30 frames per second.) Although you can slow down the number of frames per second with a handy slider, this will not eliminate jerkiness in your animation.

Another consideration in determining the number of frames is raytracing time. Each frame is a complete raytrace, requiring anywhere from many minutes to many hours to complete depending on the scene's complexity. To have 50 of those would consume your Amiga's processing time for a while.

Fortunately, and very forsighted of Impulse, was the addition of a Wire Frame mode. Before you commit to many days of raytracing your animation, you can ask Turbo Silver to recreate the animation in wire frames. This nifty mode allows you to see the general motions before beginning the raytracing. Another mode is Solid Modeling. This will fill in your objects as solids, and rough out the shading to give you a better idea of more complicated scenes. Although this mode is faster than a full raytrace, it can still take hours.

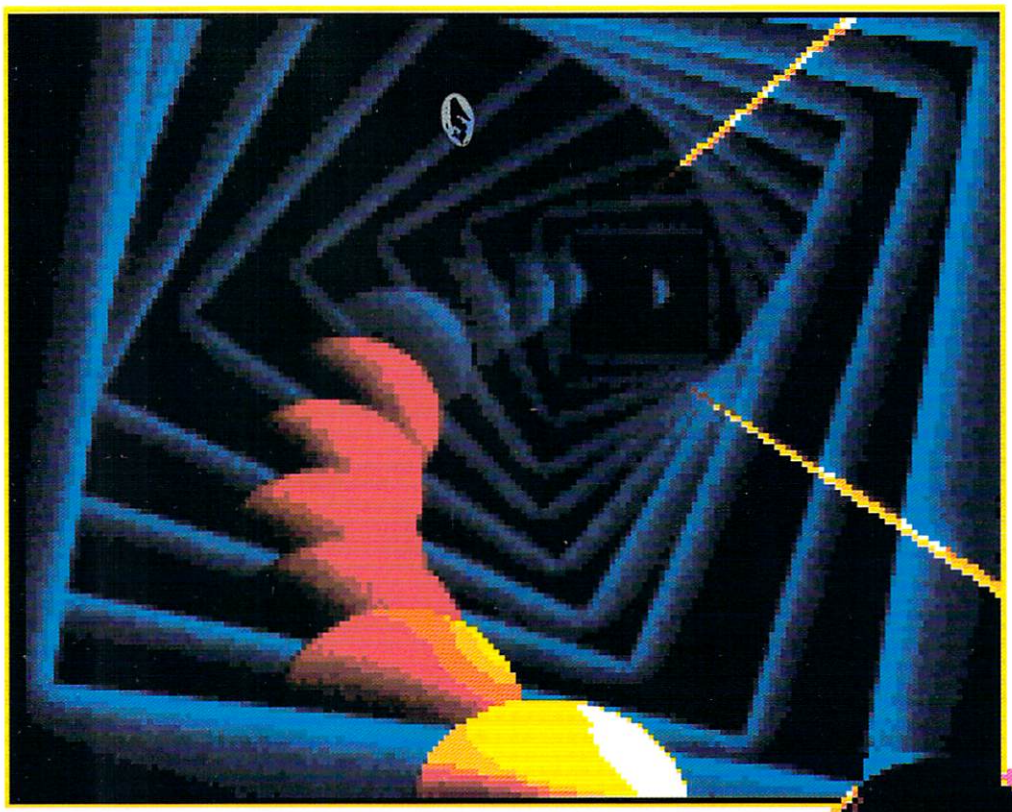
When you're ready to begin the actual raytracing, simply select the total number of frames. Then with a quick few keystrokes of Amiga-Z, Amiga-A, Amiga-T, you stretch the stories over your frames. From here you can set Turbo Silver to tracing. And the net effect of all this... the animation called Spacial FlyBy.

Summary

Overall, if you are creating animations based on simple objects, Turbo Silver is probably one of the best choices you can make. The animation included is a simple animation, but carries a good effect for a simple set of spheres. The whole process took about two hours to set up, with the last hour-and-a-half tweeking little details to taste and satisfaction. In closing, simple imagery and animations can be easily created with Turbo Silver by the beginner. The learning curve is very gentle and shows no ceiling. •

FANTAVISION

by Brian Roberts



The accompanying Fantavision animations are some that I did for a video presentation to promote the NCR Championship volleyball game last season. Volleyball is important at NCR. At least it is among the employees, which makes it important at NCR, too, where the management likes to keep the programmers happy. Naturally, as important as volleyball is, we therefore spare no effort in coming up with the finest, most humorous promotional materials, the sickest puns, and the best volleyball teams.

These animations were designed to be combined into a videotape, and they're pretty specific to NCR volleyball, so if you're not an NCR Volleyball Booster Club Member. . . well, such a thing is unthinkable, anyway. The animations do show off Fantavision's text capability (however limited) and what can be done with it rather quickly and very easily.

The Opening animation is a television-style animation of the block letters of the NCR logo. NCR Sports is the fictional sponsor of the volleyball tournaments. I put some extra fade-in/fade-out space at the beginning and end of the animation to give me some leeway in the videotaping process.

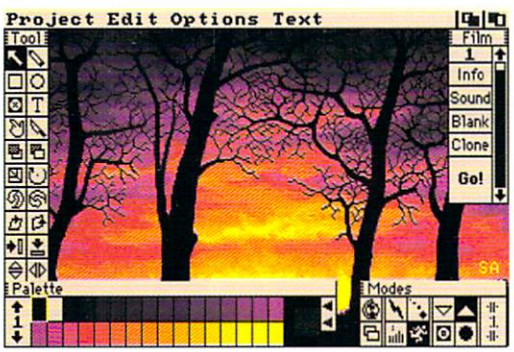
The second animation is PlayoffBracket3. The video picks up in the quarterfinals of the tournament, so this is what has gone on before. Again, there's some extra splicing space before and after. The next sequence is StartingLine II, which sets the stage for the final championship game between Tequilla Sunrise and 2 Awesome.

I did all these using an Amiga model 1000 equipped with 2.5 megabytes of memory and enough harddisk space to store pretty much everything in two counties. I won't even tell you how much other hacking and chopping I've done on the machine - let's just say it isn't "vanilla" any more. Nevertheless, none of these productions would require any expansion to do in a stock Amiga.

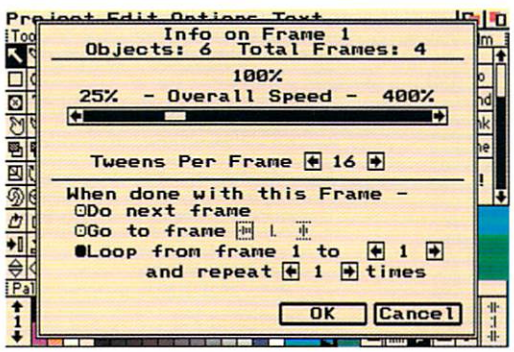
Pasted together onto videotape, these Fantavision animations (and a few other goodies specially prepared for the occasion) made a very professional-looking presentation with which we promoted the tournament, and the Amiga's animation capabilities didn't fail to be noticed, either.

Oh, just in case you somehow miss this point. . . yes, all this is done with tongue in cheek, and we have a grand time doing it. Programming on those NCR Towers gets frustrating sometimes, so we all need a little recreation.

NOTE: There is an additional Fantavision animation included in the issue called Marilyn. It is a color animation of Marilyn Monroe which demonstrates changing brushes over top of a background image. The brushes are Marilyn's eyes and mouth. •



This is the main screen for Fantavision. On the right are the paint and object gadgets. To the right are control gadgets for the animation frames and sound.



Frame Control Screen. With this screen you can control the tweening in the frame, and looping control.

ELAN PERFORMER

by Clyde Wallace

Despite numerous attempts to standardize an animation file format, without fail, with every new animation program there is a new animation format. Elan Performer serves as a middleman to all the myriads of animation file formats. By reading all these different formats, you can compile different animations together.

Different animation programs have different strengths. So, oftentimes people will own several animation programs. Since each different animation program saves in a different file format, there previously was no good way to combine different animation file formats. With Performer, you can create a cell animation with Zeotrope, a multi-object animation with Videoscape-3D, and several HAM images from PhotonPaint and use them all together. With performer you can load each animation and assign them to different keyboard keys, or assign them an order in which to play.

The only real advantage to this is to create a presentation from these different animations. You can display the presentation, and record it onto videotape, or you can have your Amiga display the presentations. Since Performer has no separate runtime package, you or the person viewing the presentation, must have Performer for their computer.

DISPLAY METHODS

Performer can display animations three different ways. There is an automatic sequence, where you specify the order animations are to play in, and the animations are then played sequentially. You can specify different speeds, durations and loop times for each animation separately.

Then there is Manual Sequence. This is similar to automatic sequence, except you can step through each animation with the mousebuttons, or the cursor keys. While you were giving a presentation, like a slide projector, you could go back a couple frames, or back up a couple animations as you pleased.

The third display method is direct play. This is more of a live presentation. You can press the keys on the keyboard to call up pictures or animations which were assigned to those keys.

An added advantage is that Performer can re-save as any other animation format it supports, or as individual frames (via IFF) to be edited by a paint program. Simply as a conversion program, it has that added value.

FILE FORMATS SUPPORTED

RIF FORMAT

This is the format generated by Zeotrope by Antic Software. Elan Performer will let you set the number of loop times, speed and optional double-buffering to keep palette changes smooth.

ANIM FORMAT

With ANIM files, Performer also lets you set the number of loop times and the animation speed. ANIM files are generated by DeluxePaint III, PhotonPaint II, and Videoscape-3D among others. It is what is considered the "standard" file format for Amiga animations; it is based on the IFF standard for pictures to some extent.

PICTURES

Performer can also load pictures as IFF, HAM and even RGB format from programs such as Digi-View. For pictures, you can set the display time for each one.

INVISION/A-LIVE

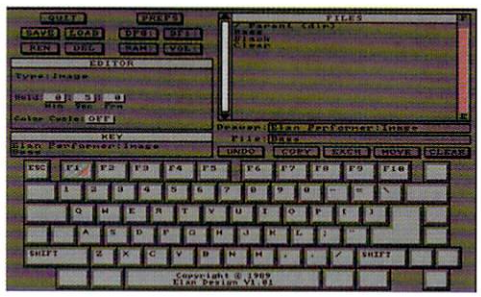
Performer can load animations from LIVE and INVISION and use them the same way as other animations - such as breaking them into their individual frames.

DRAWBACKS

The people at Elan tell you that Performer is suited for video work. Since Performer does not support SMPTE (which is a video timing code), it is only useable in consumer level applications. For example, "I'd like to record my animations on my VCR without having to pause the VCR between animation changes." However, critical launching of animations timed with music or sound, or frame by frame alignment is not possible without SMPTE support.

Performer only supports the animation formats mentioned above. It does not support Fantavision, MovieSetter or Turbo Silver. There is no mention of planned upgrades to include future formats.

There is also no support for sound. Although the company says you can multitask a music program for sound, in reality you might as well play your radio while watching the Amiga. Multitasked music programs will only add background music and will not time sound effects to



what is going on visually. This is all assuming you have enough memory to multitask all this in the first place. Oddly both Fantavision and MovieSetter support sampled sounds timed to the animation frames - in file formats that Performer does not deal with.

ADVANTAGES & NICETIES

This program is excellent for presentations. If you are giving a business presentation, you can control what is going on with a mouse. You can integrate complex animations into one large presentation. If you would like to record several of your animations onto your consumer VCR without having to pause, Performer will help you do this.

Performer allows you cut and paste from different animations - a very versatile feature which is supported nowhere else other than DeluxePaint III.

Performer IS memory intelligent, so you can run hours and hours of animtions, only limited by the amount of disk space. A feature not seen elsewhere.

CONCLUSION

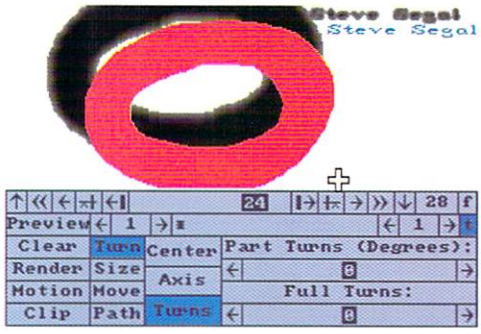
Performer is good for what its name says: performance. If you are using your Amiga in performance, or for a presentation, and assuming you require more than one animation program to complete the presentation, Performer is very appropriate. Or if you are interested in working on consumer level recording of animations onto video tape, Performer will let you prearrange and schedule how the animations are displayed ahead of time. So you just hit RECORD on your VCR, start Performer, and never have to pause the VCR until all the animations are completed. The consumer level video work is Performer's strongest point. •

ZoëTrope

An Amiga Animation System

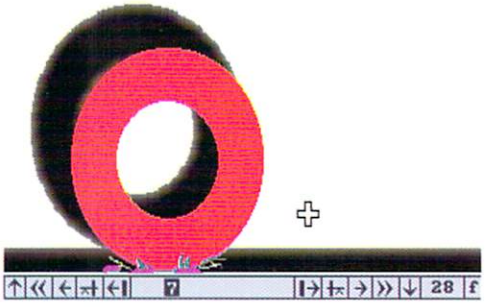
by Mike Hubbart

"Zoëtrope is an Amiga animation system with many powerful features, including "Cel" animation, 3-D animating, delta file compression, layering of drawings, powerful painting tools, and text manipulation. Zoetrope requires an Amiga with a minimum of a megabyte of memory, and runs in the low-resolution graphics mode. Overscan is not currently supported, although the program's publisher, Antic Software, has stated that the next release will support it. Since overscan is a must for professional video work, this is a much-needed addition for this product to fit into a very competitive marketplace alongside other Amiga software like FantaVision and MovieSetter. Another feature lacking in this



This is the submenu which allows you to specify paths, rotation and behavior of animated objects.

release of Zoetrope, is HAM picture mode - another necessity for professional video work. These missing features stop Zoetrope from competing on a professional level and consign it to a role in the hobby area of desktop video.



The VCR-like controls are definitely in vogue this year when it comes to animation programs. As seen here, they are used to move as well as delete and add frames.

The program package includes two copyrighted, but freely redistributable, display programs that can sent along with your demos so others can play them without having to purchase Zoëtrope.

After spending several months with Zoëtrope, I am now hooked on animation programs and look forward to exploring more of this facinating software on the Amiga. This type of program is a must-buy; I realize many Amiga owners have never worked with building their own animations, but most of us have seen the fabulous demos created and freely distributed since the Amiga's inception. One could write a book about animators.

Program Overview

The Zoëtrope manual is over 160 pages long - a necessity for a program of such complexity - and is divided into two main sections: tutorial and reference. Now believe me, this is one program that you had better read the manual until you are completely familiar with the program. If you have never used an animation program, don't try it without knowing enough about the program to keep from getting frustrated.

There is a Quick-Help chapter in the start of the manual for those that are too anxious to read the manual after laying out $119 for this animator. Quick-Help is only four pages long, but is enough to whet your appetite until you can calm down and start reading. Resist the temptation to experiment after doing Quick-Help; the manual's six chapters of tutorials will answer your questions with visual confirmation that you are doing the procedures properly. This is not the best users manual I have ever seen, and a rewrite is definitely in order. A little more time working on the manual could save us a lot of grief - the manual's organization requires sitting down and going completely through each chapter in a single sitting. A summary of command sequences at the end of each chapter would be a welcome addition.

Features

Zoëtrope uses a playbar at the bottom of the screen to move through or change animation sequences. The files can be loaded from either the main or data disks for display. There are five different file formats directly supported by Zoëtrope: .rif, IFF, .win, .col, and .apm. The .rif file is the main format used to store complete frame sequences. IFF single frames can also be used for animations. The .win file is for brush files, and .col is for color files. The .apm is a file that stores the settings for the APM menu selections.

Anitozoe is a program included in the package that will convert Aegis Animator's (also written by Jim Kent, the author of Zoëtrope) .script files into the Zoëtrope .rif format. This lets you work with those animations that have been out for Aegis Animator, one of the earliest animators for the Amiga. Cropper is a program included to convert between several formats, like the .anim format (from VideoScape 3D and Video Titler) to .rif or .rif to .anim or .script files (Aegis Animator). It also will convert from .seq files (from Atari Cyber Paint) or from .rif files not 320x200, to .rif files 320x200.

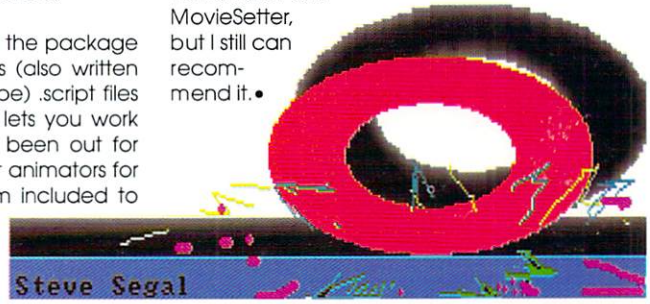
Tutorial Overview

The Zoëtrope tutorials teach how to animate a figure and make it move across the scenery in the background. Another one demonstrates the drawing tools with which you change animations or draw completely new ones and how to work with text. Chapter Three's tutorial introduces Cel Animation in depth. This is where we learn what tweening is all about - where the program takes two frames and fills in the frames with a sequence of drawings that show the transition between the two frames. Other tutorials deal with the special effects Zoëtrope has to animate, rotate, move, stretch, etc the figure(s) in the frame(s). This is where you learn the real power of this program. Zoëtrope also has color special effects which include fade, Xerox, chrome, metal, inverse, red, green, or blue. The final chapter of the tutorial covers advanced special effects to add that special touch to your animation. Some of these advanced effects include de-focus, antialias, shatter, wipe, outline, tile, unrez, ripple, and buzz.

Summary

To learn this program, or any animator for that matter, requires a LOT of time and effort. There are a lot of tricks to learn, and and you will not be making masterpieces in just an hour or two of use, but you may know if this type of software appeals to you. This software costs the same as two or three games, but will keep you occupied much longer and the results will be more rewarding when you show that animation off to your friends that have spent all that time playing "Space Conqueror".

Regardless of the shortcomings of lacking HAM, overscan, and a well-organized manual, I like Zoëtrope and have spent many hours working with it. While lacking options needed by professionals, it has many things to satisfy us amateurs. It is a little pricey, especially when compared to FantaVision and MovieSetter, but I still can recommend it.•

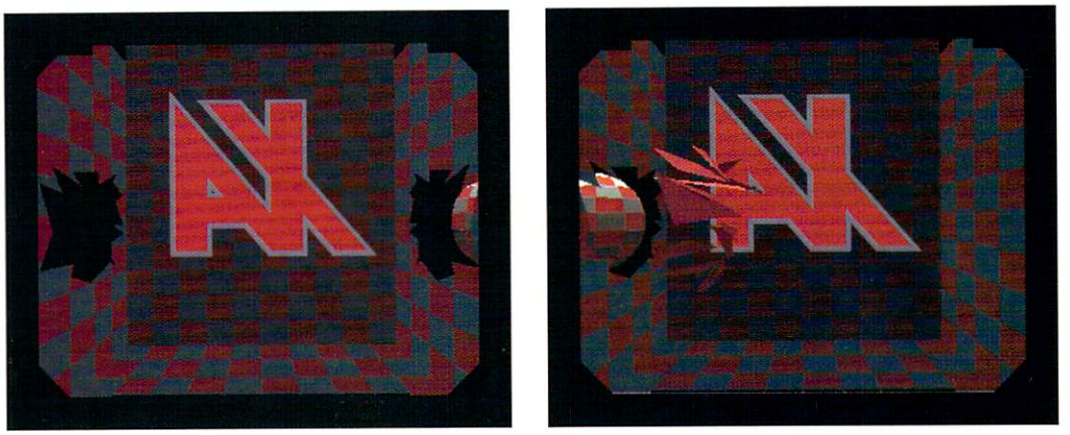


VIDEOSCAPE-3D

by Tysone Liotta

Videoscape 3D for the Amiga, by Aegis Development, is an extremely versatile package for creating complex 3-D animations very easily. Unfortunately, Videoscape at first glance is very confusing, and the average Amiga owner may well give up before actually generating animations. This is a tutorial to take you step by step through the generation of a sample animation.

To do this project you need Videoscape, an Amiga with two disk drives, at least 512-K of memory, and three blank disks (unless you're using Videoscape from a harddisk drive).



The objects described in this tutorial were also used in an animation featured in A.X. Magazine Issue 1.3. In this animation (not included), when two monitors were placed side by side, the animation was so timed that the boing ball would

Setting Up Your Working Disks

The first step in generating an animation with Videoscape is to set up working disks that contain the files and utilities you will be using. You will need "geo" and "mot" subdirectories in which to save objects and motion files on a "data disk" in the extra disk drive. If you're not familiar with the CLI it would be best to learn its basics, since Videoscape can be used more easily from CLI than from the Workbench.

Animation Description

The demo animation consists of the word "AX" in two dimensions. In front of it is a blue and red checkered ball. The AX will flip end over end on its vertical axis rotating from right to left. At the same time, the ball will orbit the AX, travelling left to right.

Creating the "AX" Object

Before creating an object it must be drawn out on graph paper to determine its "coordinates". The x and y axes have both positive and negative numbers with zero located in the center. For the x axis, positive numbers must always be to the right and negative numbers to the left. On the y axis, positive is on the top and negative the bottom. When creating your graphs, be careful to have positive and negative numbers on the correct sides, or your shape will come out wrong. The z axis is utilized by Videoscape as well, but the AX shape is flat and only two axes are needed.

After the x and y axes have been drawn and numbered, mark the points that will be joined by lines to make up the polygons in your shape. The designer 3D program can make polygons of up to six points. If a single polygon in your object has more than six vertices it must be split into smaller shapes of less than six points. All points should be labeled in the format "x,y" where x is the number on the horizontal axis and y is the number on the vertical axis.

Using Designer 3D Program for the "AX" object.

Boot the program disk and insert the second (data) disk in your external drive, and get a CLI window running. Run the Designer 3D program. Once it has loaded you should see three black squares surrounded by a field of green. The upper left hand box lets you work in the z and x axis, the bottom left with z and y, and the lower right with x and y. Try moving the diamond in this square by clicking on it and dragging the mousepointer. The x, y, and z coordinates change in relation to your mouse movements.

The shape has five polygons that can be entered in any order; using the left leg of the "A" as the example, start with a point in the bottom left corner of a shape and continue clockwise around the shape, entering each point in turn. If the points of a shape are not entered in order, either clockwise or counterclockwise, then the resulting shape will come out wrong.

Point 1 should be entered first. This point has coordinates of -17,-10. Click on the diamond in the lower right hand box and drag the mouse until the coordinates listed at the top of the screen read "x=-17.0 y=-10.0 z=0.0". Next, click on the "add above pt" box to add this point to the current polygon. Then click the right arrow of the "Point" slider. The number above the slider should change to "#2". The coordinates of the next point (traveling clockwise) are -10,10. Follow the same routine you used to enter the first point; don't forget to click on both the "add above pt" box and the "Point" slider arrow. To complete the polygon enter points -7,10 and -14,-10.

You should you now have on screen a drawing of the left leg of the "A" in the lower right box. The number above the "Point" slider should read "#5" and the number above the "Polygon" slider should read "#1". To pick the color of this polygon. Click on one of the two light-red boxes to set the color to red. Enter the second polygon's coordinates in the same manner. Change the polygon color to light red and advance the "Polygon" slider. When you have entered all the points and polygons, save the "AX" Object in the "Geo" directory on the second disk as "AX.ax".

Creating the "Ball" Object

The second object in the animation is a blue and red checkered ball. Since a sphere would be almost impossible to create using D3D, Videoscape provides the EGG program, which handles complex objects such as spheres, cones, cylinders, and disks. The "Ball" has a diameter of 10, and its center lies 5 from the edge of the "AX". To create a sphere using these specifications you first use EGG and then OCT. Exit D3D and run the EGG program.

A list of geometric types that are available will be displayed on the screen. Choose #2 to create a "faceted sphere or ellipsoid". Enter the file name as "Ball.ax". You will then be asked for the number of rings and points per ring. These values determine the number of squares the sphere will be made of. The first value is the number of squares from one pole to another. The second is the number of squares along the equator of the sphere. Type: ***10,10***

The next option is the radius of the sphere. The "Ball" object is perfectly spherical, thus the two radii values will be the same. Enter "5,5". EGG then asks whether you want interior polygons. Enter "N", since the sphere will not be viewed from the inside. Two colors create the checks on the ball. For this example, choose 1 and 4 for dark blue and dark red. Now save this file to disk under the name "Ball.ax".

The next step is to offset the ball by -25 to put it into position next to the "AX". The program OCT accomplishes this. Exit EGG; run OCT, and enter the name "Ball.ax". At the first prompt. Type: ***Y*** when asked to transform object #1. You now enter three values to scale the ball. Since there should be no change, enter "1,1,1". There are no angle changes, so enter "0,0,0" for the next option. Next is the x, y and z offset. We need the sphere moved -25 in the z direction, so enter "0,0,-25". Since all the sphere colors have been set previously, no color changes are necessary. When you've entered all values, type: - to tell OCT that this is the only shape you want to modify, then supply the SAVE filename "Ball.ax".

Creating the Camera Motion File
Making the camera motion file for this animation is simple, since the camera position is fixed. All we need is the camera location in x, y and z coordinates and the total number of frames in the animation. To do this you create a text file named "Cam.ax" on the data disk. You can do this in any text editor, or use the Amiga Workbench's ED program.
The camera movement file will look like this:

```
3DC1
2
0 0 -61.7510 0 0 0
0
0 0 -61.7510 0 0 0
15
```

The first line, "3DC1", means we are specifying camera movement, not object movement. Line two contains the number of key movement frames. A key movement frame designates the camera's position at any time. The user designates the number of animation frames to be generated between key positions, and Videoscape handles the work of generating the inbetween frames. The lowest number of key frames that can be specified is two.

The first key frame is "0 0 -61.7510 0 0 0". These numbers stand for: x y z Heading Pitch Bank. X, y and z are the coordinates of the camera position. Since the main animation will be occurring at the origin (0,0,0) we want the camera to be looking at this point. A positive z value will move the camera forward in space; a negative value will move it backward. Heading, Pitch, and Bank specify the direction the camera looks. Since the camera is to point straight ahead, these values are zero.

The fourth line designates the number of frames to be calculated between this key frame and the previous key frame. Since we've designated only one key frame so far, this number is not applicable; however, Videoscape requires a number, so type in a zero. Line five is a copy of line three, because we wish no change in camera movement between the two key frames. The final line tells how many frames we want between our first and second key frames. The more frames, the smoother the animation will be, at the expense of memory.

Generating the two Object Motion files
Object motion files are much like camera motion files. Since there are two objects in this animation, we must create one object motion file for each. Here are the two files:

```
"Amov.ax"        "Bmov.ax"
3DM1             3DM1
2                2
0 0 0 0 0 0      0 0 0 0 0 0
0                0
0 0 0 360 0 0    0 0 0 360 0 0
15               15
```

The Amov.ax file is for the AX object and the Bmov.ax file is for the ball object. Omit the quoted filenames when typing in the file. Use ED or your favorite text editor to create the files, and save them by the quoted filenames into the df1:mot subdirectory.

The line "3DM1" designates this file as a Videoscape object movement file. As in the camera motion file, we must specify the number of key frames in the AX shape's movement. Since we want the AX shape to rotate 360 degrees, starting at zero degrees and ending at 360, the first set of coordinates is "0 0 0 0 0 0". The next line is the number of frames between this key frame and the previous key frame; since there is only one key frame so far, this is zero.

The second key frame is "0 0 0 360 0 0". This puts the AX object in the center of the screen with its heading value at 360. Thus, it has rotated 360 degrees on its vertical axis so that it once again faces the camera. The next line tells how many frames it should take for the AX shape to spin around.

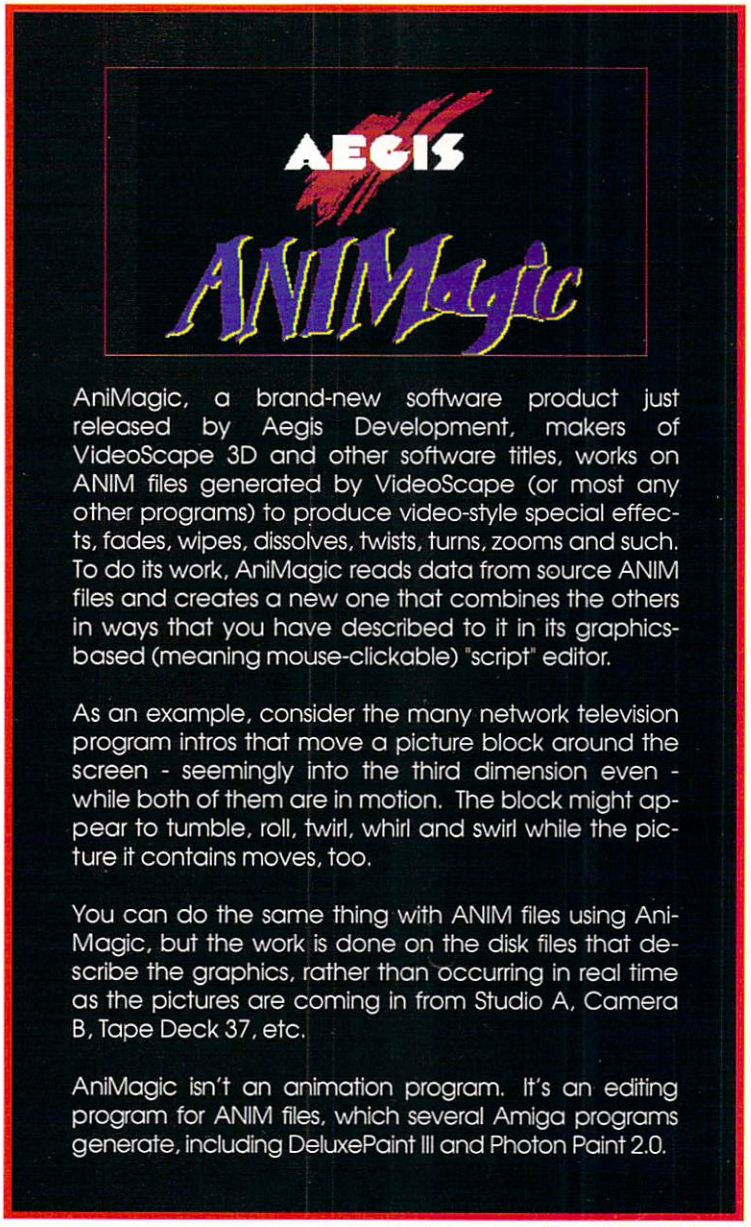
Compiling the final Animation
Generating the finished animation requires the main Videoscape program "3D" on the master disk. Ready? First run the 3D program. Now tell Videoscape what objects and object motion files to use. Click on the "load object" box and enter "df1:geo". Select the "Ax.ax" object with the mouse and click on "OK". Videoscape will ask for a movement file to go with this object. Enter "df1:mot" for the directory and select "AMov.ax" as the object movement file. After Videoscape has loaded the first object file and its object movement file, select "load object" again and oad the ball and its movement file in the same way.

Next load the camera movement file. Click on the "load motion" box, enter the directory as "df1:cam" and pick the "Cam.ax" file. Now, to pick the ground and sky colors, click the up or down arrows in their boxes until you get the colors you want. Next insert the blank, formatted disk on which the finished animation is to be written and select, "begin Anim recording" from the "record" pulldown menu. Set the directory as df1: (your blank formatted disk) and type: ***Ax.anim*** for the name of your animation, then click "OK", and click on the "begin animation" box at the bottom of the screen. The AX animation should begin calculating its frames, showing each one in turn on the screen and saving them to the disk.

When viewing the animation with the "Showanim" program it is necessary to repeat the first two frames of the animation as the last two frames in the animation for a smooth rotating effect. To do this, once the animation has finished calculating and saving, insert your "objects" disk in the second drive and reload all the files for the animation, select the same sky colors, but click on the "yes" box next to the words "Pause after each frame". Begin the animation and after the first frame has been calculated press "enter" to tell Videoscape to calculate the second frame. Now hit the "0" key on the numeric keypad to tell Videoscape to stop calculating frames. Once back at the main menu select "stop anim recording" from the pulldown "record" menu. When the drive light goes off, your animation is complete!

Running your Animation
Exit from the 3D program by choosing "quit" from the project menu. To run the animation type: ***showanim -c df1:AX.anim***

Sit back and enjoy! •



AniMagic, a brand-new software product just released by Aegis Development, makers of VideoScape 3D and other software titles, works on ANIM files generated by VideoScape (or most any other programs) to produce video-style special effects, fades, wipes, dissolves, twists, turns, zooms and such. To do its work, AniMagic reads data from source ANIM files and creates a new one that combines the others in ways that you have described to it in its graphics-based (meaning mouse-clickable) "script" editor.

As an example, consider the many network television program intros that move a picture block around the screen - seemingly into the third dimension even - while both of them are in motion. The block might appear to tumble, roll, twirl, whirl and swirl while the picture it contains moves, too.

You can do the same thing with ANIM files using AniMagic, but the work is done on the disk files that describe the graphics, rather than occurring in real time as the pictures are coming in from Studio A, Camera B, Tape Deck 37, etc.

AniMagic isn't an animation program. It's an editing program for ANIM files, which several Amiga programs generate, including DeluxePaint III and Photon Paint 2.0.

MOVIESETTER

by Chris Bailey

MovieSetter's most outstanding feature is its user interface. Everything is done in a movie-like manner, from the remote control window that guides your hand through the movie making process to the Set Editor in which you "build" smaller animations.

As with most animation programs, there are plenty of different features that come into play when making a MovieSetter production. Each of these is an "event" in MovieSetter. A MovieSetter event might be the playing of a sampled sound or the changing of the background. This distinct separation of elements makes putting together (and taking apart) a complicated movie easy.

The program operates only in low resolution, although videophiles can turn interlace and overscan on, to remove visible scan lines and borders. This may seem like a limitation at first, but Gold Disk opted for speed and easy handling in low memory environments over operation in other resolutions.

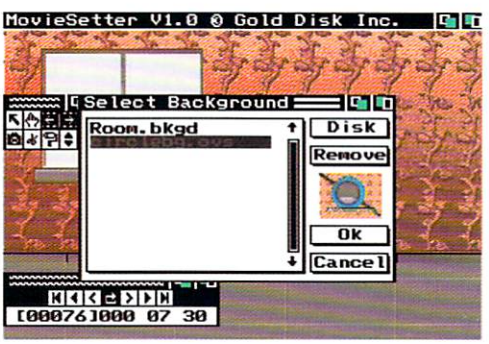
Backgrounds

A MovieSetter background is an IFF file created in any IFF-supporting paint program. No facilities are provided within MovieSetter for creating your own backgrounds. Once you have selected a background file to load (using Gold Disk's wonderful file requester), you select the manner in which the background will appear on the screen. There are six screen wipes to choose from, depending on how dramatic you want the transition to be.

You can make backgrounds scroll horizontally or vertically. If you are clever with the design of your background and make it so that the edges look good when joined together, you can make the background look continuous. The starfield behind the gold AX logo animation at the beginning of the example animation in this special issue is a good example of what you can do with a scrolling background. I set the scroll rate at a fraction of the maximum, in order to give a pleasing effect. The highest scroll rate is much faster.

Palette Control

At any moment during a movie you can define an event that changes the palette. If 32 colors isn't enough for your production, then you can set up a base palette and have some "variable" colors for the rest of the production. With a little bit of work, you can even fade the palette in or out, although there are no tools provided for doing this automatically. Also, you can create some primitive animation by using simple color cycling, which MovieSetter supports fully.



Loading backgrounds via requestor. You can load multiple IFFs to create scrolling backgrounds.

The only weak point in MovieSetter's arsenal of tools has to be sound support. That is not to say that the tools provided are not good - they just are not enough. The sound system relies on IFF sampled sounds, so you can get your sound effects from a number of sources, including digitizing them on your own. The general MovieClip disk included with the package contains many sound effects for a variety of purposes. Kudos also go to Gold Disk for fully supporting stereo sound. You even pan sounds from one channel to another. This would be great for something like footsteps crossing from the left side of the screen to the right side. You can also control the volume of your sample - even change the pitch using gadgets that look like piano keys.

Now the bad news. There is no way to incorporate any type of music into a MovieSetter production, short of finding another sound player that will multitask with it on playback. Synchronizing things in this manner would be difficult, however. I was also very disappointed that MovieSetter would not allow a sample to loop.

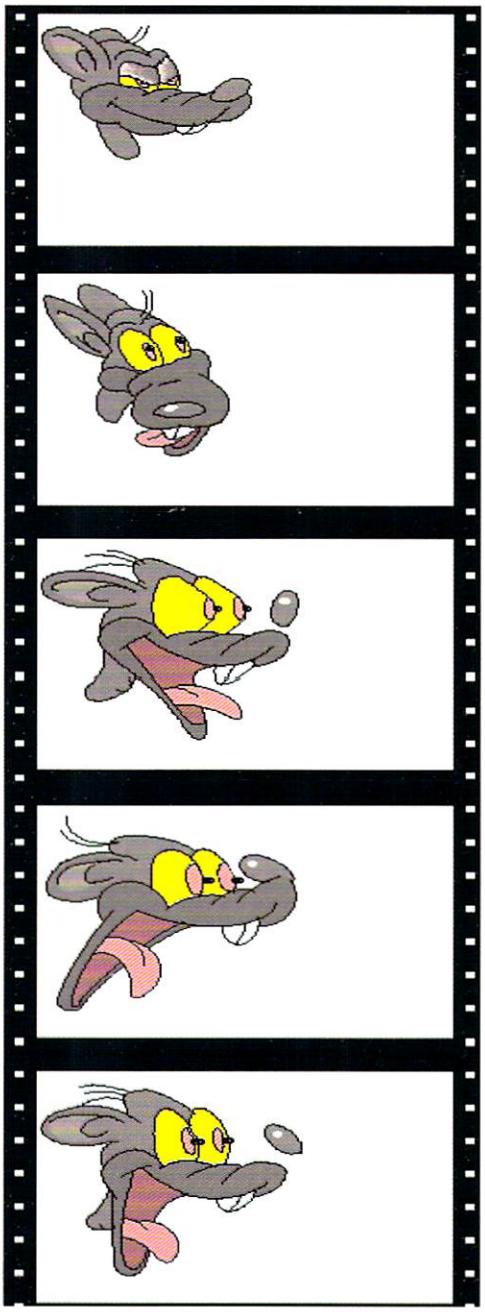
The Set Editor

The Set Editor in MovieSetter is the link between smaller animated objects and the Big Picture. A "set," in MovieSetter terms, is a small sequence of animation. A car with the wheels turning, a frog jumping, or a bird flying would be considered a set. Defining a set is accomplished by designing each frame of the animated object. Copying a previous frame over to the next frame is as easy as clicking on a gadget. At any time, you can preview your work using VCR-like controls to page through the set in progress. When you are finished, you can save the set out separately for use in other animations.

The Set Editor has a few graphic tools included, like a poor man's DeluxePaint, which are mainly intended to make minor modifications on set elements while placing the sequence together. These can also be used to produce some nice effects. For example, in an early version of the AX animation, I had the AX logo dissolve from the screen to reveal the stars behind it. This was a *very* easy effect to produce using the Set Editor tools. I started with the full logo and "sprayed" it with the airbrush tool a little bit at a time until the entire logo was gone. This was a great effect, produced in about five minutes.

While these tools are good for working on small visual effects, some people might find them lacking. Fortunately, the Set Editor easily imports IFF screens. The shooting star that appears in the AX animation was designed in DeluxePaint II, with every frame on the same screen. When I was finished, I loaded the screen into MovieSetter and cropped each successive image one by one.

The Set Editor is really the heart of MovieSetter. By breaking the animation into smaller parts in this manner, you can concentrate on creating only the part of the movie that you are interested in without interfering with any work that might already be done.



Creating smaller animations with the set animator. These smaller animations can then be integrated into a longer movie.

Whole palettes can be saved and loaded from Moviesetter. Moviesetter also supports color cycling, and varying colors throughout the movies/.

Bringing It All Together

Once you have designed a few sets, placing them into a production is simplicity itself. You place the set where you want it on the screen using the mouse. After clicking the mouse button, the set that you are using will automatically advance to the next frame. If you want things more regular and precise than just clicking your mouse, then you can define a path, or "Guide" for your set to follow. This can be a straight line or a curve, and varying the speed and number of frames of the motion is as easy as changing a slider and clicking a gadget. This method is extremely easy to use and the results are quite good. The diagonal path that the AX logo takes while moving up the screen would have been extremely difficult to produce in a smooth, straight manner, but using the Guides feature, it only took about 30 seconds.

Some of the elementary tools for editing the sets. These tools are primarily only good for minor changes. You can also preview your mini-animations with the VCR-like con-

The Storyboard

MovieSetter's Storyboard feature opens a window that displays a miniature frame showing where something important happened. Exactly what causes a frame to be displayed on the Storyboard is defined by the user. For example, to edit sounds somewhere in a movie, I could set the Storyboard to display only those frames in which a sound event occurred. Once I found the miniature frame in question, I would click on it with the left mousebutton, and the movie would automatically move to the frame where the sound event occurred.

The Exhibition

If you wish to distribute a MovieSetter production, you can save the entire thing with the pictures, sets, and sounds embedded in one big file. You may also save your work in pieces, which is a good thing to do when you are working on a production that might change a lot.

When your MovieSetter production is finished, you can view it using the provided MoviePlayer program. MoviePlayer is freely distributable, so you can create automatically running productions and distribute them if you wish. The MoviePlayer program also has options for playback in different screen depths than the animation was originally composed in.

The MovieSetter manual is done in the same style as ComicSetter's, with pictures of each and every tool located close to that tool's description. A tutorial is included that will take you from a blank "film" to a nice looking (albeit short) Movie in a matter of minutes. The "Hints & Tips" section is a very nice addition, and contains good suggestions for both using MovieSetter and the secrets behind traditional animation methods.

MovieSetter animations can take up lots of memory, especially when they get lengthy. Because of this, Gold Disk has included two versions of MovieSetter. The first is a fully integrated version in which all of the tools described above are all in one program. I ran this version on my 1.5-megabyte machine with no problems, and I usually only had a megabyte free when starting the program. Amiga 512-K users wanting to use the totally integrated program will have to use it in two colors. For 512K Users, Gold Disk has included separate SetEditor and SceneEditor programs that will work in machines with less than a megabyte.

The End

One of the main advantages that MovieSetter has over its competition is that it can produce *minutes* of animation as opposed to seconds, and play this animation in machines that don't have nine megabytes of memory. The user interface is superior. Many of the windows can remain open at the same time, providing a good multitasking environment in which you can move around in a production and modify things with ease.

MovieSetter makes excellent use of Intuition, and people who are already familiar with the Amiga user interface should be able to do what they have on their mind without lengthy manual consultation.

The AX animation for this special issue was produced in about six hours, and was my first attempt at producing anything with MovieSetter. Six hours may sound like quite a bit of time, but I assure you that I enjoyed every minute of it. Since I got my Amiga I have been eager to use some type of Amiga animation program, but having tasted Aegis Animator and Deluxe Video, I was severely disappointed at how difficult they were to use. After a few sessions with MovieSetter, the user interface became transparent, allowing me to concentrate more on what I wanted to do rather than how to accomplish it.

Results? MovieSetter's animation is very smooth, and even with such radical goings-on as a scrolling background, it never misses a beat or lets a flicker show. The bottom line? MovieSetter is a gem. Finally there is a program for Amigas that lets animators fully express themselves without getting mired down by complications. If you have to choose a single program of its kind, you won't go wrong with MovieSetter.

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Deluxe Paint III

The A.X. Animation (included) demonstrates several features including AniBrushes. The bird and car are AniBrushes.

by R. Shamms Mortier, PhD.

And Now for the truly Impossible... Amiga artists praised Electronic Arts and Dan Silva for DeluxePaint II's perspective features. That was an unheard-of attribute for a microcomputer graphics program. Since then, it has become harder to categorize a program as a "Paint" or "Animation" or "Modeling" package. Not to be left in yesterday's methodology, DeluxePaint III has followed suit. The program offers some of the nicest and friendliest animation capabilities that I've ever used. They are in fact so friendly that I saved four disks of animations the same day I received the program, and I don't need to reference the manual any more to start creating.

If you were to buy DeluxePaint III as an animation package alone, it's probably worth over three hundred dollars at today's prices. But for half that investment, you get an animation page-flipper extrordinaire and a great painting program, and both can be used on screen at one time! Like all other Amiga page-flippers, the more memory you have, the better. It's also useful (but not vital) to have a harddisk drive to store longer pieces on, although with the right video equipment, short sections can be seamlessly edited together.

To explain the idea and process of "page-flipping", the DeluxePaint III manual has a page-flipping animation of Dan Silva juggling the EA symbols while he rides a unicycle. The images are printed on the lower right corner of every page, so that "flipping" the pages produces an animated short and gives you an education at the same time. This animation can also be seen on the screen by loading one of the tutorials.

Don't think for a moment that the animation capabilities in DeluxePaint III are just added on fluff. They're state-of-the art techniques that produce professional results when seen via videotape, as long as you have the right recording equipment. The commands are easily remembered because they make graphic visual sense, rather then making you get a doctorate in structural engineering before you can proceed. Material can be saved either in a compressed (delta compression) or expanded (whole screen) format. Delta compression routines save only the changes in visual information from page to page, taking up less disk space (I saved sixty frames of a very complex Lo-Res piece to disk, taking about two-thirds of the space). "Expanded" mode would be OK if you wanted to dump the frames into other accessible programs.

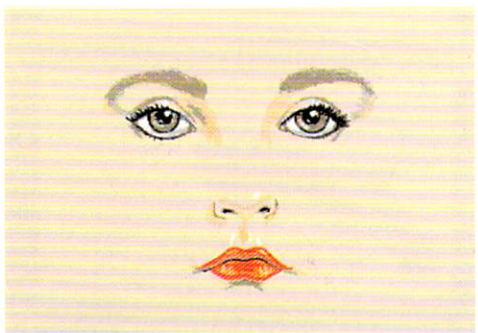
There are two sections in the manual that explain the animation tools thoroughly: "Animation Basics" and "Animation Effects". The first step is to bring up the "Set Frame Count" requester, and tell DeluxePaint how many frames long your animation will be. Along with this, you choose the playback speed, which defaults to 30 frames per second (fps). Speed can also be altered during playback by tapping either the Left Arrow (slows down) or the Right Arrow (speeds up). The whole point here is to use the Brush that is currently active and to set it in motion, or to paint different items on each frame. The frames advance by hitting the "2" key; they reverse by hitting the "1" key.

They can also be returned to the first frame (Shift-1) or advanced to the last frame (Shift-2). Frames can also be inserted or deleted from any sequence. You can create your animations in any resolution, remembering that Lo-Res allows the most frames, Med-Res and Video-Res about half as many, and Hi-Res about a quarter as many. Overscanned screens also eat up disk space. A "Move" requester is at your disposal, allowing you to turn a Brush on any axis, and to reduce or enlarge it in increments for the animation sequence. Another facet of DeluxePaint III animation is that color cycling can be added with the touch of the TAB key for even more awesome results.

The Move Requester has several fancy options, in addition to moving and rotating Brushes.

One of the classic half-brite animations.

Brushes can rotate on the screen's axis or on their own axis. Each Brush can be reset to an originating position with a "Go Back" command, and a neat little tutorial demonstrates this visually. "Cycle" allows you to command an animation to loop back upon itself, creating a continuous motion (you can also Ping-Pong the animation, forcing it to run forward then backward continuously, or choose to play it through just once or a determined number of times).



Another classic half-brite animation done with Deluxe Paint III.

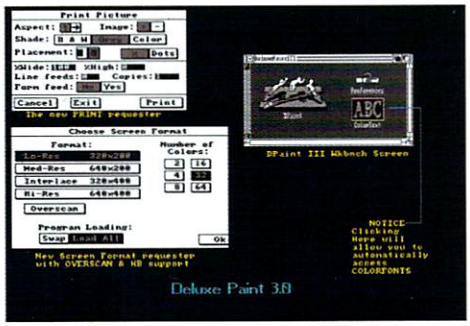
An "Ease-in/Ease-out" button causes the animation to slow or speed up at determined sections, allowing certain movements to be observed as more "natural". There is a "Record" three-option choice that specifies the directions in which DeluxePaint III paints the frames of the move: Forward, In-Place, or Backwards. Two of the selections here are ones that I am especially fond of: "Trails" and "Fill".

"Trails" causes a succession of trails to tag behind a movement, much like what an animator uses in standard tracing paper animation techniques. "Fill" is really "Fill Plane", and it generates a perspective plane that moves in accordance with the parameters set here. The result is an animation that seems like you're looking out of an aircraft window at a spinning perspective world far below. Combined with another brush, the effect can be almost dizzying. All moves can be previewed in wire frame before you paint them down.

One very useful feature is that as you develop

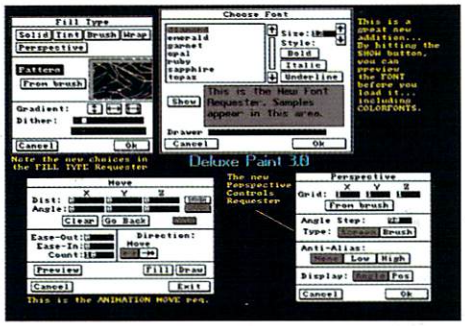
specific "actors" in your animated masterpieces, they can be saved individually as "AnimBrushes" for later use. That means that a character or animated element can be loaded and used against many separate backgrounds, and different AnimBrushes can be combined in an infinite series of stories. By holding down the Left Amiga key while you've got an AnimBrush in hand, you can automatically paint the Brush into each progressive frame.

The secret of not going crazy as an animator is to accomplish repetitive tasks with ease, and there's nothing easier or more fun then using this DeluxePaint III tool.



The top requestor shows the upgraded printing requestor, and the lower requestor illustrates the different screen formats available to choose from.

If you continue this past the ending frame number, the Brush repeats its movements across another part of the screen, so that you can fill the whole screen with animated movement using just one AnimBrush. To get even more intricate, you can bring up the "Anim Brush Settings" requester and change the speed and direction of any AnimBrush. The chapter on animation effects has some more advanced ways of manipulating the animations, along with some clear tutorials that make the learning process as easy as possible.



The lower left requestor show the animated brush controls. Above that are the new fonts requestor with a preview function, and also the fill type requestor. Bottom right is the perspective controls to move objects in 3 dimensions.

The manual ends with a "tips" section for animators, a reference section, Appendices, and an index.

Like all manuals from Electronic Arts, it is very clearly written and professionally produced. Addendum material exists on the supplemental disks (there are three disks in the package in all). On the Animation Disk there is a player utility that can play your animated movies. You can copy it to the same disk as your animations for distribution.

Minor Complaints

I would like to see some method of "Blue-lining" included in a future update. This shows an animator where a previous frame's elements were placed, so that smoother transitions can be designed. I would also like to pass a message to EA to put in some 68020/68881 support. The only real gripe I have is that F8 no longer removes the cursor from the screen. I liked this feature, but when you're flipping frames the cursor dissappears anyway. I guess EA thought this was sufficient. It took EA about three weeks to get my update to me, as they send it by regular mail (unless requested otherwise and remunerated accordingly). It was well worth the wait, and I can't even dream what Mr. Silva has in mind for Deluxe Paint IV... but I feel his gears grinding away.

INTERCHANGE

It never fails. The object you want is in exactly the file format you don't want it in. It's always a complicated object, too. A big one. Took a long time to draw, lots of triangles, and polygons, and other doodads that are hard to get positioned just right. So okay, nose to the grindstone, drag out the midnight oil and hop to it, right? Not necessarily. Amiga animation and raytracing programs, unlike the Amiga paint programs, have almost no agreement among each other on the formats they save their objects in. Objects you create in Turbo Silver will not work in Sculpt 4D.

There is, however, a ray of hope (excusing the hideous pun for the moment). Interchange, by Syndesis, is a product that swaps file formats around from one graphics product to another. That means, those raytracing objects from Turbo Silver can indeed be used in Sculpt 4D or vice versa. VideoScape 3D's red Lotus - or any other objects - can move over to Turbo Silver, or Sculpt.

Interchange is a program-plus-modules affair. You get Sculpt and Videoscape modules (along with some 2D ones, as well) with the product. If you need them, the company sells Turbo Silver and Forms in Flight modules as add-ons. The Turbo Silver module includes both 2.0 and 3.0 converters. The two Turbo Silver programs have slightly different file formats - 3.0 can read 2.0 objects, but not the other way around.

Syndesis also sells InterFont, a 3-D font maker program that operates as a module under Interchange. The 3D fonts in this animation special were created with InterFont, and many of the objects for the various programs were converted with Interchange. One of the newest Interchange modules is one for converting objects to Professional Draw format, for use either in that program or in Professional Page, also by Gold Disk, a desktop publishing package. That Professional Draw module made it possible to print 2D versions of the objects in the paper sections of this special issue, which was produced entirely on Amigas using Professional Page.

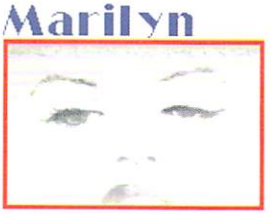
If you don't like the object creation tools your raytracer provides, you can use a dedicated one, instead. One such program is 3-Demon, from Mimetics. This product also has limited abilities for swapping objects from one object file format to another. Aegis sells a product for this purpose, too. It's Modeler-3D, and Gold Disk recently entered the market with Design 3D. Pick from the object editors - especially if you're not thrilled with the one your raytracer includes - and then move them around from one place to another with the object movers and converters.

There is one small caveat, however. Some file formats store more information about an object than others. So, if you port an object to a program which honors fewer "attributes," you'll end up with a simpler object. Aegis' Videoscape, for example, imposes limits on the number of points an object may have, and it likes congruent sides in its triangles, rather than overlapping, separate triangles. InterChange handles these limitations well, and devotes many pages of its documentation to explaining what works with what and what not.

For dealing with Videoscape's congruent triangles, for example, InterChange includes a "Point Reduce Tool" module, which figures out where the vertices are and makes them into triangle arrangements that Videoscape will like. Another new module generates "statistics" for objects, so you can tell from reading a friendly text file what attributes an object has, rather than resorting to the target program's menus and functions to figure them all out.

J:

FrameGrabbing



Amiga Framegrabbing From An Unstable Video Source

by Clyde Wallace

There is no frustration greater than buying an expensive toy and finding out that is doesn't perform. This was the case with the Framegrabber by Progressive Peripherals. Don't get me wrong, I'm not saying that the Framegrabber doesn't work; I'm just saying it doesn't work when you ask it to.

One of the biggest problems with the Framegrabber is that it requires a stable video signal to lock on to. Generally, signals from a decent video camera will do fine, but when you try to grab images from a video tape, or from a television signal, you can run into trouble. This all depends on the quality of the video tape, or amount of noise on your TV station. So for this experiment in torture, I chose a video tape, and a standard HQ VCR. To make matters worse, I used an old Marilyn Monroe movie. Whether I chose it for posterity's sake or subject matter, you can debate for yourself. Either way, the video signal was unstable.

The first step was to set up the Framegrabber. There was little effort involved. I passed the RGB signal from my Amiga through the Framegrabber to my 1084 (poor me) monitor. This passthrough cable will work with a 1080 monitor just as well with an adapter (included). I next plugged a parallel cable from the Amiga into the Framegrabber (This is how the image data is sent to the Amiga.) The video cable from "video out" of the VCR plugged into the front of the Framegrabber with a standard RCA type connector (the kind you use for your stereo, only thicker, for video). Then came the hard part. I plugged the power supply into the Framegrabber. It worked. Usually the power supply burns out, so I consider myself lucky.

Once the FG (framegrabbing) program started, with the flick of the TAB key, I could see the video source. While the tape was playing, I could see an excellent (not video quality, but still excellent) image of the video tape. In fact, the video image was live, so I could have watched the whole movie this way. I cannot begin to tell you how much of a benefit it is to have the video signal passing through to my Amiga monitor. This way, you can rewind, fastforward the tape to just the spot you want.

With a flick of the "C" (for capture) key, I grabbed the image that I was watching 1/30th of a second ago. The image looked washed out, so while watching the live video signal, I adjusted the intensity knob on the front of the Framegrabber until it was more defined. With another single-key flick, I tested the adjusted image. The result is what you saw, or will see on the animation (on disk). Since my design was to create an animation from this, I set the automatic-grab mode from the software, telling it to grab as fast as it can (about once every 3 seconds in lo-res) and asked it to please grab 30 frames and stop.

I also told the software to grab half-screen frames, in order to save memory. I thought of PAUSING (freeze-framing) the video tape frame after frame, but this caused too much noise to be worthwhile. Now if you have many hundreds of dollars to spend on a digital freezeframe VCR, this might be the option for you. I opted for a live capture. So the animation you see was captured live, as the

tape rolled. After rewinding the tape to where I wanted, I specified a filename and away it went. For the next several minutes, I sat back and watched it grab frame after frame. Every once in a while, I noticed that I only got half images, and the other half was somewhere else on the screen - you knew that unstable video signal would come into play somewhere along the line.

I let it finish. With these garbled images, I knew that this would not be a simple task of animating frame after frame. When it was done with 30 frames, I repeated this process in different places from the video tape to make a collection to edit from later.

After all the grabbing was done, editing was next. I could have saved each individual frames from the animations as separate IFF files to edit with any paint program, but Deluxe Paint III was nice enough to import the entire ANIM files and do this for me. So what I ended up with was a collection of frames split in half.

For each frame, I cut out the off-frame section, and pasted it where it belonged. This way, I recreated the whole frames from their parts. As I did this, to my horror, I noticed that the frames where not only off-center from left to right, but vertically as well. A real mess. By using the coordinates, I aligned the recreated frames in the center of the screen. This helped in lining up the frames to each other. To fine tune the frames to each other, I had to use my eye by finding similar objects in the frame (unmoving objects) and centering them on each other. For instance, I found a lamp in one scene. Marilyn moved around from frame to frame, but that lamp just sat where it was. So I aligned all the frames based on that lamp. If you didn't do this, Marilyn would be jumping up and down instead of making smooth transitions from frame to frame.

With all the frames recreated, and lined up, I went back and added some niceties such as the border, the titling and such. The whole process took me approximately two hours, with the majority of the time spent editing the frames. However, I consider this to be one of the worst cases for doing a framegrabbed animation. A similar step-frame animation from a video camera, or from a more expensive VCR would have gone easier, but alas few of us are endowed with such deep pockets.

The bottom line is, it worked! And with minimal equipment in only a short time. Not bad, either.•

NOTE: There is another animation included called PEPSI. This animation demonstrates step frmae animation from another video digitizer , Perfect Vision. It was done basically the same way. Refer to its READ.ME file.

More Information

If you would like more information about any of the products listed, or mentioned in this Special Issue, you are encouraged to contact these developers directly. They will be glad to send you more information.

DeluxePaint III
Electronic Arts
PO Box 7578
San Mateo, CA 94403-7578
(415) 571-7171
Suggested Retail Price: $150.00
($57.00 upgrade cost from earlier versions)

AniMagic
Animator
Videoscape
Modeler 3D
Aegis Development Inc
2115 Pico Blvd
Santa Monica, CA 90405
213-392-9972

Fantavision
Brøderbund
17 Paul Drive
San Rafael, CA 94903-2101
415-492-3500
1-800-527-6263

Photon Paint 2.0
Microllusions
17408 Chatsworth Street
Granada Hills, CA 91344

Interchange
Syndesis
20 West St
Wilmington, MA 01887
617-657-5585

The Director
The Right Answers Group
P O Box 3699
Torrance, CA 90570
213-325-1311

FrameGrabber
Progressive Peripherals & Software
464 Kalamath St
Denver, CO 80204
303-825-4144

Caligari
Octree
311 West 43rd St Auite 904
New York, NY 10036

Turbo Silver
Impulse
6870 Shingle CreekMinneapolis, MN 55430
612-566-0221

BytebyByte
Arboretum Plaza II
9442 Capitol of Texas Hwy N Suite 150
Austin, TX 78759

Elan Performer
Elan Design
P.O. Box 31725
San Francisco, CA 94131
415-621-8673

Marketing Your Animations

by Jay Gross

What's all the big deal about Amiga animation? Can you make any money with it? Does Disney have that many openings? The biggest consumer of animations is no longer the movie studios - when was the last time you saw a cartoon trailer at the movie theater? No, these days, animation is right at home on television, and not at all restricted to the Saturday morning kiddie cartoons where the Universe is miraculously saved in the nick of time, and the latest plastic toy is mercilessly promoted in between the brief animation sequences.

Animation? Look at the commercials! The promos! The program intros! Letters whirl through space, spin on their axis and upright themselves to spell out... almost everything that television tries to sell you, either programming or merchandise. The magic that gets those gyrating letters onto the TV screen is computer animation, and the Amiga is right at home in that heady company.

So, if you're interested in being an animator for money, television, television commercials, television producers, television stations, and cable television stations is where you start looking for a market for your work.

There are in the world already, a number of professional animation studios that use only Amigas for their productions. These include Winners Circle, whose Amiga-based animation "Time and Again" was included in the Siggraph video theatre last year - one of the highest honors a computer animation can be paid.

Anyway, this article isn't about Winners Circle. This is about selling your animation skills, and Winners Circle is but one example of folks doing just that very successfully. Their market? Television, of course. A commercial here, as animated corporate logo there. This is where the Amiga can do its work quickly, easily, and at a great cost savings over the competing studios who have to pay for equipment that costs many times what Amigas do.

So, when you get ready to go into business, think video. If you insist on not thinking video, you're what's known as a "classical" animator (and there are plenty of Amiga-based ones of those on the planet, too!), and you can think "large film studio." Disney Studios, for example, has announced that when they complete their current projects, ALL of their new animation work will be done with computers. They even have a bunch of Amigas!

Check with corporations, ad agencies, video production houses and such to see what the market is like in your area.

To sell animation, you have to have them in a form you can sell. Since the markets you want to sell to are broadcast television, mostly, you'll want to be able to combine your animations onto videotape. You don't have to actually own the vast quantities of electronic toys necessary to do that, but you do have to have access to it. Many cities, especially large cities, have production facilities that are rented by the hour (or day, or week, or half of forever). For example, you can rent studio time, editing time, etc, most of which will even come with the services of the respective experts for slapping the finishing touches onto your animations.

You can also market your skills an an Amiga animator to the growing number of animation places that use Amigas! For example, the really bigtime broadcast television sequences are still produced on wildly expensive "renderers" and "graphics workstations" and such. However, because that equipment is too expensive to just play around with, the big boys are using Amigas to prototype their stuff on, before doing the final version on the more expensive toys. They can afford a bunch of Amigas, which keeps the fancy stuff occupied doing only the final versions of the animations - a very efficient use of the equipment all around.

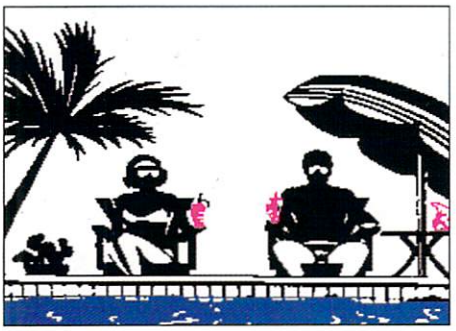
Then there are the computer consumers. That Amiga game you like so much? It's really a collection of animations, with a program to drive them all based on your mouse (joystick, or whatever) input. All those little animations are just that. Animations. So, grab ahold of your favorite games, take a careful look at the characters, scenes, and such, and start thinking "animate!"

The opportunity is out there, and the tools are at your hand - if you have an Amiga! - but you still have to go through the usual steps of acquiring the skills, developing a clientele, and producing the work (likely meeting horrendous deadlines, too) before you really start "making it" in the animation business - either with your Amiga or with anything else. Have at it, though, and at least with animation, you can have fun while you work.

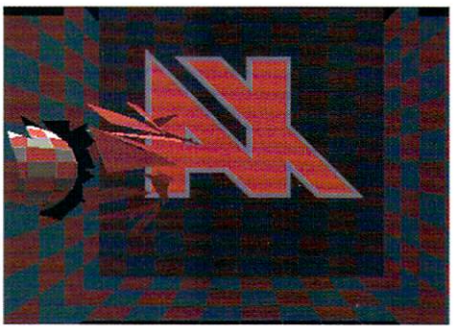
Want More?

Animations

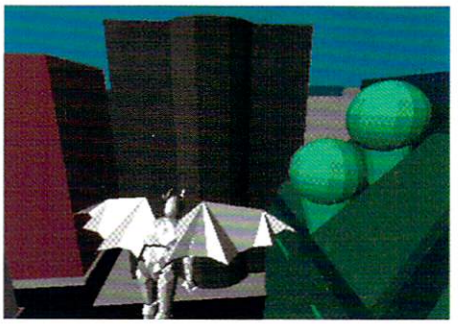
In the Animations Supplement Set (a two disk set) there is a collection of these and other animations that just wouldn't fit. They come complete with player programs to run them. The set is $9.95+P&H for the two disk set.



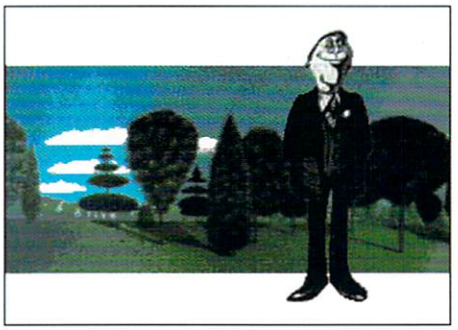
Tropical Breeze



Boing Crash



Time & Again



Summertime Summertime (1MEG Version)

Lighthouse Vigil

3D Fonts

In the 3D Fonts Supplement Set (a two disk set) there is a collection of 3D font objects for Turbo Silver2.0 & 3.0, Videoscape3D, Sculpt, and 2D versions for Aegis Draw 2000 and ProDraw..
The set is $9.95+P&H for the two disk set.

3D Fonts

In the previous issue...

Amiga News and New Stuff The latest scoop on what's out and what's still vapor. Article by Jay Gross

Letters To The Editor Keep those cards and letters rolling in. Here's a sampling.

PROGRAM: Requestor Text Changer - for CLI Tired of those same old "system requester" messages? Change 'em! Program by Carolyn Sheppner. Run this from CLI! It is in the MORE! directory.

PROGRAM: Directory Maker - for CLI This item makes AmigaDOS subdirectories with your choice of icons. Program by Ron Shaw. This program must be run from CLI.

PROGRAM: LS - for CLI LS lists directories, fast and neat. Residentable, for one-drive owners. LS v2.2, a CLI-only utility, is by Justin V. McCormick

PROGRAM: DiskSalv v1.32 - for CLI DiskSalv will usually recover disks from the Read/Write Error gremlin. Program - now works with FastFileSystem - by Dave Haynie - ON DISK # 3

A Command By Any Other Name Calling a spade a pawprint, or anything else. AmigaDOS 1.3 - ALIAS. Article by Jay Gross

The Gossip Fence A little bit of knowledge can be a dangerous thing. Total Fiction by Jay Gross

EDITORIAL: Arexx in Every Pot Arexx has the power and promise for interprocess communication. Editorial and article by Jay Gross

HINT: Booltime Blinking When the Amiga boots, it's really telling you something with that blinking.

Shelling Out T-Shell, hot on the heels of the new AmigaShell CLI environment. Review by Michael Hubbartt

What Makes A Great Game Great? Some games are fun, and some are like blank disks, only not as good. Article by John Thompson

Six-legged Amiga Robot Ready for a trip to Mars? A robot run by an Amiga might be. Article by Robert Deck

= Virus Watch = If only you could haul your computer's mouth open and dump in some aspirin.

PROGRAM: Virus-X version 3.2 This latest version zaps the irksome IRQ virus and eight other new ones. Program by Steve Tibbett - On Disk # 3 in the MORE! Directory.

PROGRAM: KV - for CLI This program looks for and removes the IRQ virus. USE FROM CLI ONLY. Program by Dan James. Available in MORE! of Disk # 3 (AX3:).

Virus Warning A proported newer version of VirusX3.3 is really a virus. Important Information

WORKING DEMO: MovieSetter ICON Load any MovieSetter animation and take it apart to see how it works. The demo does everything but save. NOTE: Demo requires 1-MEG or more.

SPREADSHEET: Template - Ohm's Law To use this, you need Analyze! or some other 123 compatible spreadsheet program. You can use this application as is, or adapt it to your own needs.

NEWS: Magellan Adds Arexx Emerald Intelligence adds Arexx port and announces other improvements. - = -

Bridging the Gap Getting the Amiga's Bridge Board to perform isn't all a bed of roses. Article by Sally Hubbard

NEWS: Amiga Accounting 102 Brown-Wagh adds to the vast array of Amiga accounting programs.

NEWS: Home Office Budgeting Gold Disk ships Desktop Budget for home entrepreneurs.

PICTURE: Budget WorkScreen This is Desktop Budget's 8-color "WorkBench" showing its icon interface.

NEWS: Graphics Wordprocessing Brown-Wagh's PenPal program mixes Amiga graphics and the PRINTER's text.

NEWS: Wordprocessing Update New update of excellence! fixes some problems.

NEWS: KindWords 2.0 The Disc Company ships KindWords wordprocessor version 2.0.

PROGRAM: Mail-Tel - Easy Database ICON Track names, addresses, or anything with this database program. Mail-Tel.BAS, program with source code and demos by George Trepal - On Disk # 3

Animation for the Very Young The Talking Animator makes animation literally "child's play." Article and review by Marty McClain

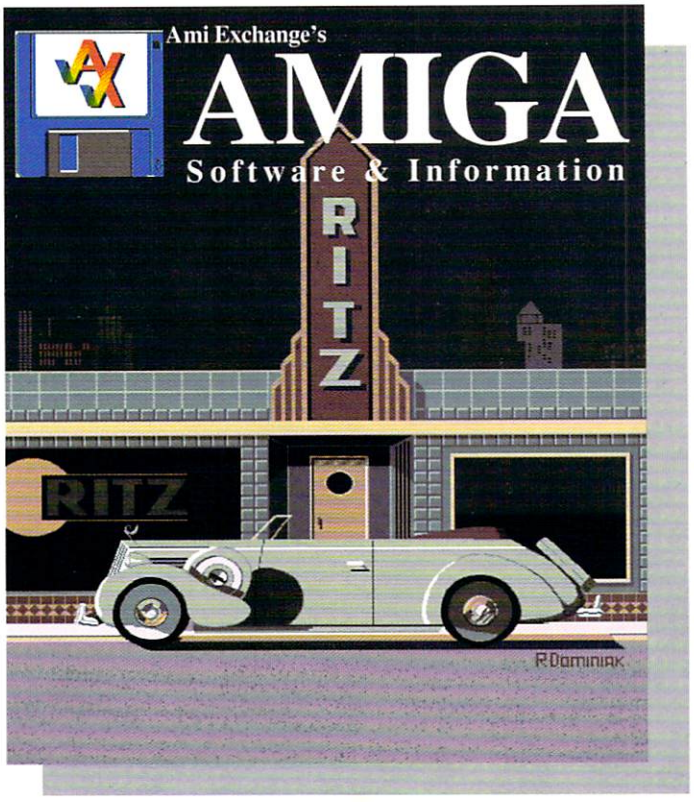
NEWS: CBM Appoints Education Council CBM's new push toward education markets starts with an Advisory Council.

NEWS: Video Training Seminar Banking on video as a door into education, CBM holds a class for educators.

New Compiler on the Block M2Sprint Modula-II takes on the pack, offers TDI owners a changeover path. Article and preview by Chris Bailey

NEWS: Hardware Development Tool Prototyping a hardware product for the Amiga 2000, made easy.

Draw Routines in Modula-II The adventure continues. Adding some neat features to the program. Article, program, and Modula-II source by Rich Bielak



SOURCE CODE: Modula-II Draw The source .MOD and .DEF files for the demonstration program Draw can be found on disk # 2 in the DRAW directory.

PROGRAM: Draw This is the compiled, working program so far. Program by Rich Bielak

NEWS: C-ompiler War Escalates Lattice has been getting the headlines, but Manx's turn is coming. Article by Michael Hubbartt

NEWS: Lattice Updates C 5.0 This is detailed technical information on the bugfixes in Lattice C 5.02.

Help! AmigaBASIC TOOLKIT Help is here for all you AmigaBASIC programmers out there. See disk # 3. AmigaBASIC Toolkit by George Trepal

PROGRAM: Mix Your Colors ICON AmigaBASIC TOOLKIT: Mix a color palette for use in your programs. Colors.BAS, program with source code by George Trepal. On Disk # 3.

DOCUMENTATION: Mixing BASIC Colors AmigaBASIC TOOLKIT: Color palette utility. The documentation. Article by George Trepal.

PROGRAM: Cycle Colors ICON AmigaBASIC TOOLKIT: Here's a program to make color cycling easy. CYCLE.BAS, program with source code by George Trepal. On Disk # 3.

PROGRAM: Disk Directory Utility ICON AmigaBASIC TOOLKIT: Mergeable code for getting and sorting a directory. DIRS.BAS, program with source code by George Trepal. On Disk # 3.

PROGRAM: BASIC Text Printing ICON AmigaBASIC TOOLKIT: Spare some drudgery in formatting PRINT statements. MakePrint.BAS program with source code by George Trepal. On Disk # 3.

PROGRAM: Requester Maker ICON AmigaBASIC TOOLKIT: Here's a simple way to get requesters in your programs. Requester.BAS, program with source code by George Trepal. On Disk # 3.

PROGRAM: Plotting the Chaos Function ICON Here's a new math oddity, Chaos, and a plotting program. Chaos.BAS, program with source code by George Trepal. On Disk # 3.

Music Sampler Library Here's how you can get disks of A.X.'s music columnist's creations. PD and shareware disk library by Sally Ann Hubbard

MIDI Timing and Counting Step timing isn't all that bad. Here are some things you need to know. Article by George Gilines

Is There A Doctor in the House? Dr. T's Keyboard Controlled Sequencer: a program in search of support. Article and review by George Gilines

Introduction to MIDI Music Everybody has to start somewhere. This is MIDI for beginners. Article by George Gilines

Coping with Deluxe Music Finishing up the series on the how-to of Deluxe Music Construction Set. Article by Sally Hubbard

Special Drumbeats Font If you want to score for drums, you need those funny drumbeats characters. Amiga Drumbeats font by Sally Hubbard

MUSIC: A.X. Theme Song The music you hear is the A.X. Theme Song. Original Sonix music composition by John Thompson

MUSIC: New Age Music from Down Under This is music of a "New Age" nature by A.X. reader Vincent Chu of Australia.

MUSIC: More New Age Music Original music by Vincent Chu of Tasmania, Australia.

The Missing Chart Here's the chart that was omitted from Sally Hubbard's article in A.X. 2.1 - = -

FIRST LOOK: Pro Draw Professional Draw: a new structured graphics art program from Gold Disk. Article by Jay Gross

REVIEW: MovieSetter An animation program that's not just easy, but FUN! Article by Chris Bailey

The Army Tank Color Printer "Built like a tank," only BETTER. Check out the Fujitsu color printers. Hardware review by Jay Gross

PICTURE: ScanLab Shows Off The owl's eye is a HAM output from ASDG's ScanLab line of color scanners.

ScanLab: High Class Scanning Add ScanLab to your Amiga and scan up to 300 dpi up to 16 million colors. Article by Jay Gross

About the Hack-CBS Animation A little background on WHY Leo Schwab takes his axe to CBS.

Animation: Hacker's Revenge ICON Leo Schwab expresses his ANIMosity at CBS TV's unkind remarks about hackers. Run this animation from its icone (V2) on disk # 3, in the MORE! directory.

CBS TV's Coverage Here is a transcript of the material that made Leo unhappy.

Printer of Many Colors Star's NX-1000 Rainbow, another way to get the Amiga's colors onto paper. Hardware review by Don Henry

Printing So Fine Save those used-up ribbons, if you want to use Fine Print. Review by Chris Bailey

PICTURE: FinePrint's Work Screen Here's what the work screen for the FinePrint program looks like.

NEWS: Enter Interfont Syndesis has shipped Interfont for making structured fonts and text objects Article by Jay Gross

And the Winner Is... This year's Badge Killer Demo Contest Winners list.

VIDEO: Color Shifts A simple explanation of the complicated Mired filter value system. Article by Jay Gross

Video That Doesn't Move There's probably coming a time when you can take "snapshots" in video, too. Article by Mark Power

NEWS: Video Application Software Visions shows off a video application of Microfiche Filer Plus.

TeleColumn News, views and a teensy bit of gossip from BBS-land. Column by Chris Bailey

HINT: Practical Modem vs BBS-PCI5 The Practical Peripherals PP2400SA modem needs help to work with BBS-PCI Article by Jay Gross

BBS Spotlight Taking a closer look at a couple of Amiga BBS's around the country. Column by Chris Bailey

Protocols Continued Everything you never even wanted to know about the Ymodem specification.

Fresh Fish. . . Listings of the latest Fred Fish Amiga Freely Distributable disk library. This listing is for FF Disk # 173 through FF Disk # 178.

Two Games Square Off Torch and Tracers 2081. Similarities, differences. Comparison and reviews. Article by John Thompson

Zooming Around It's the plot that makes it. Honest. Another view of Zoom! Review by John Thompson

FUN: Micro Double Microdeal's double trouble for (electronic) sports fans. Review of Zero Gravity and Amiga International Soccer by John E. Ramspott

FUN: Broderbund's SpaceRacer Screaming around corners, worrying about running out of fuel. What fun! Review by John E. Ramspott

Bored? What you need might be a little Enlightenment. Game review by Joe Wegrzynowski

Stand Back, Sports Fans TV Sports Football, another new Cinemaware title. Channel A (for Amiga). Article and review by John E. Ramspott

A Game of Vast Proportions Empire shows you only what you've explored, and there are OTHERS exploring! Review by Kevin Rohrer

DON'T PLAY THIS GAME! ICON You've been warned. WordHai: a word game you WON'T want to stop playing. Program by Michael Crick

About WordHai Some information about WordHai, its author, and C sourcecode availability.

Dungeon Master Hints That Cost Money If Dungeon Master gets TOO confusing, you can check out a pay hint disk. Article and review (of the hint disk) by Chris Bailey

PICTURE: Hint Disk Example An example screen from Tony Severa's Hint Disk for Dungeon Master

Grab Your Codewheel Dungeon Master, the long-awaited king of the regions of darkness. Review and game tips by Chris Bailey

Cheating Dragon's Lair Don't read this unless you're desperate. Or unless you want to cheat.

Talk About Fancy Animation! Sword of Sodan is like watching a Saturday cartoon on your Amiga. Game review by Tom Zelinski

Queen Takes Knight. Check? Chess isn't new, but you wouldn't know it from seeing Battle Chess. Article and review by Kevin Rohrer

PICTURE: Battle Chess InterPlay's Battle Chess has a setup menu that - well, see for yourself.

DEMO: DungeonQuest ICON A working demo to show off the look and feel and sound of DungeonQuest. Game demo by Image Tech.

About DungeonQuest Some information about the DungeonQuest Demo and the Image Tech game.

The Just-For-Fun Department Did you get ahold of the newest game fad yet? Scum Sucking Space Slugs. Pure hilarity by John Thompson

ONLY AMIGA MAKES IT POSSIBLE... BUT, A.X.MAGAZINE MAKES IT HAPPEN.

THE Magazine for the Amiga.