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Volume 1, Number 3

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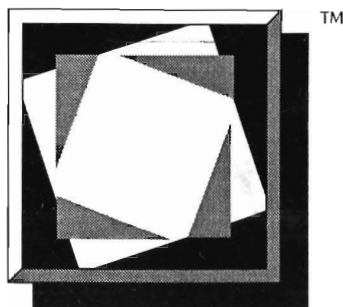
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Winter 1991



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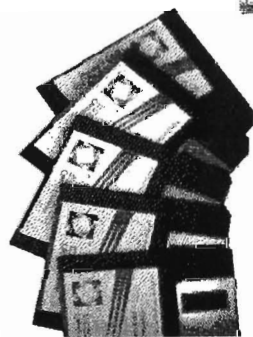
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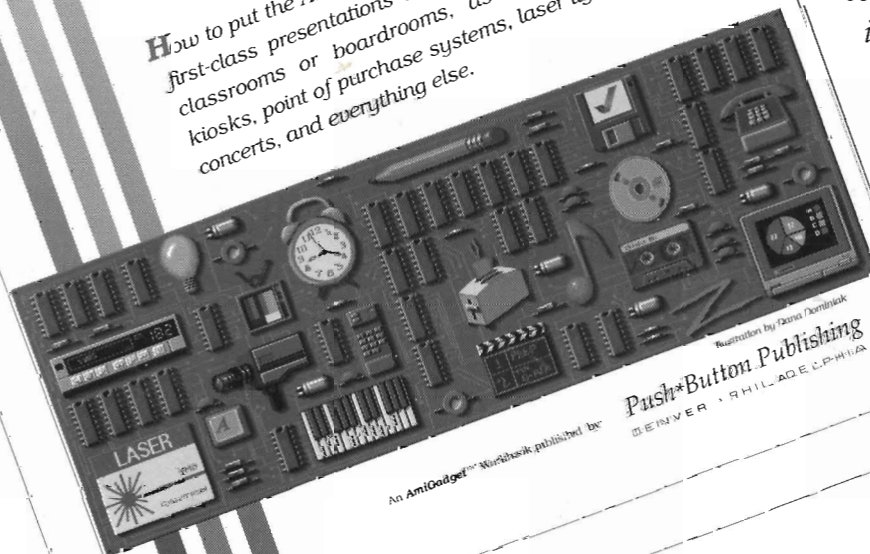
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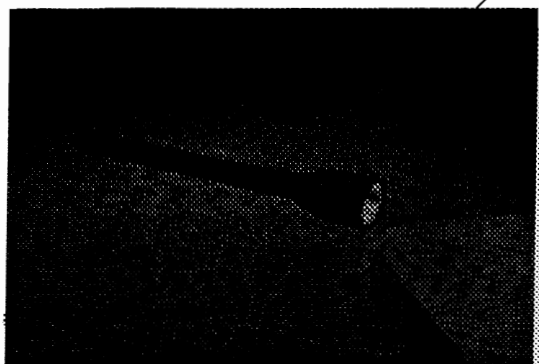
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New Stuff

by Jay Gross

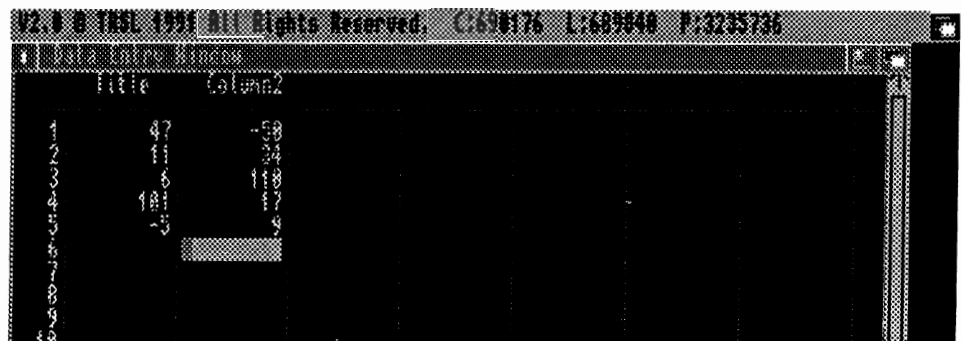
The annual emergency for getting stuff out in a hurry has dropped a passel of new stuff on the Amiga shelves, and some quite interesting items, in the batch. No time for tarry, here, so off to it, forthwith.

Charts & Graphs

There's a new version of Charts & Graphs, by TRSL, on the racks. This program applies magic faery dust to the task of making up business graphs and graphics with the Amigas. You know. . . the very stuff of which business presentations are made, and given, and forgotten ten minutes after the big, all-important executive committee meeting. The new version of Charts & Graphs is savvy to the new AmigaDOS 2.0 operating system, and takes advantage of some of the new features, if you run under 2.0. Running under AmigaDOS 1.3 doesn't give you the new features, but it does provide the new look.

In operation, Charts & Graphs opens up to a rather forbidding, spreadsheet-like screen that doesn't look much like you're about to embark on a graphing spree. The opening screen, however, is the one with which Charts & Graphs gathers in data to

make your graphs out of. There can be no graph if there are no data, after all. You either import data from files created in other programs - like spreadsheets on Amigas or some other computer, or you can just type in the mathematical data you wish graphed, using the Charts & Graphs refresh-every-line-fifty-seven-times data entry screen. The interface for doing this is largely similar to a spreadsheet,



Charts & Graphs: Data Entry Screen

and the program can add and subtract and simple things like that, but the data entry section lacks the elaborate math functions that you'd expect of a proper spreadsheet. No problem, of course, Charts & Graphs isn't a spreadsheet (but then, neither is much of anything else sold for the Amiga).

The point is that for really extensive data entry to create your graphs from, it'd be easier to make your spreadsheet program export the data already math-manipulated into a text format that you can import into Charts & Graphs.

By whichever method, though, once you've installed data into Charts & Graphs, the options for creating a graph are nearly endless. First, pick the type of graph you want. Pie chart (yum!), bar graph (hic!), whatever. If you change your mind about this as you work, you can swap styles anytime you want. Even so, you should get this important choice figured out early on, because changing the type of graph in the later stages of the formatting process can mean redoing much of your work. Charts & Graphs uses the Amiga's pulldown menus for almost all of its operations, even installing graphic representations of its choices in the menu structure - which is a neat trick.

Pie, strüsel. . .

In addition to the types of graphs already mentioned, the program supports a host of combination ones, as well as specialized ones that truly separate plain ol' pies from the really gourmet ones. In addition, the

or spinning in a helicopter over the terrain. By animating the camera's focal length, you could create strange zoom effects (almost enough to cause motion sickness).

- Cloud position, altitude, and density can be animated. Do you have a desire to animate an approaching storm? How about animating those Steven Spielberg skies that portend the approach of magic? Animating clouds can also be a way of achieving a longer animation without paying the price of not enough memory. Sky areas usually do not cover the major part of a picture, and cloud color remains fairly steady, so pixel changes from frame to frame are kept at a minimum.

- You can animate the snow, rock, and vegetation level. How would you like to see a scene that seems to shift from one season to the other in front of your eyes? Do it with Scenery Animator. The level of the "ocean" can be altered as well. Scenery Animator also allows you to change the VE (Vertical Exaggeration) factor over time, making an animation that shows the targeted terrain rising and shrinking. I'd like to see this software add the capacity to show water flow and turbulence, which seems a natural next step. The program does not allow palettes to change over time.

Creating and editing the animation

The main screen contains an Insert button for adding a Keyframe, and copies the current settings into it. If you are just beginning the animation, this also creates the first frame. A Delete button removes the current Keyframe, and Save copies the Keyframe to a buffer. Backward and Forward move you to other Keyframes already generated in the list, and Clear does what it says to all of the keyframes.

Scenery Animator includes Gary Bonham's "ShowANIM" utility, and a

preview of the animation in a polygonal format is always available on the main screen.

Even though the mainstay of Scene Generator is to create scenery based upon actual Digital Elevation Map files, it also possesses a number of features that allow you to generate wild and wonderful, unique (to say the least) terrain.

The main tools to experiment with

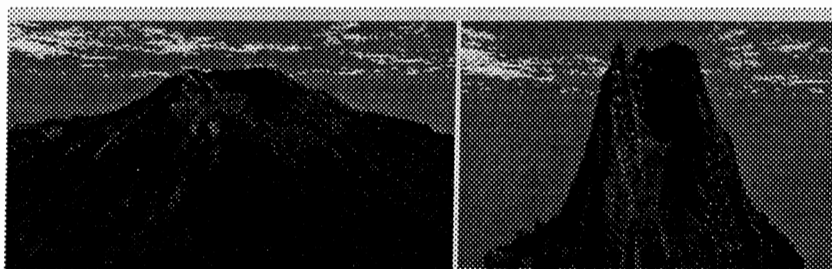


Figure 10A Figure 10B
Both of these pictures were created from the same "DEM" file in Scene Animator. Figure 10B had its Vertical Height exaggerated, using a setting of "5" [Maximum].

There are three basic ways that you can alter the "reality" content of Scene Animator to suit your own needs:

1. First, you can alter the palette of a scene. Even though the scene may

cause the perception of the scene to change radically. Yellowstone Park altered in such a way becomes the landscape of another planet, and this makes a wonderful backdrop for a Sci-Fi animation.

2. Another way to use just a little tweaking to create a new world also involves altering the original DEM file. This is accomplished by altering the VE (Vertical Exaggeration) input level. You can literally make a mountain out of a molehill by doing this. By pushing it to the max, you can create those craggy

escarpments that defy gravity on the Earth, but may be totally believable as the place where your animation's Great Wizard lives. Take a look at figures 10A and 10B. The difference between the two is that the first is a standard DEM file (Mount St. Helens), while the second is made from the same file, but has had the VE attribute altered. See the possibilities?

3. The third method is really the most fun, as it creates unexpected results. It can also be combined with the other two to further alter the final rendering. Look at figures 11 and 12. This scenery was generated by using

the Random generator. If you use this method, remember that you can also move around your world until you get the view that you want. You can also, obviously, animate that move and literally "climb" mountains

that exist only in the Amiga's "mind." Or yours.

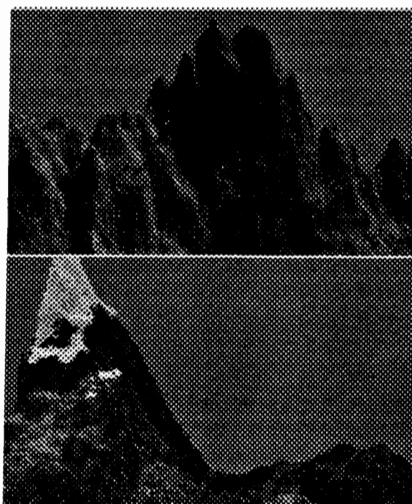


Figure 11.
Made with "Seed" No. 1234

Figure 12.
Made with "Seed" No. 5678

draw upon a standard DEM file to create the geography, making a sky red, snow green, and rocks blue, can

program permits attaching Amiga graphic screens as backdrops - backgrounds, that is - as well as brushes for the components of the graphs. Think of the possibilities. . . You could transform the bars in a bar chart of bank deposits into little

option from its main menu, so you can work in resolutions larger than the available screen space. This means you can work in super bitmaps that, when printed to dotmatrix printers (and especially to film recorders for making slides), result in a sharper,

start with larger screen fonts than you'd otherwise use. The size of the letters will shrink with the rest of the stuff; of course, this too will improve the looks of the finished work.

For printing, Charts & Graphs addresses any printer supported by the

Amiga's standard printer technology. The cool thing is that it also prints to Postscript and Color Postscript, either to the Amiga's ports or to a file, which you can then transmit to an output service bureau for conversion into slides or hard copy. Color Postscript printers and Postscript film recorders are as yet not terribly affordable, but there are many service bureaus that provide the capability for a few dollars a slide. Or a few bucks a print. In addition, there are some affordable ways of getting slides directly out of the Amiga, including the Polaroid Freeze-Frame, which works quickly, though not digitally, from an NTSC output signal (and a *quality* NTSC signal

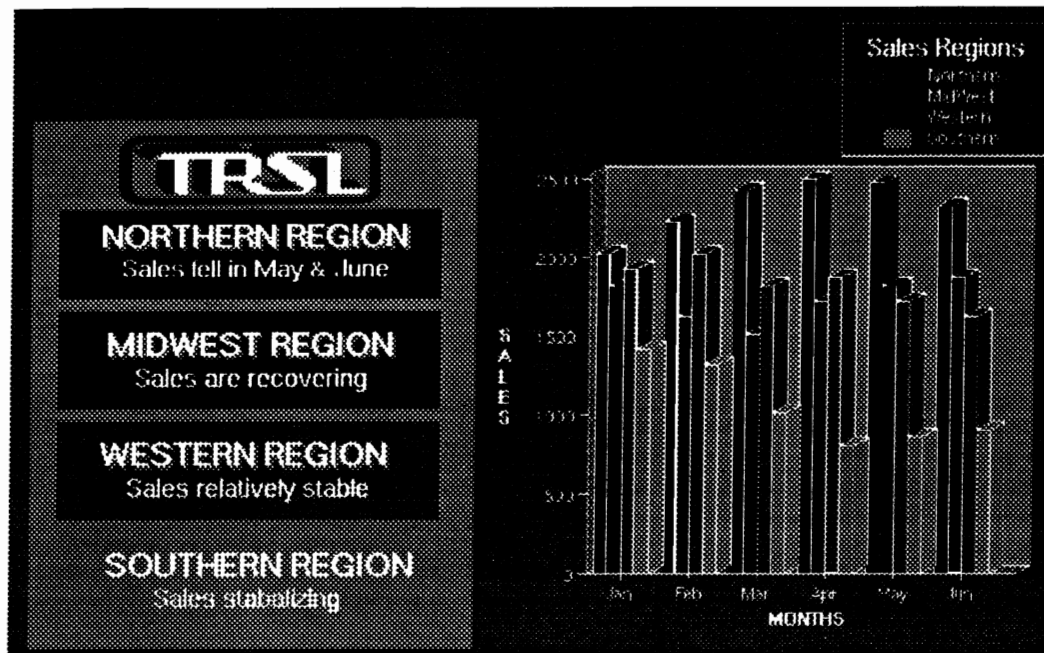
makes great slides). The Freeze-Frame does its thing in only a few seconds, it

should be noted. Digital slide production requires much longer to transmit the data from the computer. Digital slides are slightly better, but the Freeze-Frame will do a

whole roll of slides while the digital contraptions turn out one slide.

Electronic slide shows

Slides shown on the Amiga screen are more useful than film-based ones if you're giving your presentation in person, and these don't require any film processing, or any slide production equipment, digital or otherwise. For this purpose, Charts & Graphs permits

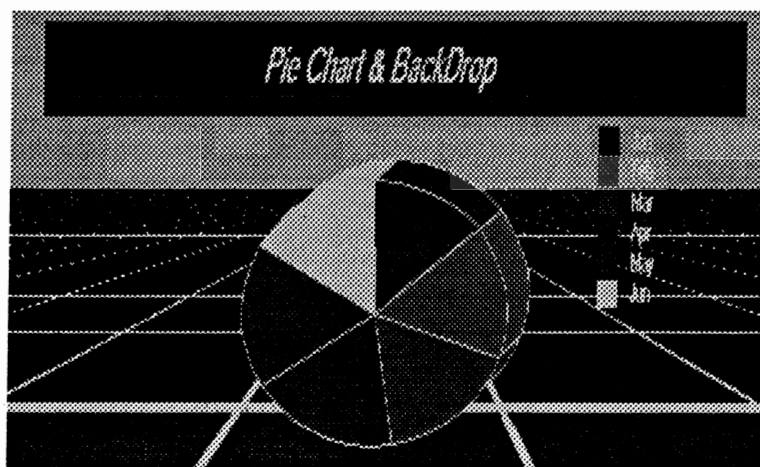


One of Charts & Graphs' many example graphs: BELOW: A Pie example

pictures of coins. You could make up cute pictures of pink slips, to illustrate unemployment figures. You could whip out pictures of rubber checks for a chart on Congressional stupidities. Of course, if you get too cute with this sort of thing, your graphic will look like an explosion in a dime store. Used wisely, however, this trick alone can dress up almost any boring data into presentability.

For any of the text in your chart, the program will use any of the standard Amiga fonts, and its working metaphor is somewhat object oriented, so you can position the elements of your graphs - legend, title, etc. - exactly where you want them, not where the algorithms put them, just by dragging them where you want them as objects, finetuning the look with mouse clicks. The resulting graphs are bitmapped, not object-oriented (meaning not structured drawings), however.

If you use Charts & Graphs under the new AmigaDOS 2.0 operating system, the program senses the fact, and enables an additional configuration



non-pixelized image. The Amiga's bitmapped fonts sharpen up considerably using this technique. For really important reproduction purposes, you might want to employ this technique, and then send the resulting graphics through one of the image processing programs, like Art Department Professional, for some uptown sweetening, compositing, and so forth. Note that if you plan to do this super bitmap trick, however, you must

these capabilities as well. Another way is to press the "Map" button. This brings up the screen shown in Figure 4. Here you can really get down to the nitty-gritty of exact observer positioning. Not only that, but by setting the lens of your camera at different values you can expand or narrow your area of view, as well as the pitch angle. By interactively clicking over the elevation map, you can move the viewing cone wherever you want it, and check the results back on the main screen's picture indicator.

All this, and animation too

The value of any worthwhile Amiga animation software is how "optional" it is. It must contain the capability to generate Keyframe animations (sequences that allow the user to generate a beginning and ending frame, letting the computer generate the "in-betweens"); yet, it must also be open to frame-by-frame tweaking, if the animator desires to intervene. Scenery Animator allows all of this, and adds methods and tools that enhance each.

As far as Keyframe animations are concerned, Scenery Animator allows you to create as many keyframes as you have memory for. The more memory in your system (and the latter your storage device) the better. By selecting a specific "frame count" to tag each keyframe, Scenery Animator knows how many separate frames to generate before the next keyframe is reached. A special case is a keyframe - not the first - that has a frame count of zero. In that case, the keyframe is considered as a "pass through point." This allows the camera setting to remain constant and a smooth, curved animation path to be invoked. The thing to remember in creating keyframes in this or any other Amiga animation program is that massive changes from one frame to the next makes storage of separate frames very memory intensive. Sometimes (when the whole screen or most of it changes in every frame), it is more memory and

storage economical to save the frames as separate screens, rather than as an Anim compressed files. This is because present compression routines are

based on evaluating the *difference* between each frame as the animation progresses, and that difference can be so great as to obviate the compression process. Scenery Animator allows you options in this area by allowing

saving an eight-megabyte animation will be frustrating if you only have a four-megabyte system; you won't be able to load it and play it back or record it. Best to plan ahead and save sequences in chunks that can later be stitched together in the editing process.

Marking a path

Another way to design an animation with this software is to mark out a path on the Map screen, and choose places along that path to be used as Keyframes. The computer then can draw a smooth curve that emulates your path, and creates a very smooth animation

accordingly. This is a method that would be welcome, if incorporated into all Amiga animation software, so Amiga animation developers might do themselves a favor by studying the feature and Scenery Animator's implementation.

Many elements of a picture can be animated, and each

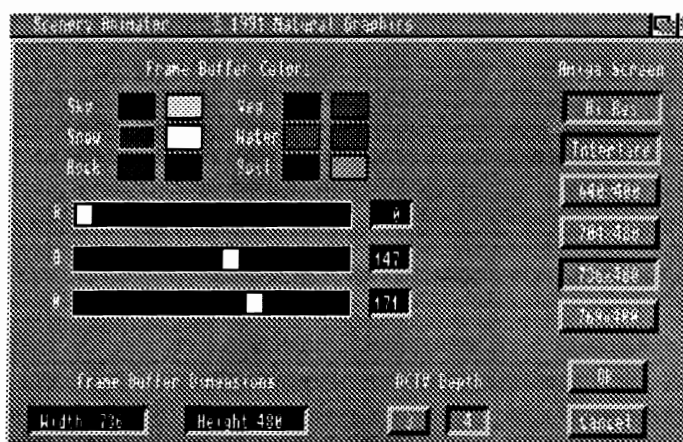
will produce interesting effects.

Consider the following:

- The camera position, direction, and lens focal length can be animated. This means that you can generate a full 360-degree view of your scene, as if you were standing at some central point and turning around, camera in hand,



Figure 2: BELOW: Figure 3



animations to be saved as IFF Anim-5 compressions, IFF single frames, IFF 24-bit frames (for which you'd really better have mass storage), DCTV Anim-5 frames, and DCTV single frames. This allows you to design animations best suited for your hardware configuration. Remember,

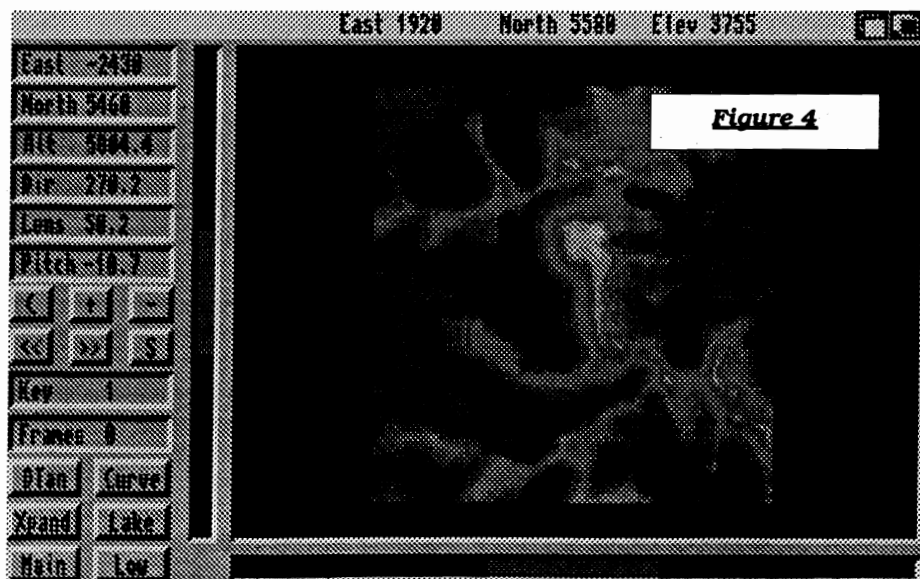


Figure 4

Getting started in video editing

by Michael Sox

There are many types of video editing. But first a little background. . . As you may be aware, "synchronizing pulses" tie television equipment together, assuring that all equipment operates at the same speed and at the exact same instant in time. In television facilities, "sync" pulses are fed to all cameras, monitors, video tape recorders (VTR's), time base correctors (TBC's), switchers, character generators, and test equipment. By using these pulses, the pieces of equipment operate *exactly* in sync with each other. Visual effects such as dissolves, wipes and digital type effects are possible because the signals, whether live or prerecorded, are exactly in time - enabled by use of these synchronizing signals. For playback, the VTR uses these pulses to control tape speed. This is how a multispeed VCR knows what speed to use when playing back a tape.

Broadcast and industrial machines which accept sync as an input, will attempt to align themselves, and therefore also the video they output, as much as possible with the incoming sync pulses. However, it is not possible for any playback machine alone to output video that is perfectly stable, because of mechanical limitations. All switchers (such as The Video Toaster) and other sophisticated equipment must have "corrected" video fed to them.

On videotapes, the sync pulses are recorded in their own section at the edge of the tape called the "control track." Depending on the format, there are one, two, or more longitudinal audio tracks at the opposite edge. The video is recorded in the center and occupies most of the width of the tape. In the U-matic or 3/4 inch professional format, Longitudinal Time Code (LTC) can be recorded in the control track on a properly equipped machine. There simply is not enough isolation between the longitudinal audio tracks in the U-matic and VHS format to allow time code to be on one track and program

audio on the other. The time code will bleed into the program audio track and render it useless for anything other than as a work or scratch track. It is, however, quite possible to use the Hi-Fi audio tracks with VHS or S-VHS, and relegate time code to the longitudinal track(s). These Hi-Fi tracks are recorded by the rapidly spinning video head drum and, in VHS, the video is then recorded on top of the audio. The Hi-Fi audio is actually underneath the video!

Erasing

Most consumer VCR's have a stationary erase head which goes into action when the VCR is put in "Record." Physically, it is located in the tape path ahead of the video drum which means it takes a certain amount of time for the erased portion of the tape to get to the video heads. You've probably seen this as an unstable (possibly double) image until the erased portion of the tape reaches the head drum.

More sophisticated VCR's have "flying erase heads" on the video drum itself, to perform simultaneous erasure of previous material and recording of new material. Even more sophisticated machines perform a "back space edit." When the machine goes into record/pause, it actually moves the tape backward a small increment (usually about one second), and then rolls forward to the original spot, when it goes into record. This allows it to do a technically clean edit at that point.

Control track is automatically created when you put your VCR into record. In a non-editing VCR, anytime it goes into record, it lays down new control track. When you just place a machine into Record to edit, it's known as a "crash record" or "crash edit," because it's likely to have some of these distortions. When an editor controlling an edit-capable machine performs an "auto edit," it instructs the machine to search back a predetermined amount

of time (user adjustable, but usually five seconds), to roll forward in play, at that cue spot, to seamlessly drop into record. If it is also controlling a play or source machine, that machine also searches back and rolls forward to the edit point. In an A/B roll type system, all machines pre-roll back the preset distance, and the first (A) player and the record machine roll forward to the edit point. The "B" machine waits until instructed by the editor to roll. The editor then cues the switcher to perform whatever effect is programmed.

When editing without time code, it is necessary to "overlap" segments. While the edit recorder is searching back and playing forward, it can lose count (slip) by a few frames, possibly leaving a few frames of video that you don't want left. This means starting the new edit a few frames before the end of the preceding segment, to have a small margin for error. The problem here is that if you don't like that edit, it is then necessary to go back into the previous segment a few more frames in order to have some overlap for the next edit. You may be able to do this only a few times before you use all your overlap space. The amount of the overlap necessary is determined by the accuracy of your editing recorder.

This is called "Control Track" or "CTL" based editing. The VTR has a head in the tape path which counts the sync pulses in the control track to determine the movement of the tape, and it provides that information to the editor. The recorder can only send to the editor the information that X number of sync pulses have gone past and cannot correct for any slippage.

With the luxury of time code and a properly functioning machine, it is not necessary to have any overlap. The recorder is able to edit at a certain spot, time and time again. This is because time code has a recognizable identification code associated with each frame of video. If the recorder is rolling up to an edit and should be at 1:25:43:12 and is actually at 1:25:43:14, the editor will abort the edit and try it again. It doesn't just count indistinguishable pulses; it is able to recognize one frame from another. This is, of course, called "time code" based editing. The editor will know exactly where the player and the recorder should be in order to perform the edit. Using professional equipment, there will be absolutely no way to tell there was an edit performed.

Animating the scenery

by R. Shamms Mortier, Ph.D.

When I first came across Brett Casebolt's first edition of "Scene generator" about two years ago, I suspected immediately that his product would find a niche among Amiga artists and animators. Scene Generator, to prepare you for what its progeny now does, creates landscapes based on computer algorithms that tap into the magic of fractal geometry. The latest release of it renders so finely, that it gives the impression of almost photographic visuals. Its pictures make excellent animation backdrops. Now, Brett's latest enterprise stands upon the shoulders of his original idea, taking it to the next logical step. Animation.

Enter magic

Although you can still purchase Scene Generator, I'd probably advise you to go right to Scenery Animator if you can. There is a small catch, however. You must (well, you *should*) have an accelerated Amiga (one with a 68020, 68030 or 68040 microprocessor chip replacing the vanilla 68000). The new program will work without acceleration, but the big job it's doing will go much faster *with* it. Scenery Animator does all that Scene Generator did, adding animation and support of DCTV's display format as well. DCTV is the black box from Digital Creations that allows you to see full NTSC color on your Amiga screen; it far surpasses the Amiga's standard display modes for quality computer graphics.

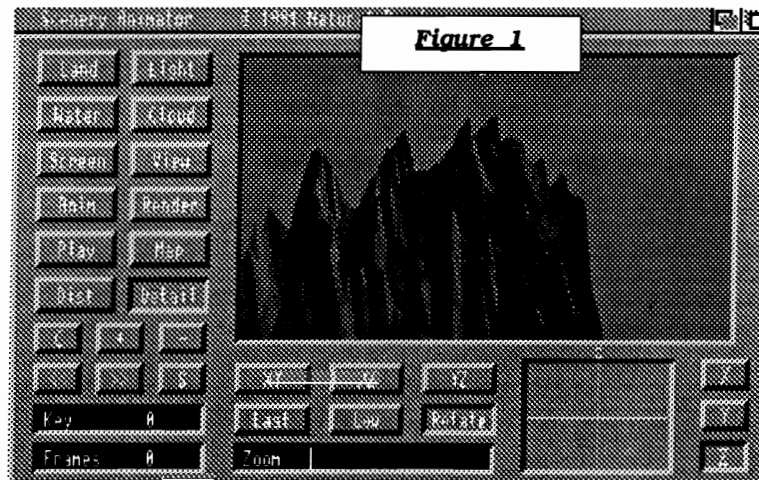
As shown in Figure 1, the main interface screen in this program has an AmigaDos 2.0-like look. Most of the buttons that are labeled bring up

requesters (see Figure 2) that allow you to define the elements of your landscape. Whether you want snow or ocean to be a part of your creation, and at what elevation these elements are to be added, is determined by the data that you manage in these requesters. By the way, the "V.E. (Vertical Elevation) Factor" at the bottom of the Land Requester in Figure 2 allows you to stretch or squash the elevation data, literally making mountains out of mole hills (and vice versa). Where the

(about four or five minutes with a 68030). The middle of the interface screen offers a rough render that allows you to see the basic scenes placement.

Color

If you're in a normal Amiga Hi-Resolution format, Scenery Animator may seem to ignore color changes you may have targeted for the sky, keeping it a basic blue. . . unless and until you discover that there are *two* color palettes to be accessed. When you use an enhanced display unit like DCTV, the renderings can utilize all of the palette changes you make in the first palette, and everything in your pictures can be colorized to give the impression of other-worldly places, or perhaps just of scenes painted at sunrise and sunset. Figure 3 shows the "Screen" requester, where



original Scene generator allowed you to enter a numeric seed to create fantasy geography, this software allows this and more. With this package, you can access a large number of U.S. Geological Survey Digital Elevation data files (sampled every 30 meters) as well. Some of the places that can be rendered include Grand Teton, Lake Tahoe, Mount St. Helens, Grand Canyon, Yosemite, Mount Whitney, and Crater Lake. More data disks are in development. In addition to the DCTV format mentioned, your pictures can be saved out as IFF-24 data, making them usable by the Toaster and other 24-bit units and boards. As with its predecessor, this software renders fast

various resolutions and colors are set for enhanced display units. Note that color ranges for various natural elements can be determined here when the output is a frame buffer. The second color palette, for non-framebuffer renderings, jumps up on the actual rendering screen when you click the right mousebutton (even before a rendering is finished), so you can see the changes in real time.

If you look closely at Figures 1 to 3, you will see XYZ coordinate buttons at the bottom of the screen. These and the Grid area alongside them give you one way of changing the orientation of the viewer to the scene. Also notice the Zoom and Rotate buttons that add

saving an IFF image of your graph. You can even combine more than one chart into one picture, without resorting to a paint program. The program comes with a thick manual, most of which is a collection of tutorials on building example graphs. The package also includes a library of useful clipart for graph making, including some stellar bitmapped backgrounds.

This really only scratches the surface of what Charts & Graphs offers in the way of graph and chart production. Easier to talk about what it doesn't offer - and that's mathematical manipulation on the data itself after it's been

imported into the program. And Gantt's. No Gantt's.

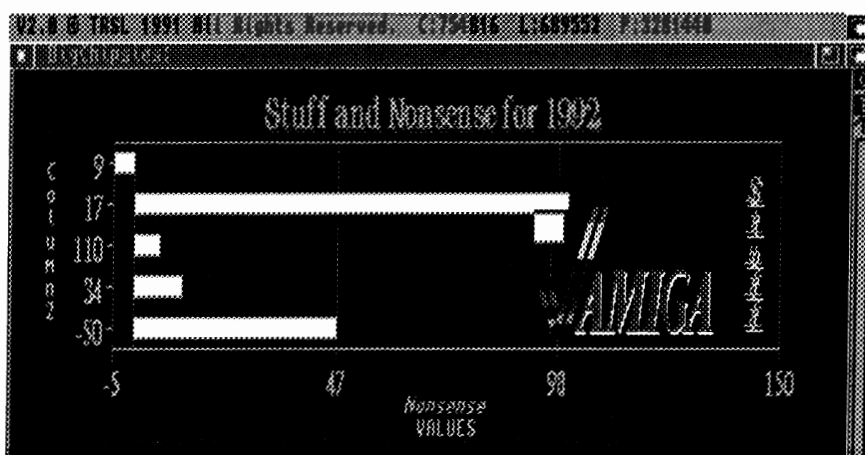
If you need a chart to describe a trend, or a statistical function based on your data, you'll have to create specialized data in a

spreadsheet (or whatever) that will reflect exactly what you want when graphed. Some business graphics programs on non-Amigas offer the ability to graph statistical (and other) functions of the data that has been input. The capability would therefore be welcome on the Amiga, too. Of course, Charts & Graphs sells for \$99 list price, and you don't even get to hold the non-Amiga ones in your hand for that piddly sum.

Competitors

There aren't many competing products on the Amiga side to compare Charts & Graphs with. One that's worth mentioning is Gold Disk's Office Graph, which is more of a scaled down (way down) spreadsheet with graphing stuff patched on. Graph, however, does its thing in structured graphics, and has the ability to output Professional Draw clips, which can be resized at will in page layout programs, without fear of an attack of the dreaded jaggies.

Dedicated graphing products aren't the only way to get graphs, however. You can get a decent-looking graph out of most any of the spreadsheet packages; these will likely be bitmapped graphs (except the ones generated by the Gold Disk spreadsheets), and might require some deft touching up in a paint program. Speaking of which, though, you can make great graphs in a paint program, if you don't mind interpolating the numbers yourself. For the simplest of bar charts, you can tick off the screen in a paint program faster than you can load up a dedicated program.



Charts & Graphs: Graph making in progress.

More bars

There are people who'd argue that the season for bars is just passed, and maybe it is. For sure, it's still the season for bar codes if you're into



sending out large quantities of mail. Have a gander at the contents of your mailbox most any time, and you'll see the Post Office's peculiar markings. That's a trail of lines that goes horizontally across the envelopes, just under the address or address label. That's the seemingly high-tech way the Postal Service (Actual service? Maybe fifty years ago. . . but that's another story) handles mail these days. It's a bar code. The long lines are 1's, and the short ones are 0's. The code is limited to numbers, since its only

purpose is to emblazon the Zipcode onto the envelope in a machine-readable form. (Humanoids are passé at the Post Office; they don't make enough mistakes.) The bar codes get onto the mail in one way or another. One way is that equipment at the Post Office puts them there. This benefits the sorting operations throughout the travels the piece of mail might make. Some Post Offices have equipment that machine-reads the printed Zipcodes, and puts on the barcoding to match. Then it pushes it into the shredder.

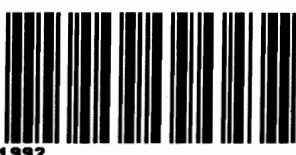
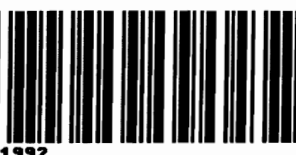
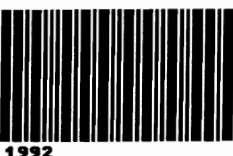
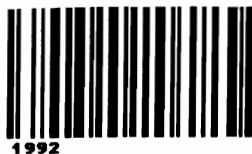
If you're getting mail that has been misdirected, and you put it back through, it'll zing its way right back to you, ever the worse for the wear, because for the most part, humans don't deal with it. Obliterate the barcode at the bottom of the envelope; an actual trained human will have to take a look at it, and it'll have a chance of getting to where it's addressed within a month or two.

Another way bar codes get onto pieces of mail is that people who do the mailing put them there. Wait, don't get out your ruler and start drawing bars on your letters to Old Aunt Mathilde. You'd need some reason to go to all the trouble of barcoding your mail. The reason is: money. The Post Office will deduct up to two cents an item for mailers whose mailing pieces are already barcoded.

Two cents isn't much for one letter or ten, but at a few thousand letters it's considerable, and at tens of thousands, it's a fortune. So, when Old Aunt Mathilde gets her daily dose of junk mail, she's likely to get a handful of postal barcodes.

The Amiga connection

What, you're asking, does any of this have to do with Amigas? Plenty. S'pose you're sending out a few thousand pieces of mail a month - and



Code 128a

Code 128b

Code 128c

Code 25

Code 25 INTLV

Code 39

Code 39 Ascii

Code 93

Code 93 Ascii

Reodabar

If you're running most any kind of business, you're quite likely to be doing exactly that. A business' client lists are its bread and butter, and a howdy-letter every month or two can do wonders for keeping the nasty old recession gremlin at bay. Then, there's the possibility that you're sending out a few thousand invoices a month, say in a physicians' office. Either way, you're paying the Post Office a premium for nothing (and *getting* it) if you're not barcoding your mail, and your Amigas can do this for you. The secret is a new version of MegageM's barcoding software, BarPro. The software comes in a variety of configurations, including one with a laser zapper wand that reads other types of barcodes into a cash terminal or other system. Those dudes depend on a totally different type of barcode. More about them in a bit.

BarProA doesn't look up any addresses, or store any mailing labels, or manage your mailing list for you. It just makes barcodes. You have to connect its barcodes to the software - you are using an Amiga for your mailing list management? - you use to keep track of your customers, clients, potential clients, relatives, whatever. The Post Office imposes strict rules on exactly where on the envelope the barcode is to appear. For one thing, it must be no more than four inches from the *righthand* edge of the mailing piece. Getting the code there means you'll have to be able to adjust the graphic output of your mailing list program to put it there on printouts. A new revision to the postal regulations will relax this requirement beginning in 1992, however. Then you can print the Zipcode barcode just below the address lines on the label and be done with it. This will make it much easier to do on Amigas or anything else. Meanwhile, to help you position the barcode to the Post Office's liking, MegageM's software permits adding leading spaces to the code string. This results in a barcode graphic that's shifted rightward by the number of spaces. Neat.

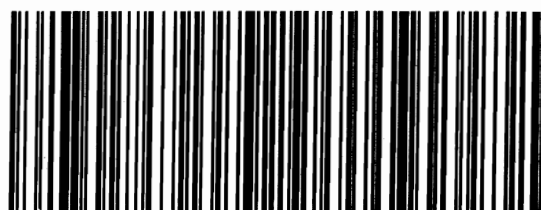
Postal Barcode



Remote control

Since BarProA has a full ARexx interface, you don't really have to deal with it directly, at all. Just train your output program to send the proper ARexx commands to generate the barcodes on the fly. No use even storing them and eating up harddisk drive space, if you do it this way. You could, however, store the barcodes as graphics in some database management software, notably Superbase - one of that program's many incarnations on the Amiga and

BarProA v2.0 ©1991 by Daniel Wolf



AmiGadget Magazine



Making a barcode: note height adjustment

elsewhere. These can then be printed where you want them - or rather, where the Post Office wants them - when you generate the mailing. Printing graphics can be a slow process, however, even though the barcodes are quite small. Another possibility is to store as a field in the database the actual printer codes that do the printing. Sending the contents of the field to the printer will give the same effect as storing a graphic, without making the program go into and out of graphics printing (The printer will still have to do that, though).

If all this sounds fanciful, it isn't. One of the company's test sites for the PostNet barcode software is mailing thousands of pieces of mail per month, and saving a bucketload of money doing it on the Amiga.

New Stuff
continues on page 24

The AREXX Tutor

By Jay Gross

AmigaDOS 2.0 comes with one wonderful addition, all the way down to the system level: ARExx. It's built into the system. Actually, it's not in the Rom chip, but on the disks, a good place for it. It's a full blown ARExx implementation, too, not scaled down, and not much if any different from the

startup-sequence automatically runs REXxMast on startup. It expects to find it in Sys:System, but you can edit the startup-sequence script to make it look wherever you want. Remember, programs that want ARExx ports won't look for REXxMast, but for the port itself. However, things that want to run

RExxMast might get confused as to where it isn't, if you've written AmigaDos or other macros that look for

versions of HI (the new file size is 304 bytes), RX (968 bytes), RXC (440), RXLIB (740), RXSET (640), TCC (364), TCO (364), TE (300), TS (300), and WaitForPort (208 bytes).

You'll also need to clean out libs:, getting rid of old versions of rexxsyslib.library and rexxsupport.library. New versions of these libraries are provided on the AmigaDOS 2.0 Workbench disk. Here's the listing:

rexxsyslib.library	33392 ----rw-d
rexxsupport.library	2524 ----rw-d

Mixing library versions will result in error reports. Your ARExx programs won't run. Newer versions of the program will run older ARExx scripts, of course, but older versions will have trouble dealing with newer libraries (though probably not scripts).

AmigaDOS 2.0 assigns the device REXX: to s: first thing. This isn't where you'd most likely want it, and if you did want it in s: you'd surely want to put in its own drawer to hold the large number of ARExx programs you're likely to accumulate, without cluttering up access to AmigaDOS scripts and configuration files that s: normally contains. You can put REXX: anywhere you want, probably with impunity, since REXX: is a logical device. It's probably not safe to eliminate the REXX: assignment, however, unless

AmigaDOS 2.0 and ARExx

current version being sold independent of the AmigaDOS package (in case you want the blessings of ARExx, but don't need the niceties of AmigaDos 2.0).

If you've installed ARExx into your 1.3 (or earlier) system, there are many similarities to what you already have, and a few enhancements. For one thing, the new version number is 1.15. You can obtain this version as an update, if you already have an older version of ARExx from Bill Hawes, but there's no need to update your old one if you install AmigaDOS 2.0, since it's the same product. The parts of the system are still the same, but included on the AmigaDOS system disk and referenced in the operating system. Moreover, the new AmigaDos 2.0

RExxMast in a different place.

Starting fresh

To keep things cozy, and to keep your grey hairs to a minimum, it's best to install AmigaDOS 2.0 into a clean, uncluttered disk space. You'll need to reformat your main harddrive, at the least, anyway, in order to take advantage of the new and improved FastFileSystem. However, if you do opt to install AmigaDOS 2.0 into your old system, you should be careful with the ARExx libraries and files. These won't be overwritten by the install script, and you might accidentally be mixing new and old versions of these things, if you're not careful. Get rid of all the old

advertising, thank you very much) on the back cover of this magazine. Your considerate editor will spare you the thirty-thousand-word sales pitch for the new volume.

Indeed, your erudite editor isn't the only *AmiGadget* author with new books on the market. Dr. Shamms Mortier, whose works appear in a variety of Amiga publications, has a new book out, too. This one was mentioned in an *AmiGadget* Issue 1, but production problems interfered with the expected publication date. The book, *Amiga Desktop Videography* has been shipped to dealers, finally. It's published by MichTron, Inc.

AmigaVision 1.7Z

Commodore is now supplying an improved version of AmigaVision. Version 1.7Z, which includes new functionality, as well as additional drivers for external devices. The new version of the program adds support for one additional brand of touchscreen, as well as a joystick device driver that can be configured to supply ARExx (or other) commands based on user pointing of the joystick (There are eight possible positions).

The new version of the program also permits chaining of AmigaVision applications from one to another. This means a large application can be organized into small chunks which are loaded, or re-loaded, as needed, for better conservation of memory and resources, and an easier time of working with the project in many cases, too. The program has always permitted having multiple "Flow" windows open at once, but hasn't had much reason to do it until this new version. AmigaVision owners can obtain the upgraded version of the program from Commodore for thirty dollars.

Quarterback 5.0

Central Coast Software, which is owned by New Horizons, has announced a major upgrade of Quarterback, a harddisk backup utility. The new version 5.0 of the

product supports data compression and streaming tape backup devices, as well as some new backup and restore options, and optional password protection and data encryption. The new version supports AmigaDOS 2.0 and contains a full ARExx interface (ahhhhhh). Other improvements include a faster backup to floppies, and the support of up to four floppydisk drives for backup purposes, in addition to the new tape drive option. If you're backing up large volumes, tape is a wondrous blessing, as you won't have to keep popping disks in and out of the drives, which means you can do other things, like take out the trash, without having to hover around the computer while a backup operation is going on.

The new version is to ship in the spring of 1992. List price \$75. Meanwhile, version 4.3 is the current one, and it works fine under AmigaDOS 2.0

CD-Rom has it all

New Horizons - they own Central Coast Software - has licensed The Station, an Amiga dealer in Austin, Texas, to make and sell a CD-Rom package that includes ProWrite 3.2, Flow 3.0, DesignWorks 1.0, and ProFonts I, all on one CD-Rom disc. The product is part of what The Station calls "Odyssey," and bill as the "CDTV Personal Workstation." Commodore is marketing (if you call that marketing) as *not* a computer, not a professional product, and even shunned its dealer base with the initial product promotions.

Nevertheless The Station has put together a turnkey system, complete with the not-a-computer CDTV, a monitor, a printer, an external floppydisk drive, a modem, a real mouse, and a real keyboard, as well as the CD-Rom disc containing a collection of public domain software and the New Horizons productivity titles. The company expects the package to appeal to the education market. List price is \$1995.00. For more information, call The Station, at 512-459-5440.

Sweepstakes is on

One more New Horizons news item, and then on to other things. The company's sponsoring a sweepstakes to get people to try out their productivity software. The deal is, you motor to an Amiga store and "test drive" the New Horizons software, and put your name in the hat for a drawing. The winner gets an Odyssey CDTV Personal Workstation.

Pro Fills updated

JEK Graphics, another new (and welcome) *AmiGadget* advertiser, is shipping a new version of their Pro Fills video (and other) background utility - version 2.0 - which contains Screen Generator, for making fast work of whipping together a customized video (or other) background. The program provides a pointy-clicky user interface (that's the best kind) for assembling Pro Fills screens quickly (under two seconds) from the brushes supplied on disk. The earlier version of the product has been available for some time, but the parts had to be assembled in a paint program.

The stuff in the package is high-resolution, interlaced (for video purposes), and is palette-compatible with Kara's (and others') Color Fonts and Anim Fonts wherever possible. The screen generator program eliminates the need for stamping the texture brushes onto a paint program's screen.

Bach to basics

Dr. T's Music Software has been working on Composer Quest for a long time. Which is fine, because composers have been working on being in it for hundreds of years. Why, take Johann Sebastian Bach. He worked himself to death becoming famous and prolific, and musically excellent, just so he'd have a place in musical history. A place, indeed. T's has committed much of musical history to CD-Rom, but Bach barely squeaked in. The disc, "Composer Quest," starts at the year 1600 and stops, for some reason, at the

Twentieth Century. It's geared to teaching the history of music through an exploration of the composers' works, and cross-references events in world history, art, and sociological change throughout the timeline.

T's new multimedia application is acclaimed by Microsoft's Multimedia Division, but what do they know? It's available for Amigas, as well as non-Amigas, and it's on a CD-Rom disc, not floppies.

Color wax printing

ColorPage is a new full-color printer from Prime Option. It runs at three hundred dots per inch, like laserprinters, but it's laserprinter technology. It's wax. The "ink" for the printer comes on a roll of plastic, onto which is alternating solid sheets of yellow, cyan, magenta, and black wax-based dyes. (The rolls are also available in three-color versions, minus the black, for faster and cheaper operation.) In use, the printer rolls a hot printhead over the dye sheet, transferring the color to the paper. It then backs the paper up in register, and prints the next color. When all colors are printed - in register - the print is done, and you can send it out for framing. Color printing technology of any type depends on this color separation process. Dotmatrix printers do the same thing, but line by line, instead of a whole page worth at once. The catch is that doing it a page at a time requires storing a page worth of information with which to do the job. So, most printers of this type - Mitsubishi, CalComp, Seiko, etc. - contain enormous amounts of memory in which to store the three or four images.

Prime Option's approach was to get ASDG to produce a custom printer driver, which does the neat trick of storing the temporary page files to disk, and then running the printer. The printer, therefore, doesn't need (or have) the large memory it would otherwise require. Prime Option's list price on the printer is \$3995. Framing services not supplied.

Portable? Amiga?

Newer Technology of Wichita (That's *not* a misprint.) has announced they are developing, and are preparing to market a line of portable Amiga-compatible computers. The Model 10, containing a Motorola 68000 microprocessor running at 7.16MHz clock speed - like normal, vanilla Amigas - comes with the either AmigaDOS 1.3 or 2.0, genuine Commodore operating system and support ROMs. Its standard display is monochrome LCD, with a color LCD display to be available later on. The Model 10 was shown to awed crowds at Toronto's World of Commodore show at the beginning of December. No price yet. No shipments yet, either.

The Model 10 is two inches tall, a foot wide and a little over eight inches across when closed, and weighing in at three pounds, naked. Decked out with harddrives and other options, it gets heftier. It comes with two megabytes of memory, expandable to a total of eight megabytes. Available expansions from Newer Technology are to include internal and external harddisks, memory upgrades, battery charger, and other interesting doodads.

OXXI takes over Amiga Superbases

First, Software Publishing bought Precision, and Software Publishing is involved in a big way in products for non-Amigas. Now, the news is that Oxxi has bought out the Amiga ones of Precision's products. These include the Superbase packages, notoriously the new SuperBase 4, the high-end, professional one of the batch that looks like it was born too close to a Microsoft window.

The company - Software Publishing, that is - says development of the Amiga products will continue, parallel to development for the Windows versions. It's significant in this that Oxxi has not bought the "rights to market" the products, but has acquired the non-Windows products of the former Precision

Software, Ltd., the company which wrote the Superbase products.

All support, technical, dealer, and otherwise, for the Amiga products has moved (*again*) to Oxxi. You'll have to register your Superbase products with Oxxi to get upgrades and technical support, a strong contribution to the network compatibility. The telephone number is 310-427-1227.

Classical fonts

Amigadget magazine also welcomes Classic Concepts to its Honor Roll of Advertisers. Nothing like actual customers to keep a magazine business in black ink. The company has new products, too, but the information didn't make it in before the deadline, so you're invited to conduct a search for their advertisement, look in the lower righthand corner, and think "new."

He sells W shells

Bill Hawes' company (He wrote ARexx for the Amiga.), Wishful Thinking, has shipped a new, enhanced version of WShell, a replacement for the Amiga's Shell that provides extended features and facilities. One of these is command line completion. If you're doing the same command repeatedly, you can just type some of it in, and Wshell will figure out the rest from the history it maintains. The Amiga Shell has a history, too, but you can only scroll forward or backward in it; it doesn't accept partial prompts. Shell commands, as opposed to Workbench mouseclicks, are still quite popular, and even preferred, among programmers, the folks who make the real magic happen on computers. No one knows why they're such masochists, but as long as they keep turning out nice, friendly, *mouseclickable* software for the users, who cares. The new WShell Version 2.0 works fine with AmigaDos 2.0, too. Contact Wishful Thinking for information on upgrades from the older program.

J:

you intend to disable something on down the line.

Automatic execution

One nicety of the new AmigaDOS 2.0 shell is that it will execute ARexx commands directly, without asking any questions. All you have to do is set the protection bits to "script," and call the program by name. Oh, and give it any arguments it might need, of course. The operating system will figure out that it's an ARexx program, and farm its execution out to REXxMast, without troubling you to type the usual RX command in front of the program name. Programs or scripts which call the RX command will still work, however. Programs (such as Cygnus Ed macros) which require the Run program being in C: will not work, because the new system has Run in Rom, and not on disk in C:.

Of course, for it to work, the RX command has to exist in the right place - somewhere in the available paths, but the default is now SYS:rexxc. If you're getting the message that REXxMast isn't found, then your path to it is wrong, or it's the wrong version. If REXxMast executes, but the script doesn't, then the script bit isn't set. Use the "Protect" command from a command window, or the "Information" function from the Workbench to fix it. Or, the path to the programs isn't correct. If you're storing ARexx programs in a separate directory, it's a good idea to assign the device REXX: to that path, so the programs can be called simply and easily, without typing the whole path. It's also best to let AmigaDOS 2.0 have its way on where it puts the elements of ARexx's functionality. If you tinker with it, somewhere, on down the line, some inconsiderate program will depend on hardcoding stuff to there, and something won't work that ought to. The AmigaDOS 2.0 manual says "ARexx programs are usually stored in rexx: . . . , but any directory can be used." A good place for them, eh?

A new Ed

The text editing program Ed, a staple of AmigaDOS since Day Number One, has had a facelift, and has had ARexx installed into it under

AmigaDOS 2.0 (and it's still only a few more than 25,000 bytes). So, you can use plain old Ed to both write your ARexx programs, and test ARexx out with, under AmigaDOS 2.0. The manual provides an example program for doing a transpose-character operation, using an ARexx macro under good old Ed.

Omissions

The implementation of ARexx is complete, compared to the commercial versions of ARexx available for the Amiga independent of AmigaDOS 2.0. The Amiga system implementation includes, but doesn't fully support, the Push and Queue commands, both of which have to do with preparing streams of data to be operated on by a

shell of some kind (like WShell, in fact). There are also many departures in the ARexx implementation of the procedural language REXx that depend on the specifics of the Amiga hardware,

or improve the working environment. One of these is the synonym for the confusing REXx command "Say," which is easily mixed up with the Amiga command of the same name. The Amiga command causes the new, spruced-up

Narrator to go into action. The REXx command is a silly substitute for the more precise term, Echo, which ARexx incorporates as an optional substitute.

J:



RIBBON RECYCLING

STOP THROWING MONEY AWAY!!!
Allow us to recycle your used
ribbons to a like new condition
for a fraction of the cost of a
new ribbon
Send Ribbons and \$2.50 per
ribbon to:
G.J. ENTERPRISES
P.O. BOX 659
ORLANDO, FL 32802
All orders shipped in 48 hours
Orders accompanied with a personal
check require 2 weeks to clear
before shipped



Here it is.

The inevitable sales pitch for subscribing to the magazine, buying the disk, and generally sending in money.

Subscriptions. That's where magazines are delivered to your doorstep by agents of the federal government - usually two weeks *after* you gave up and bought another one over the counter. Not to be outdone, but not to carry on the tradition blindly, either, **AmiGadget** offers subscriptions, too. But with a *difference*. **AmiGadget's** subscribers get first-class treatment. Your magazines come to you in an envelope (paper - recyclable) by First Class Mail.

The Post Office gives First Class Mail special treatment. For one thing, First Class Mail goes through only the *new* shredding machines, and only the highest paid employees get to trample the sacks. It's a premium service, you see.

Of course, this First Class service is going to cost, but **AmiGadget** generously allows you, the subscriber, to pay for it. Subscription copies of **AmiGadget**, delivered First Class, cost **\$4.50 per issue**, First Class postage included. You can reserve one first-class issue or as many as you wish (**AmiGadget** has one more issue scheduled in 1991, and six in 1992, so a seven-issue subscription would make a nice round number for a piddly \$31.50). While you're at it, checkbook in hand, charge card at the ready, etc., the magazine has lots of other things you can buy. Natch.

The Issue Disk.

For one thing, there's the **AmiGadget Issue Disk Number Two**. This contains any program code from the articles already typed in, plus the finished, runnable programs, too, if applicable. In some issues, larger compiler code is only excerpted in the paper pages, and the whole is relegated

to the **Issue Disk** where you can sink your programmer's teeth into it without having to type it all in. The disks also contain a selection of the pictures that illustrate the magazine, all in readily displayable, Amiga IFF format. Since the innards of the magazine are not printed in color - yet - the disk versions let you see them in all their brilliance on your own Amiga's screen.

There are many things disks do that paper doesn't, and as time goes on and issues roll by, **AmiGadget** will do things on the **Issue Disk** that are neither included nor includable on



paper. The **AmiGadget Issue Disk Two** (future issues' disks will be named sequentially) is yours for only \$4.50. If you add the disks' cost into your subscription, it's \$9.00 per issue, and postage - *First Class* - is still free. Otherwise, there's the small matter of two dollars per order for postage and handling and such. No need to add any extra postage on magazine subscriptions, however. That's already included in the outrageous prices.

The Issue Disks are always available, too, so if you want Issue Disk One, which goes with the premier issue, Volume 1 Number 1, it's available now, also for \$4.50. Remember postage is on a *per order* basis, so you can chuck in another

disk or three for no extra postage charge.

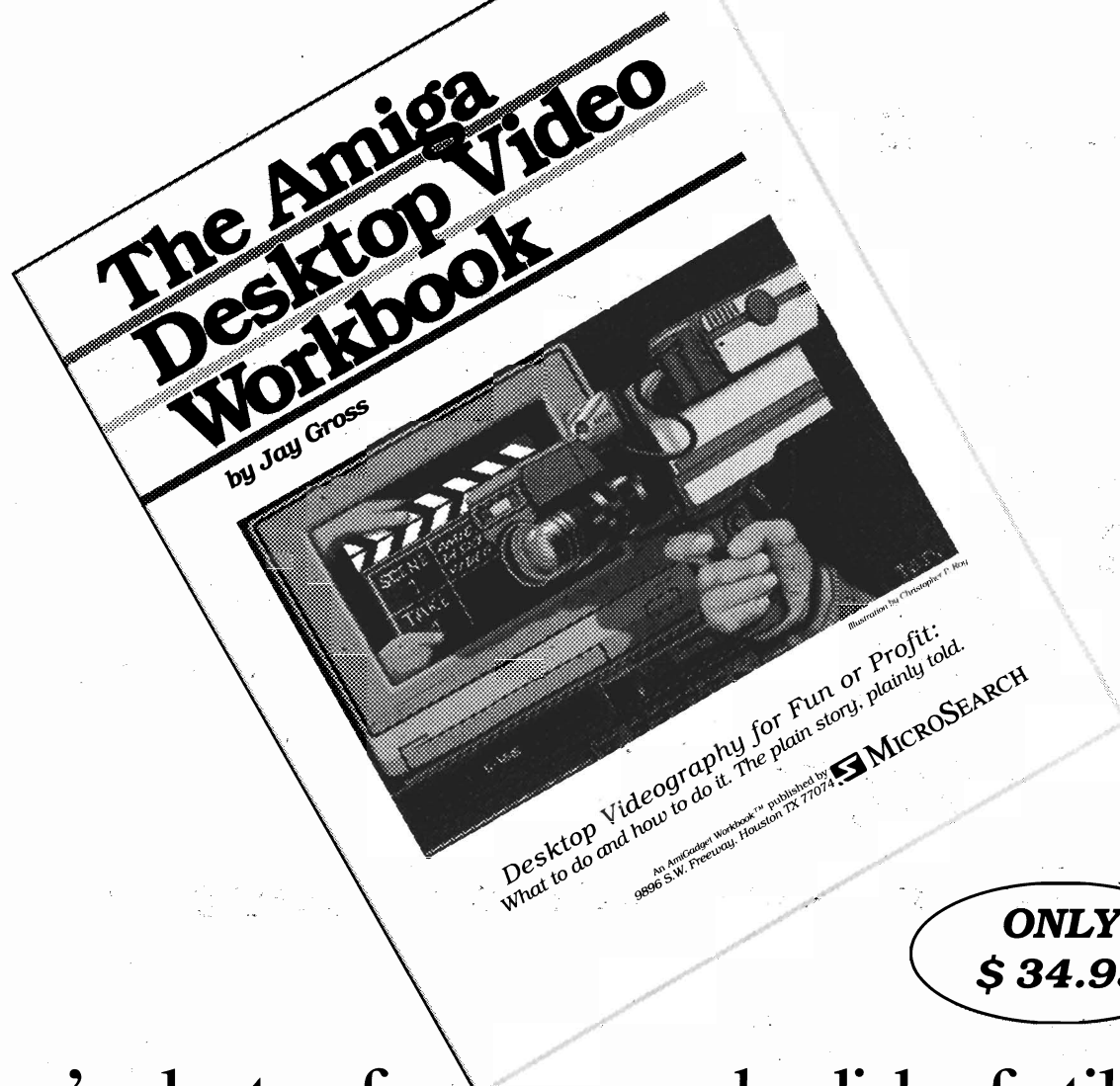
Products.

In addition to this magazine, **AmiGadget Publishing Company** publishes a growing list of Amiga software titles, including *Color Clip Art* by Software Designs, *2020*, an AmigaVision tutorial package by the BCS Group, and *Fat•Sounds*, an extensive library of sampled sounds by Eyeful Tower Communications. There are advertisements for these wares scattered through the magazine, and if you're moved to buy any of them, you can use the order form for that, too, if you wish. Frankly, you'll probably find better prices at your local Amiga store.

The editor's books.

In addition to all this, there's a place on the order form where you can support your local magazine editor in a style to which he would like to become accustomed by buying scads of copies of his books. First is **The Amiga Desktop Video Workbook**, by Jay Gross. This is a book on (what else) video that tells the tale in pure-tee English for beginners. The 300-page tome includes thorough discussions of Titling, Animation, Genlocks, Animation, Audio-for-video, Staging, Lighting, Editing, and most everything else you could ask about desktop video on the Amiga. There's an extensive section on opening your own video business, too, including nuts-and-bolts advice on how to do it. The best jokes are in the Glossary. Then there's the new one, **The Amiga Multimedia Workbook**, by Jay Gross, published December 1991 by Push-Button Publishing. You can reserve your copy with the order blank.

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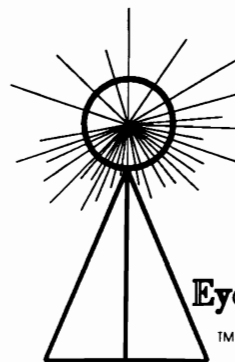
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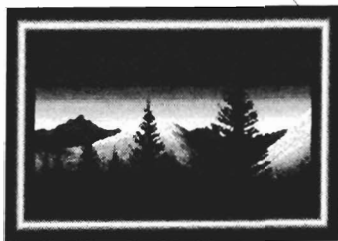
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PROPS - for use with Scene Generator



down to "Fill Defaults." When the Fill Defaults menu pops up, click on the Set Screen Mode button. The second menu (shown at the right in Figure 2) will pop up. This is where you select the quality of the painting you will make, according to the resolution desired. Our first selection will be to render in Interlaced Ham mode and "Standard," though later on, we will render our 24bit work to the DCTV unit. When you "Accept" this selection, you will be returned to the original Fill Defaults menu, where you have other selections to make. Turn on the following: Light Mode, Fill Mode, Dither, Transparency, Phong, and Pal Match. then "Accept" your choices.

Now, we will draw on the screen. Look at Figure 3. Do you see the dark line that defines half of the shape of the goblet? That is what we are going to draw. First, click your right mousebutton on the Page Move gadget to center the point at the axis 0,0,0. Make sure you're in the Y view. Now, click on the pencil icon. Draw from the center of the axis, making a shape roughly like the dark outline in Figure 3.

When you want to start a new part of the shape, just hit the TAB key. Doubleclick the left mousebutton when complete. Click the right mousebutton on the Page Move gadget again to center the point. Now click the right mousebutton on the Spin or Sweep tool, which will bring up its requester (see Figure 3 again). Change the Segments box to read 22 and Accept the results. Don't be concerned about the other settings in this requester for the moment. Now click on the Z view button, as this will be the axis around which we will spin or lathe our shape. Select the shape by clicking on any one of its points, and then immediately use the left mousebutton to click on the Sweep tool. In a moment, you should see the 3D shape of the goblet.

When an object is white, it has been selected. First, before adding any attributes to our creation, we want to

remove the original 2D shape from it. This is very important, as leaving it

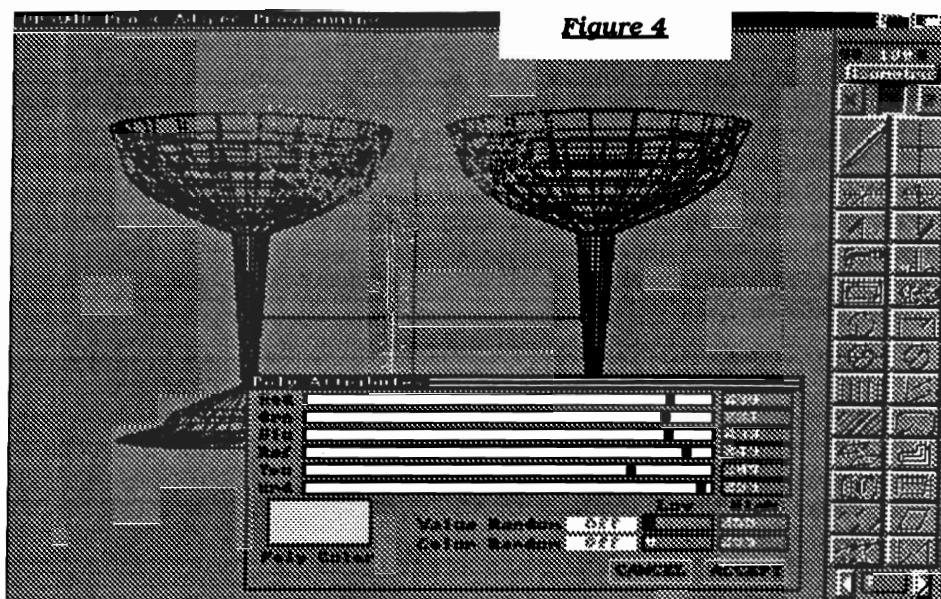


Figure 4

there would result in unexpected surprises when it is rendered. To remove the original shape, Deselect the object (Click the right mousebutton anywhere on the screen.), and then

accessing it by choosing "Set Reflectivity" from the top Tools menu. Do this. After making sure your Goblet is selected (colored white dots), set the sliders in this requester to match those

in Figure 4. This will give us a white goblet that is fairly transparent and reflective. As you can see from this figure, we have cloned two more goblets and set them in an arrangement with each other. Experiment to see if you can accomplish this, remembering that a selected object may be moved on the screen by moving the mouse while holding down the left ALT key. Figure 5 shows a Ham rendering of this composition, while Figure

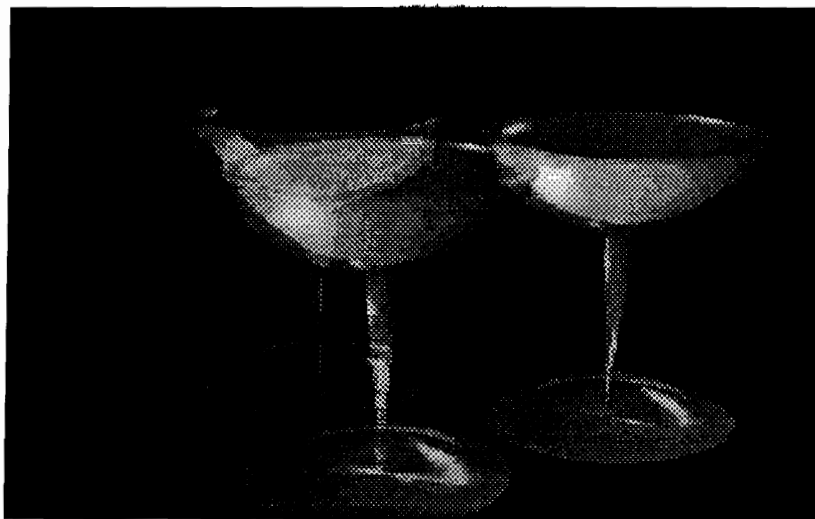


Figure 5

click on any edge of the 2D shape with the left mousebutton. You might have to try this a few times to get it right.

You can go to the Tools menu at the top menubar and down to the Show Filled option to see the full rendering of what you have accomplished. Now select the Polygon Delete tool and get rid of it. After this, click your left mouse on the icon that looks like a group of triangles. This will select the rest of the goblet. "Join" all of the polys with the Join tool (left mouseclick).

6 shows it as a 24bit rendering. By turning on the "DCTV Filter" option before rendering your image, you can use the DCTV unit to view it.

With this get-acquainted tutorial, we've only begun to explore the wonders of Draw-4D Pro. The adventures continues. . . next time.

THE NEWS

Winter 1991

News about the Amiga and Amiga Companies

by Jay Gross

Amigas' disk capacity increases

The newest shipments of Amiga 3000 computers have been quietly going out the door equipped with *high-density* floppydisk drives as the standard, internal units. Under AmigaDOS 2.04, which the computers have in them, these floppies are capable of writing a new, high-density AmigaDOS format, putting twice as much data on the Amiga disks as previously. There are two ways to format them, in fact, yielding two different capacities. The default system format command (click the disk and pull down the menu item "Format Disk" from the titlebar) puts two-times-848-K on them. That's 1.6 megabytes or so, and that's formatted capacity, not pre-formatting. This method, however, applies the "Old FileSystem" of the pre-two-point-oh machines. Machines with AmigaDOS 2.0 in them can format floppies under the "New FastFileSystem," which writes a real 880K per disk with regular floppies. Double that for the high density ones, to make disks of 1.76 megabytes capacity. Pretty useful for storing huge animations, 24-bit pictures, or the seemingly interminable Postscript files needed to produce color separations (audible groan from your frazzled editor).

The new high density drive works only under AmigaDOS 2.0, but it works in Amiga 2000's as happily as in 3000's.

There's no trick to formatting disks under this new system - except the trick of buying an Amiga 3000 to do it with. Just put a high density floppydisk in the drive, and tell the machine to go. It does the rest. You can

tell high density 3.5" floppies from the regular ones easily. They cost more money, and they have two write-protect windows instead of one.

If you perform the formatting from the command line, you can instruct the machine as to which format you want, including the new FastFileSystem. The machine defaults to Old FileSystem on floppies, for compatibility with older Amigas. To get the FastFileSystem, 1.7-megabyte floppydisk format to work, pull down the menu item "Execute Command. . ." from the Workbench menus, and when the little requester box pops up, type the following - *exactly* - into it:

```
format drive df0: name Test FFS
```

You can, of course, select any name you want, but "Test" looked fabulous in print here. The command will execute when you hit the <RETURN> key, so if you have something on the disk in the internal drive, you'd better get it out of there before you okay the process. The Format command (Called "Initialize" under AmigaDos 1.3 and earlier) quizzes you as to your certainty before carrying out your instructions, just in case. To test to see if this worked, wait till the formatting is complete, and then click the new disk icon that comes up, and pull down "Information" from the Workbench's menubar. The number of blocks on the disk is shown at the top left of the Information box that comes up. If this number, divided by two, is more than 880, you have successfully formatted a high-density disk. If it's 880, the formatting didn't produce high density. One reason it didn't could be that your machine doesn't have the high density disk drive. The regular-density drives are not capable of the higher number of tracks that the high density ones can

do. If you're running AmigaDOS 2.0, you can just open the disk (doubleclick the disk's icon), and the system will display the amount of free space in the top of the disk's icon window.

Another cute thing about the new disk drive is that it will also read and write the standard 1.44-megabyte format readable by many non-Amigas. Doing this trick requires the current version of CrossDos, a program which facilitates (*and how*) reading and writing, and even formatting, Ms-Dos-format disks on Amigas.

To get the benefit of these drives, you have to have one of them, and currently, they're being supplied as standard equipment only in the newest Amiga 3000's. It's not a normal 1.44-megabyte, high density drive, but a custom job. The Commodore Part Number is 313248-01. Of that, the significant numbers are the first six. The "01" means revision number, so if you see one with "02" or "03" that's a newer version. Installation in an older Amiga is not difficult, but it's not a job for the hardware-timid. Note also that the drive behaves like a standard Amiga one if you feed it normal, double-density disks. It kicks into high gear only when you feed it high density disks. It also requires AmigaDos 2.0 to work at all.

Book news

There are some new books on the Amiga bookshelves worth a mention. Of course, the primo one is your tireless editor's new book, *The Amiga Multimedia Workbook*, which is published by Push*Button Publishing, and is blatantly promoted (with *paid*

THE NEWS continues on page 45...

Raytracing Light



By John Mitropoulos

First a bit of Background Information. . . I originally created the Flash Lite object that you see traced here using TurboSilver version 3.01SV, because I wanted to experiment with light sources to see how the tracing engine in Silver would handle them. It didn't take long to realize that things don't always come out the way we expect them to. The first couple of attempts at tracing the flashlight resulted in disappointment. The light coming out of the end didn't look like a real flashlight (I know, I looked). The problem was that with a real flashlight, the light seems to come from two basic sources; the bulb itself, and the reflection off of the reflector behind the bulb. With Silver, the only light I was getting was the light from the bulb, minus the shadow from the reflector/head assembly. This didn't look very realistic.

After a little experimentation with various parameters I came to the conclusion that I would have to "fake out" the ray tracer. My solution was to make an object, the bulb, that was semi-transparent except in one spot in the front. This effectively gave me two light sources, one bright source representing the light directly from the bulb, and one not-so-bright

source representing the light from the reflector.

The results of this little "trick" are presented in electronic form - that is, the object file, now in Imagine's object format - on the AmiGadget Issue Disk Number 3, available from the magazine. The process of creating it is also described here, so you can make it up and trace it for yourself.

When Imagine came out, I tried the experiment again, but encountered another problem when I attempted to import the object into Imagine. For some reason, everything worked fine except that the light wasn't illuminating the inside of the flashlight as it did with Silver. I changed every conceivable parameter available to me and nothing worked. Usually when something doesn't trace correctly in Imagine (or Silver), the

solution is that the objects are outside of the "world." As this gives pretty predictable results, the techies at Impulse can usually spot the problem and point it out to you in no time. With my problem, all I got was extra bucks added to my phone bill. The problem here is that no one knows what will happen if the camera itself is outside the "world," because the results aren't predictable. That was the problem I was having; my "world" was set to 1024 units, and my camera was positioned somewhere around 3000 units in one direction. One solution to this problem is to go into the Stage Editor and add a size to the Globals parameter. If you leave this size as 0,0,0 Imagine will automatically set the World size to the object that's farthest out. One caveat to this is that it causes the program to eat memory, so remember to keep your objects, and your camera, within the boundaries of your World settings.

Building the flashlight

This lesson assumes you're using Imagine, but you can just as easily follow along if you are a Turbo Silver owner. I will give Imagine's keyboard equivalents to functions if they are available. Start up Imagine and choose New from the Project menu. Give the project a name and proceed to the project editor. Select

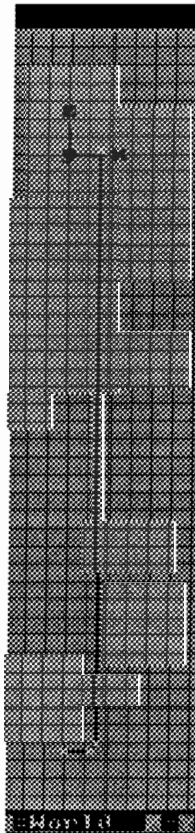


FIGURE 1

New from the Rendering Subproject screen and name the subproject. Use a descriptive name like LacedHam to make it easier on yourself. Now enter the Detail Editor (Right Amiga 2) for some construction work.

The first thing we'll build will be the shaft of the flashlight. Go to the Functions menu and select Add, then Axis. An axis will appear in the center of your workspace. Highlight it by pressing F1. Then go to the Mode menu and select Add Lines (Right Amiga 9). Construct a shape similar to the one in figure one. Remember to stay in proportion; the grid size in all of the figures is 20 units. Don't worry if it doesn't look right the first time, you can always use Drag Points in the Mode menu (Right Amiga 0) to tweak and pull it into the shape you want. The lower left point should be at the same X and Y locations as the axis. When you are satisfied with what you have, select Mold from the Object menu (Right Amiga E). Then select Sweep and set the number of sections to be used. A higher number results in smoother curves but will increase your trace times. Select Perform to sweep the shape around the axis. If you don't like what you have done you can Undo the sweep and try again after adjusting your shape. When you are satisfied with the object, *be sure it is selected* and choose Save from the Object menu (Right Amiga S) to save.

Next we will build the head. Select Pick Objects from the Mode menu (Right Amiga 2). Add another axis to your workspace and use Add lines (Right Amiga 9) to construct the shape in figure two. The lower left point should touch the shaft. You may find it easier to position the point if the shaft is still on the screen, which it won't be if you zoomed in. The best way to do this is to go to the zoom factor you need, while still keeping part of the shaft on the screen, before you add the lines. When you are done with the shape for

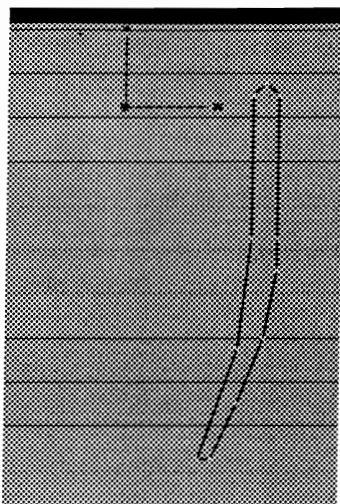


FIGURE 2

the head, use sweep to make the object. With the axis still selected, choose Transformation from the Object menu (Right Amiga T). Click on Translate and enter 50 in the Z requester. Click on Transform Axis Only then click on Perform to move the axis. This will keep from having all of your axes in one spot, an annoyance at best.

Build the reflector using the same techniques as for the

bulb and reflector.

Tidying up

Now that you have all the pieces made, it's time to add some color and do the final construction. Select Pick Objects from the Mode menu (Right Amiga 2). Choose the shaft and select Attributes from the Object Menu (F7). Click on the Color gadget and adjust the sliders to obtain the color you want. Adjust the Specular and Hardness values to whatever you wish (I used 65 and 13 respectively). You should also rename the object from AXIS.# to whatever best describes it.

When you're done click on OK to keep the changes. Click on the head and adjust the attributes the same way. All the values for the head and shaft should be the same, unless of course you don't want them that way. I've found that the reflector

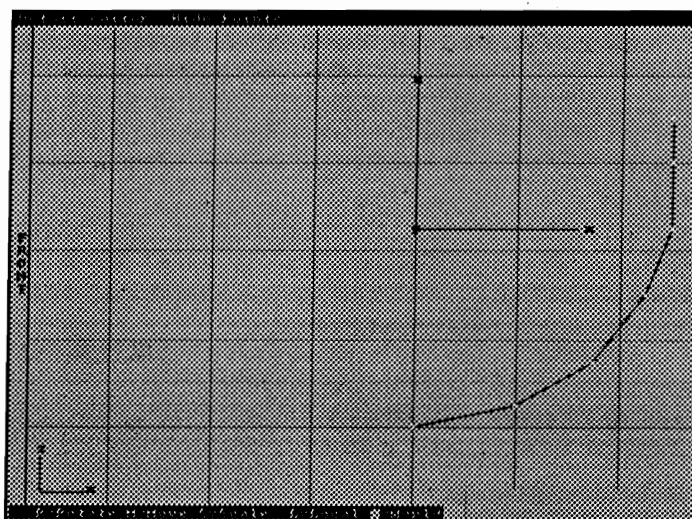


FIGURE 3

shaft and head. The lower left corner of the reflector should also be at the same X and Y locations as the axis. The upper right corner should touch the head at some point close to the top. Translate the axis to -50 in the Z direction using the same method described above. Be sure to save the reflector so you won't lose your work if something goes wrong.

The bulb can be built in a similar manner as the other components. Don't put the upper left corner too close to the axis, as this is where the light will shine through in the end. Don't forget to translate the axis so it won't overlap any of the others.

Of course, no flashlight would be complete without something to cast some light. For this you need to add one more axis positioned inside the

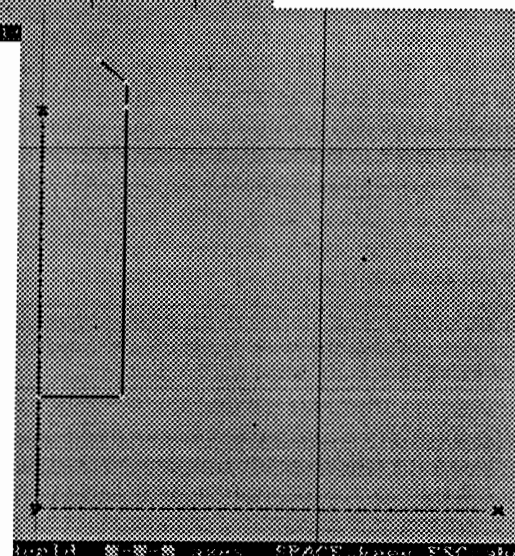


FIGURE 4

doesn't have to be reflective to achieve the proper effect but you can tell the difference when the object is traced. If you don't want the reflector to be reflective, make it a light color so the light can show up on it well. For the bulb, all the parameters should be set to zero except for the Filter value. I

Getting up-and-running with Draw-4D Pro

by R. Shamms Mortier, Ph.D.

Needed for this tutorial:
Version 1.1 of Draw4D Pro
Any Amiga with at least 2
megabytes of memory
The DCTV unit from Digital
Creations (optional)
A love of experimentation

Draw4D Pro from Adspec Programming is one of the new 3D/4D animation products for the Amiga. Although it requires some study and experimentation before you get the hang of its tools and processes, even first-time Amiga animators will get a quick thrill out of the results. This is ten-times true if you have Digital Creations' DCTV unit, which Draw4D-Pro addresses directly. To work through this tutorial, A modicum of experience with the Amiga's basic operations such as opening menus, working with the mouse, etc., would be helpful. With that, and the required hardware and software, you should be able to dive right in.

As can be seen from Figure 0, the Draw4D interface screen has a Workbench 2.0 design. The tools are along the right hand side, as is pretty standard for an Amiga design program. Follow along, looking at Figures 1 and 2, and we'll take a tour of the tool icons, explaining briefly what they do.

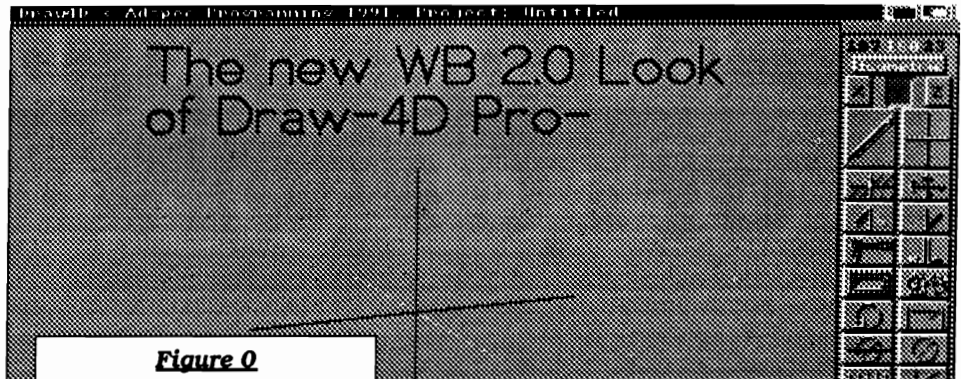


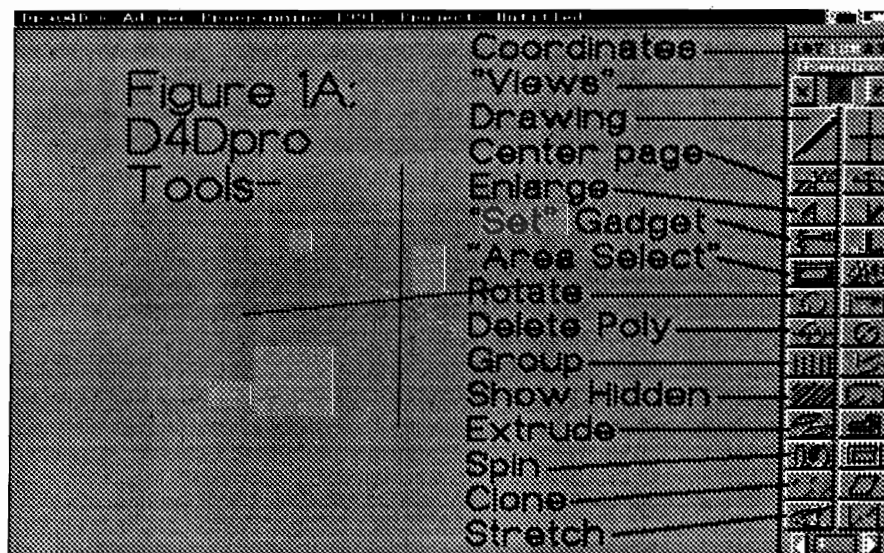
Figure 0

At the top of the screen are the XYZ coordinates that tell you where the

place you're in those planes. Not to be confused with other drawing programs, however, that flatten out the XYZ planes, Draw-4D Pro allows you to spin

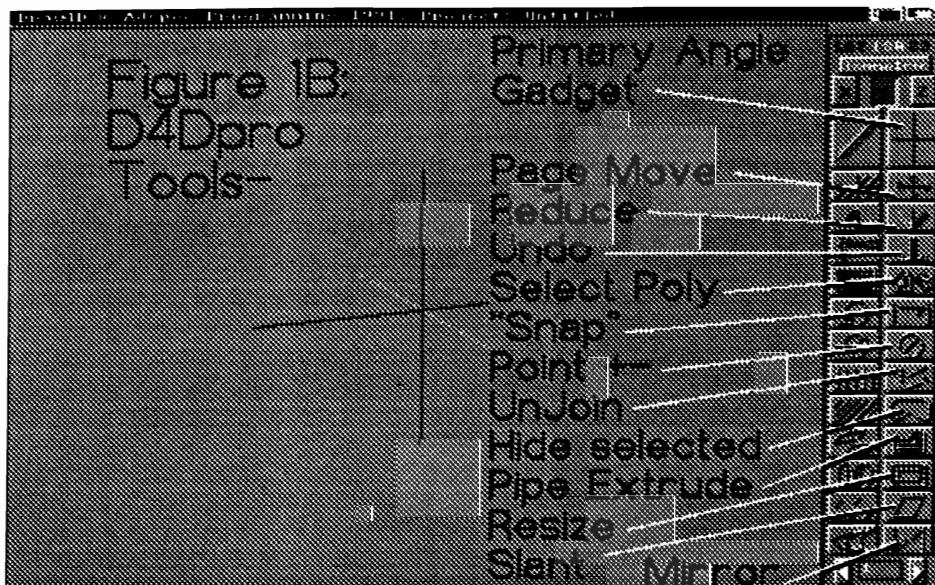
your view in all cases, by simply using the row of keys on the numeric keypad. Now let's look at the toolbox icons down the left column of the toolbox.

The largest icon on the left is shaped like a pencil, and for good reason, as it is the main drawing tool. It will draw a straight line from wherever the last point was placed. By using the TAB key in



mouse is at all times. They are color coded: X is black, Y is white, and Z is red. Below that, and not called out in the Figure, is a toggle for "isometric" views. This allows you to see without the normal fish-lens effect of full perspective, and is useful when your drawings get overly complex. The XYZ buttons, below that on the screen,

in conjunction with it, a new line joins the first. A doubleclick of the left mouse button finishes a drawing. Next is the Center Page gadget, which centers the page for clarity. The up arrow icon enlarges the magnification of the screen by increments which you can set, allowing very fine control of polygon manipulation and drawing. The "Set"



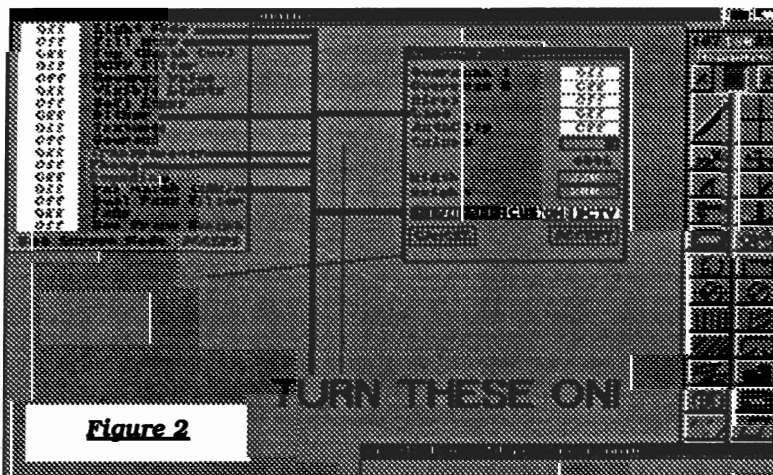
gadget - the downward hammer icon - sets a drawing or sculpture to the screen. Area Select allows you to zero in on any area for a closer look. The rotate icon allows you to both interactively and numerically rotate a selected line or polygon around the set point.

Groups of polys ("polygons" by another name) can also be rotated. Delete Poly removes selected items from the screen. The Group icon joins selected polys and lines into one "Object." Show Hidden brings back all polygons to the screen that were temporarily removed from view. The Extrude icon is used to give a polygon a user-defined depth or thickness along a selected axis. Next is the icon used for "spinning" or "lathing" a polygon around a selected axis and point. Clone makes a duplicate of selected lines or polys. Stretch elongates or shortens a selected object in a definable direction.

Figure 1B:

Now let's look at the icons along the righthand column of the toolbox. First is the Primary Angle gadget. This is used to set the viewing angles of each of the axes in turn. There are defaults that can be altered to suit your work. The numeric keypad is also used for the same purpose. The Page Move

icon is used to move the view interactively, while a right mousebutton click "sets" a point to the screen. The down arrow reduces the view in size, allowing you to see more of the screen.

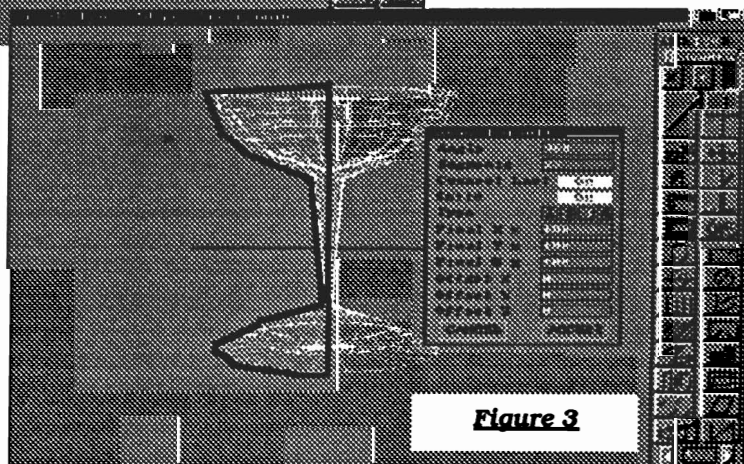


The vertical hammer icon is the "Undo" tool. A left mousebutton click on the Select Poly icon gives you a bounding box on the screen with which you can choose polys to be selected and operated on. A right mousebutton click selects everything on the screen as active. The Snap tool attaches selected points. The icon that looks like a circle with an X in it is the "Point add/delete"

tool. It allows you to add and delete points from a selected poly. The UnJoin icon is used to separate a poly into singular elements. Hide Selected is very useful when the number of on-screen polys get so complex that you can't see where you are. Just select some and send them into the nether world with this tool, recalling them with its lefthand counterpart. The Pipe Extrude tool is great when you want to extrude an object along another one, like creating picture frames. The Resize button can be used both interactively and numerically to resize a selected object. The Slant tool is used to skew an object along a selected axis. The Mirror tool flips a poly or line about a selected axis. The last item at the bottom of the toolbox is the Page Selector.

OK. . . time to take a plunge

There are numerous other features in this program, but let's cover them as we need to while we learn to create an image in Draw-4D Pro. it seems every tutorial you see on an Amiga 3D program walks you through the creation of a sculpted wine glass, so why should this one be any different? Besides, by learning to create a wine glass, you will become



familiar with many Draw-4D Pro tools and processes along the way. First, use your right mousebutton to access the pulldown menus. Get into the listings under "Defaults" at the top, and go

have found that 80 is a good value for this attribute but feel free to play around with it for different effects. Finally, select the light source, hit (f7) and click on Light. When the requester comes up, click on Spherical, Cast Shadows and Diminish Intensity. In the boxes for Intensity, set the Red Intensity to 3000, the Green Intensity to 2000 and the Blue intensity to 0. Click OK

don't know what they do, I just guessed. These values make a horrible mess if you trace the picture in a higher resolution in 24 bits.

Putting it all together

Now lets make a scene with your newly created (or loaded from disk) objects. If you are using the objects from disk, you may find it more

the camera, enter the Action screen by selecting Action from the Objects menu (Right Amiga A). Select the delete option at the top of the screen and click on the box that corresponds with Align next to Camera. Select Add from the top menu and doubleclick on this same spot. Click on Track to Object in the Specify Type requester, and enter the name of the object representing the flashlight in the

Object Name box of the Track to Object Info Requester. Exit the Action screen by selecting Done from the top menu.

To get a preview of how your object will

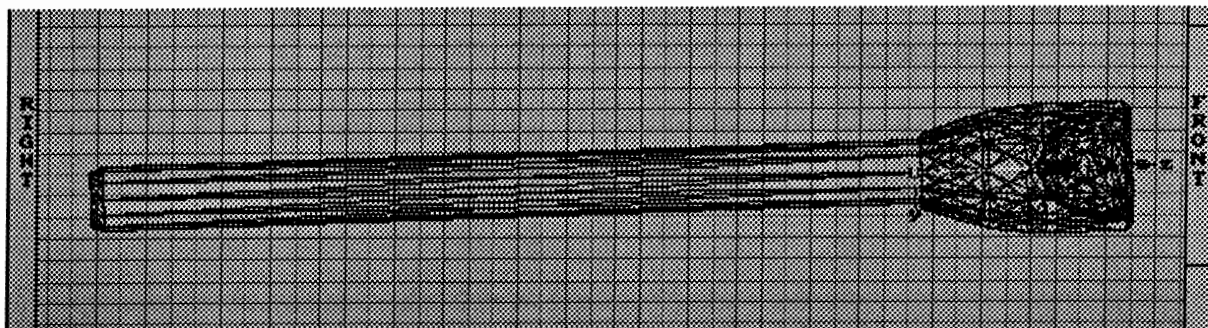


FIGURE 5

to keep the changes and again for the main attributes.

One final word for the attributes, if you plan to trace this object in 24bit, you should set the Dither value to zero for all the objects.

When you're done setting all the attributes, hold down the left Shift key and click on the axes of all the objects starting with the shaft. Go to the Object menu and select Group (Right Amiga G). You now have a new flashlight object, but it looks kind of funny standing on end. Select Pick Groups from the Modes menu (Right Amiga I) and click on the axis of the shaft. Use the Transformation requester to rotate the flashlight to whatever orientation you wish. My final orientation is -88 degrees in X. The cover of this magazine shows its final position, as traced in Ham by Imagine. When you're done, save your new flashlight for use in your next scene or animation.

I have included a floor in the scene. It is merely a Ground object with a wood texture applied to it. The color of the ground was set to Red 211, Green 113, and Blue 41. For the texture, I set RGB Red = 140, RGB Green = 80, RGB Blue = 40, Ring Spacing = 5, Exponent = 7, Variation = .8 and Random Seed = 123. You should play around with these values to get a feel for what each one does. I

convenient to copy them into the <objects> sub-directory in your <filename>.imp directory or wherever you choose to store your objects. To begin making the scene, you need to be in the Stage Editor. You can get there by selecting Stage Editor from the projects menu. In the stage editor, select Load from the Objects menu (Right Amiga L) and load in your objects from whatever directory they're in. The objects on the *AmiGadget Issue Disk* for this issue have been created to be in the proper position when loaded. If you're using your own objects, position them anywhere you want. This can be done graphically by pressing r or m on the keyboard to rotate or move respectively, or it can be done numerically by selecting Transformation from the Object menu (Right Amiga T) and keying the information into the appropriate boxes.

When the objects are all loaded in and positioned correctly, you will need to add another light source (besides the one in the flashlight). This is because the shadow cast by the flashlight bulb will obscure the body of the flashlight. You can place this second light source anywhere you wish, within reason. Next, you should orient the camera to the angle and position from which you want to view the scene. Once you have positioned

be oriented in the rendering, select Camera View from the Display menu item. If you are not satisfied with the positioning of the camera, move it around again. Since versions of Imagine numbered lower than 2.0 don't have an auto tracking camera you need to enter, then exit, the Action screen to see your changes. Just enter the Action screen as before and click on Done. Be warned; if you click on Undo when no changes have been made in the Action screen, the program will crash. Also, keep an eye on the position of your camera and make sure that no coordinate is greater than 1024. If so, be sure to have a size bar next to Globals on the Action screen with a size of 0,0,0. You can check the coordinates of the camera by clicking on the position bar next to Camera on the Action screen.

When you are happy with the staging, select Save Changes from the Project menu item (Right Amiga S) and then go to the Project Editor for tracing. One final note to those of you who wish to use the Objects on disk. The woodfloor object expects to find the WOOD texture in the directory named `Imagine:files/IM_Textures`. To change this, you will need to load this object into the detail editor and modify the first texture. Happy Tracing.

Getting to know AmigaDOS Two-Point-Oh

by Jay Gross

AmigaDos Two Point Oh has been available in a succession of incarnations for Amiga 3000's for more than a year. Now, it's available in its finished, final, set-in-stone version for Amiga 2000's, 2500's, and 500's.

This article is all about what it is, how to get it, what to do with it, why you'd want it, why you might not want it, what it does, and what not to do with it. Oh, and how to install it, too. Eighty thousand words from now, all this will be crystal clear to you, and your frazzled editor will have cramps in all ten of his thumbs. Okay, okay, this article isn't *all*

about all of that, but it hits the high points, to get you acquainted with the new operating system. The next eleventy-dozen issues of the magazine will take care of the finer details. Just in time to welcome another AmigaDos, most likely.

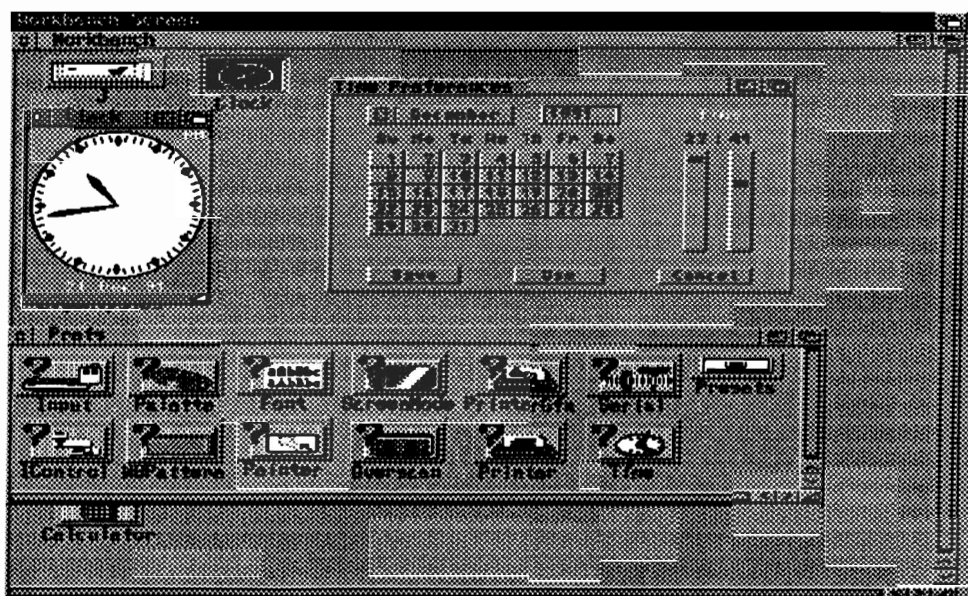
First things first, and down to basics. AmigaDos 2.0 (The actual version number is 2.04, really) is an

update to the Amiga's operating system and system software. It's both software and hardware. The hardware part is a computer chip that must be installed in your Amiga, replacing one of an earlier vintage that's already there. These chips are affectionately known in computer circles as "Rom" chips.

actually, in case you still crave the bugs and featurelessness of AmigaDos version 1.2. For some purposes, you might want to consider this option, but if you go with it, it brings along some complications that we'll come to later on. Not prohibitive complications, just complications. Film at eleven.

Okay, now back to Two Point Oh.

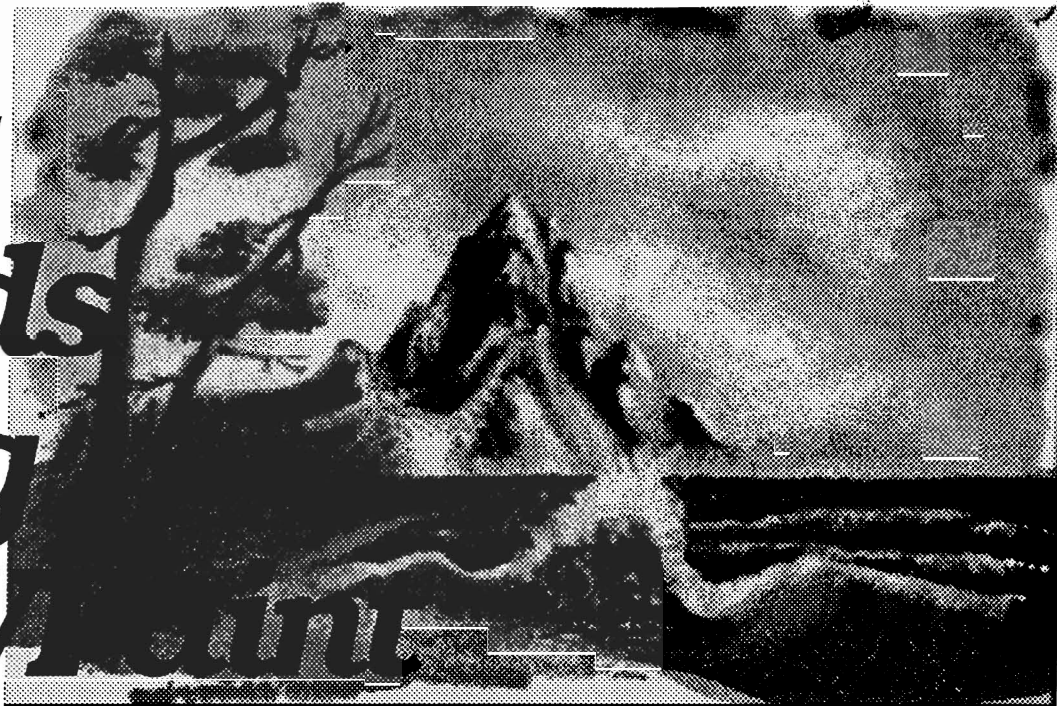
Along with the Rom chip, there comes a *hefty* manual of the shrink-wrapped pages and vinyl binder ilk, four glorious disks emblazoned with the colorful Amiga checkmark cleverly disguised as a rainbow in this week's official version of the Amiga logo. The



They're really chunks of memory that the computer can read from, but not write to. "Rom" means Read-only Memory. There's probably nothing wrong with the old chip, so hang onto it, in case something ever goes wrong with the new one. There's even a board available from DKB Software the lets you put both chips in the computer at once. The board holds three Rom chips,

disks are: Amiga Workbench, Install Disk, Amiga Fonts, and Amiga Extras. There is no Kickstart disk, for folks who have Amiga 1000's. One problem is that the Kickstart portion of the Amiga operating system - that's what's in the Rom chip, the lowest level of the system software - is *bigger* than the Write Control Store space in the Amiga 1000's, which is 256 K. It is possible to

Easy clouds using DCTV Paint



by Jeff Tyson

This time, we'll analyze some ways to make clouds using DCTV Paint, and create a landscape focused on a tree with a cloudy sky as the primary background.

First, we will create clouds using an *additive* technique.

In DCTV's Paint module, choose the Brush icon from the tool bar to enter the painting mode. Select the gradient requester, and clear the current gradient. Select a pale blue, and place it at the far right of the bar. Then select a medium blue, and place it at the far left of the bar. This should give you a smooth blue gradient. Go to the fill requester and select Gradient fill. Set the gradient to vertical, no highlight. Select the Rectangle tool and the Fill tool from the tool bar.

Make sure you're in solid airbrush mode with Flow set to 100 percent. Starting in the upper lefthand corner, drag out a rectangle that fills the entire screen. After creating the gradient-filled screen, set your brush size to 4 and select the Dotted Freehand tool. Choose the brightest white and draw some lumpy masses scattered around your screen. Now change to Blend mode and set the flow rate to 55 percent. Using tight, circular

motions, go over the white shapes. Pull out slightly to each side to create wispy tendrils. With a little practice, this technique can be used to create very realistic clouds.

Using Watercolor mode

An alternative to the airbrush/blend combination is to use the Watercolor mode. This style creates clouds with a much more subdued texture. You can use both techniques when building large cloud formations, to help give depth. The Watercolor technique is more useful for distant clouds. Don't hesitate to use Blend on a cloud created with Watercolor mode. This will give you a little more control over the exact nature of the cloud. Remember, clouds are masses of water vapor, having no color inherent in them. Clouds operate very much like water, visually, in that they reflect the colors around them to a certain degree. Using Watercolor mode and a flow rate of about 75 percent, you can add colors of strong features, such as a setting sun, to your clouds.

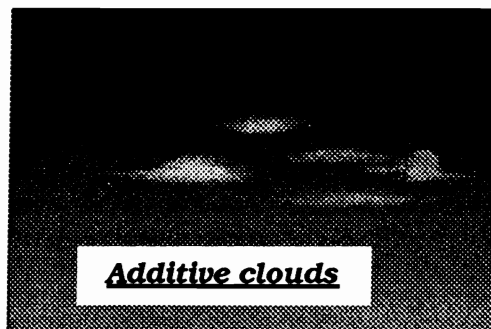
Just remember that this should be a very subtle effect.

Subtractive clouds

The other method of creating clouds we will explore this time is a *subtractive* style. Begin by clearing the screen to white. The easiest way to achieve this is to select white and then press Shift-K. Now that you have a white screen, set your brush size to 20 and select the soft-edged round brush. Make sure you are in solid watercolor

mode and that the flow rate is set to 75 percent. Select a medium blue and the Dotted Freehand tool. Now, starting in the upper left corner, slowly drag your brush across the screen in short "X" marks. The

strokes you make should slightly overlap and crisscross each other. Allow the screen to take on a somewhat blotchy look. Leave areas of white showing where you want your cloud formations to be. As you move down the screen increase the speed and length of your strokes to create a graduated wash. Decrease the size of the brush and refine the edges of the



Additive clouds

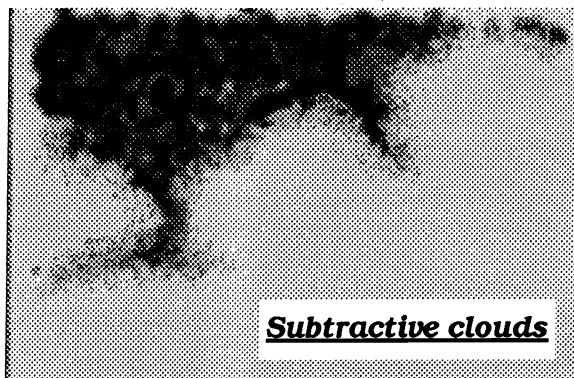
clouds. Change to blend mode and set the flow rate to approximately 60 percent to add texture to the clouds. This method is very similar to the "Wet on Wet" watercolor technique used by many traditional artists. You can vary the colors used in this technique to create different moods. If you use a pale grey for the background and a deep blue or purple to paint with, you can achieve a realistic, stormy look.

Adding a tree

Now that you know how to create different types of clouds, let's put that knowledge to use. Using the subtractive style picture we created, we'll add a tree to the scene. We will set this scene up from the "worm's" eye view. This means we will treat our horizon line as an invisible line at the top of the screen in our sky. The vanishing point is located on this line and that is where the vertical lines of our tree would

you are using a sophisticated array of electronics apparatus instead of a simple brush and colored pigments, doesn't mean you can ignore the principles of good layout, strong design, and proper execution.

After you have established the horizon line and vanishing point for



your tree, select the straight line tool, set the flow rate to 100 percent, set the brush size to 2, select normal airbrush mode, and pick a dark brown color to work with. Determine how wide you

consisting of the dark brown you are working with to a lighter grayish brown. Select the border Gradient Fill mode, and use the Filled Polygon tool to go over the outline of the tree trunk. This should create a nice, graduated trunk. Now use Normal Airbrush with a flow rate of 65 percent and a brush size of 3 with the Dotted Freehand tool and a very dark brown, to break up the regularity of the gradient fill for a more natural look.

Using Blend mode with the same settings, go back over the trunk until the little blobs of dark brown are smoothly integrated into the trunk. Now use that same shade of brown in Normal Airbrush mode with a flow rate of 100 percent and a brush size of 2. Select the continuous freehand tool and begin drawing branches. Be creative, but remember to continually fork the branches and to make them grow smaller as they get farther up and farther out from the trunk. This is a long process, but the results are worth

the effort. Next, choose a dark green color and set the flow rate to about 60 percent. Select the Dotted Freehand tool in Normal Airbrush mode and keep the size at 2. Working in smaller circular patterns, go over and around the branches you just created. By using a dark green and a flow of 60 percent, you can build leaves up with various shades of green showing through them as you continue to go over the areas. After you have built up sufficient foliage, choose a lighter green and go back over the areas you wish to highlight. You might want to go over the tree with the filter option turned on, to reduce flicker and to subtly blur the upper portions of



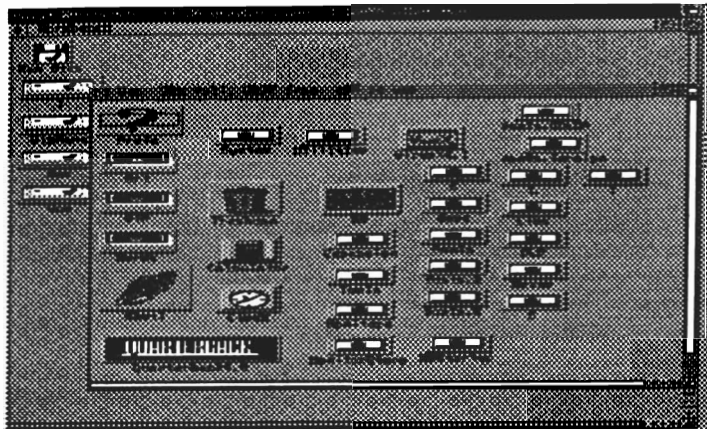
come together if they were extended all the way to the horizon line. Those of you who are traditional artists will recognize this as a basic method of determining proper perspective in a subject. By following the rules of perspective, your pictures will be much more realistic. Remember, just because

want the trunk of the tree to be at the bottom of your picture. Now begin a line at the bottom and drag the line up as high as you wish the tree to go, remembering to line up with the vanishing point you have selected. Do the same for the other side of the trunk. Set the gradient to a range

the tree.

With a little work, you should be able to create some interesting pictures using these techniques, in various combinations.

run AmigaDos 2.0 on Amiga 1000's; however, there are two catches. Catch one: It must run from volatile memory, not the Write Control Store (meaning RAM), eating up about half a megabyte of that precious resource. Catch two:



Doing Catch One requires a program that loads the Kickstart from disk, and adjusts the system parameters to use it. This is not supplied with the AmigaDos 2.0 package.

Another solution is a Kwikstart board from DKB Software. This board

lets you put a 1.3 and a 2.0 Rom chip in an Amiga 1000. There's yet another hardware solution to the problem, but it's as expensive as it is comprehensive - a Rejuvenator board from Expert Services, about \$500 with chips, \$350

without. The board makes an Amiga 1000 into the Amiga 3000-level of Amiga technology, including adding a video slot expansion connector. This board replaces the Write Control Store Tower in the Amiga 1000 with a board

containing sockets for the enhanced Agnus chip, as well as a megabyte of memory (for more graphics memory) and the 2.0 Rom chip.

Running AmigaDOS 2.0 in Amiga 500's presents a similar, but easier-surmountable problem. The

new system consumes some of the machines' memory, especially if you opt for the interlaced, overscan screens that make everything look so nice and make working in wordprocessors and stuff so much better. The easy solution, of course, is to buy some more memory. That works on Amiga 1000's, too, but it's more difficult and often more expensive to expand memory on those machines. Your obstinate editor owns two Amiga 1000's, in case anyone wants to know. One has extra memory, and one is, alas, vanilla. His Amiga 2000, all decked out in high heels and a new red shawl, is now running AmigaDos 2.0, complete with the DKB MultiStart board and a 1.3 Rom chip which has been chilling down since he first fired up this gorgeous, overscan screen.

The fabled ECS

Notice that the list of what you get with the AmigaDos 2.0 package, which lists for about \$100, does not include anything called "ECS," or

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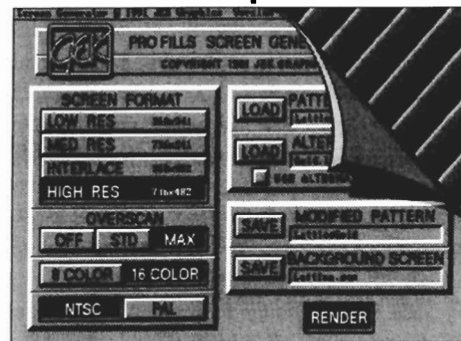
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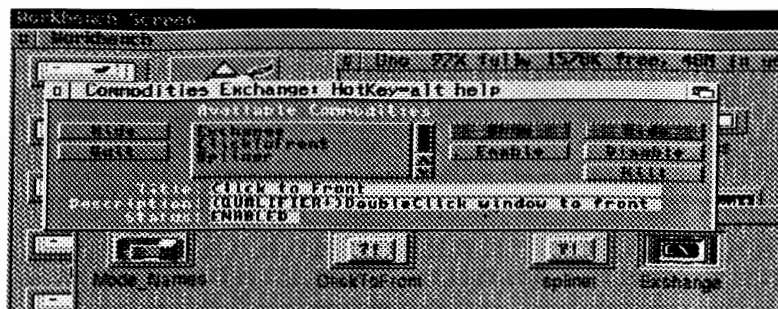
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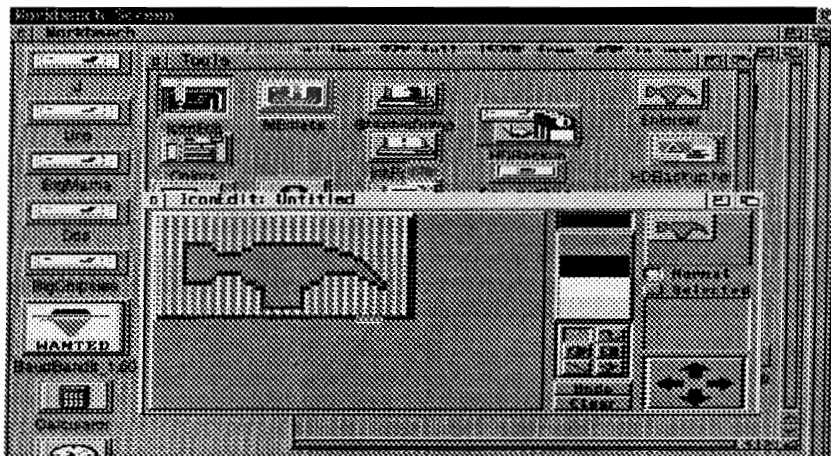
Compatible with all Amigas. 512k RAM Required AmigaDos 2.0 compatible. *Pro Fills* and *Screen Generator* software copyright 1991, JEK Graphics. All rights reserved.

"Enhanced Chip Set." That's because it's not included. It is available, however. The so-called Enhanced Chip Set comprises new versions of the Amiga custom chip sisters, Agnus and Denise. Paula's still waiting for her revamping, but Agnus has been refitted twice, both times for weight gain. The Enhanced sisters are Fat Agnus (Part Number 8372A), which supports a megabyte of graphics memory, Even Fatter Agnus (Super Agnus, she's called, part number 8372B), which supports two megabytes of graphics memory, and Super Denise (part number 8373), which enables the new display modes supported by AmigaDos 2.0. At least Denise has been spared being called "fat."

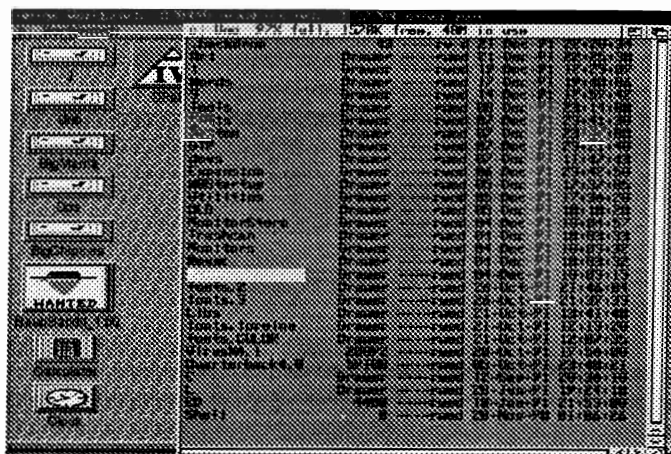
Older versions of Agnus are numbered, variously, 8361, 8367, 8362, 8370, and 8371, for her various incarnations in NTSC and PAL Amigas sold through the years. The oldest Agnus chips, 8362's, had no HalfBright display mode. The 8370 and 8371 versions didn't have the megabyte of graphics memory that the current Amiga 2000 version, the 8372A, has. Although the new operating system doesn't *require* the ECS (including Agnus), it surely does make life easier if you have it. In particular, some of the newest software on the shelves goes to the trouble of sensing what chip versions you have in your machine,



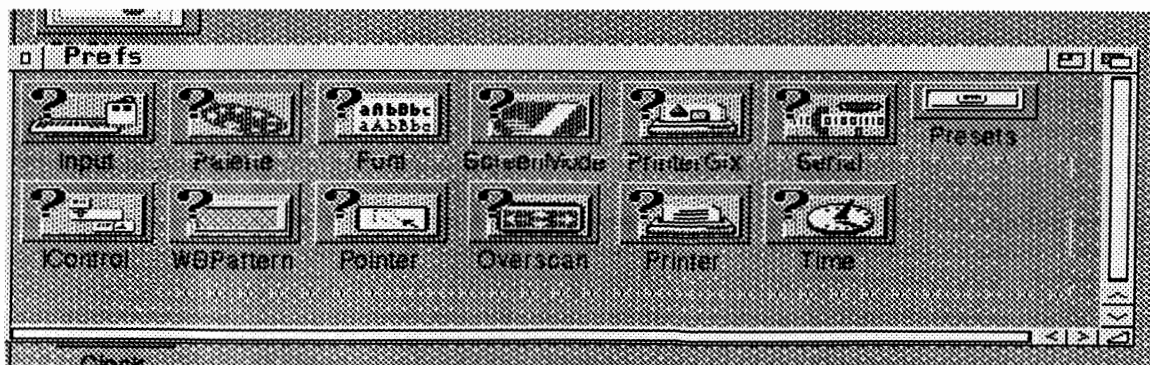
Commodities: useful 2.0 doodads



Icon editing under 2.0



Workbench showing files by name



Note 'bounding box' selection: everything touched or enclosed will be selected.

and adding (or hiding) display options according to what your chips will support. The Art Department Professional

version 2.0, is an example. If you have the Enhanced Denise, the program will add "Super HiRes" as an option in its menu of available display options. Indeed, under AmigaDos 2.0, the program puts up requesters for what options you can have for loading, saving, etc. Under older versions of the operating system, you get the same old gadgets to click.

Denise?

If you crave the special display modes that Denise enables - Productivity mode, and Super HiRes - you'll have to pay the price for a new Denise. These chips are supplied as standard only in new Amiga 3000's, which also have the 8372B Agnus chips, the ones with two megabytes of graphics memory addressing. Not much software supports these displays, yet (although they make great conversation starters among Amiga chums), so your money might be better spent on other women besides Denise, for the time being. Agnus is a good choice for spending money, if you don't already have at least the one-megabyte version. All of these

editing down to home videographers' walletability. A new player in the game is Gold Disk, which is selling a new package called Video Director, for using consumer-level (and slightly above) video decks to do the job. Video Director is both hardware and software. It's a box full of wires, in fact. One wire is for controlling your videocassette recorder with the Amiga, through the recorder's remote control infrared facility. Adding some clever software that runs in the Amiga, this amounts to moving the button-pushing from your fingers to the editing software running in the computer. That's a nice place to do the button pushing, since the computer can be much more precise about the timing of such things than your purely mechanical fingers. In use, you train the computer to emit the correct infrared codes that your recorder expects. Then you apply these to the functions you need, and edit away. It isn't *really* this simplistic, but it isn't difficult. There are many caveats and gotchas into the bargain, however, so read the box and make sure the thing will work with your equipment before you plunk down your cash. Cash, as in \$199, list price, that is. The price includes two interfaces, one for play and one for record. The infrared one is for recording. The other one is a "Control-L" plug that connects the Amiga to the control channel of Sony and other camcorders, decks, etc. Some manufacturers' video equipment doesn't honor this control language; it's proprietary, even though it's licensed to a number of companies besides Sony. Don't pay your money till you've checked all the gotchas. The typical connection is a tiny plug that looks like a microphone plug that fell into the shrinking machine. Twice. The Video Director comes with a male connection.

The Video Director is for the video editing process, not single-framing to video. You don't need any of these devices to perform editing, if you're willing to punch the buttons on all the machines at *just* the right time, and if you'll tolerate some imprecision in the resulting timing of the edit points. To get an Amiga to perform the editing, based on information you supply through a software interface, you need some way of giving the computer the ability to actually operate the decks

that will play and record at the right time to do the job. "Edit controllers," are the key to that process. Amiga-based edit controller hardware connects in any of several ways to the decks, and the software tells it what to do.

Editing an example

The easy way to understand the process is to follow along with a frinstance. Suppose you went out and shot your family in the Grand Canyon. On videotape. Wonderful footage of your foot, followed by Uncle Darby, smiling. Then the Canyon. Then Uncle Darby, and then those obnoxious people that got in the way. . . Sunset. Wow. Fade to black. Not a bad video, all 'round, but there's that foot at the start, and the strangers that need to be eliminated from the middle. Now, let's say all these really nice shots are scattered, with some more foot pictures (Camcorders do that a lot), across five videotape cassettes. To get a seamless edit, with titles mixed in, and all sorts of other improvements, you need to edit. You need to know where on each tape the "keeper" shots start, and how long they are. Then, when you put the finished piece together, you need to jog them up to the starting line, set them running, turn the record deck on, and so forth. It's even more complicated than this if you try to allow some pre-roll time, so the recorders will be up to speed when the actual recording process kicks in.

Video Director puts graphical controls on the Amiga's screen that you can point and click your way through the evaluation and selection process. The program handles the clips by name, and you can use the mouse to move them around, cut and paste just like in your favorite wordprocessor, and whittle the times to your satisfaction. The program stores all this information in a database of everything you ever tell it about, so you won't have to go through the process again, unless you crave another eyeful of feet footage or something.

When you give the go, the program will operate all the equipment to perform an unattended edit (caveats

apiently apply; you must have the right video stuff connected, of course). If the editing process calls for a tape that isn't in the machine, the program will kindly put everything on hold till you supply it, and take up again when you give the go.

Hardware

The source deck for this process can be any LANC (Control-L) compatible camcorder or videocassette recorder, or the Selectra-AG-1960 RS one. The latter is a Panasonic AG-1960 video deck with special modifications to perform in this manner. The destination recorder can be most any of them that have infrared remote controls. No need for plug compatibility when there aren't any plugs, but the infrared signal codes the various decks use aren't the same among brands.

Impulse-ive newsletter

Impulse's newsletter has been around a long time, cleverly disguised as promotional material for the company's products for the Amigas, and complete with a wry sense of humor that is. . . well, just read the thing and decide for yourself. Your enraged editor is furious that he didn't think up the latest collection of sick puns himself. The newest issue has news of the updated Imagine, version 2.0, which supports - among other things - Fog objects. These are called "atmospherics" on bigger machines than the Amiga (bigger, as in. . . the software *alone* is ninety thousand smackers), so if you want to render a

realistic cloud, or London, or the Back Bay on a particularly pea-soupy night, you can put in objects that will render as hazy, particulate puffs of. . . smoke. Other features to look for include DCTV (Firecrackers, too) display support,

stereo-glasses support, and a sampling of objects from a professional 3D object library. The new Imagine will also trigger Bars&Pipes Professional and Super Jam (another The Blue Ribbon Soundworks MIDI and music program), so you can accurately time animation



playback to music. The Imagine 2.0 product is five hundred - well, four-ninety-nine - and the upgrade for existing users is a hundred. Warm, cuddly Imagine sweatshirts are twenty-five bucks.

ProVector updated

Stylus, Inc., formerly known as Taliesin, has a new version of ProVector, numbered 2.1, which implements some of the suggestions users of the program have made. The main one is that object manipulation tools can be user configured to stay selected until another one is chosen. There are times when having the tools stay selected would slow you down, and there are times when the opposite is true. Having the configuration at hand fixes both problems. This should make the program considerably faster to operate, and it's already screamingly fast at doing its thing - which is structured drawing. Other features and changes to the new version include. . .

- A new spline drawing method for drawing curves in real time.
- Real time display of outlines of objects while editing, moving, scaling, copying, and rotating objects. This permits more precise visual placement of the objects.
- A new *Move Curve* object editing option permits moving curves around while preserving the curve's slope.
- The Undo feature has been extended to work for some more of the unusual functions, in addition to all of the standard ones. ProVector 2.1 allows 255 levels of Undo.
- Another new tool, Align, permits aligning objects precisely to each other or to a grid.
- The new program supports user-configurable Rulers, onscreen.
- Rotate and Scale tools can be operated with Clone simultaneously. This is a very handy feature of some of the non-Amiga softwares of this nature, and it's implemented in competing Amiga products, too.
- The program permits drawing ellipses and rectangles, and permits resizing of objects, from a corner or from their center. Object resizing can be from a user definable point of reference, too.

• Movement of objects forward or back can be accomplished one object at a time, or all the way to the front or back. Lots of other Amiga programs - including the one that produced this page - could use this feature.

• A new import option permits bringing previously created objects or drawings into the current project.

ProVector is one of the stars of the ARexx-able crowd, even permitting some things to be done with ARexx macros that the program doesn't have options to do. The new version adds several macros, including Blend, and Tileprint. Alas, the new release doesn't open the doors to saving or loading any fileformat but its own, "IFF-DR2D" format, which not much honors (PageStream does, but Professional Page doesn't, for example). However, the company has announced it is developing several import modules that will permit importing, viewing, and editing (brace yourself, this is *hot*) Encapsulated Postscript files, including those generated on non-Amigas of various types. This feature will go a long way toward making the program useful to your frazzled editor, but a Professional Draw export module would be quite welcome, too. Your hardworking editor makes his (quote) living (unquote) using the gaggle of incompatible products that facilitate Amiga pre-press, and has no patience for multifarious file formats.

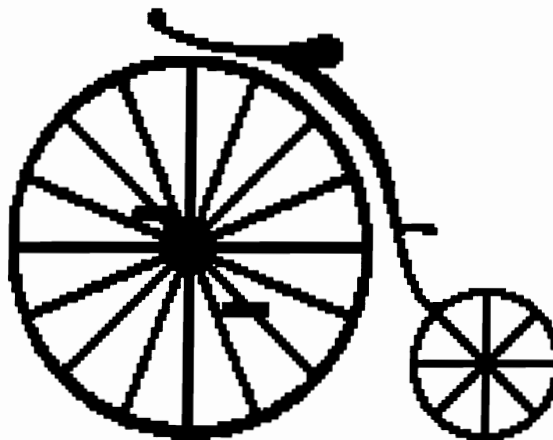
Soft-Logik Postscript Fonts

Nothing like a new font collection to round out the *New Stuff* for this issue. This one is an entire suitcaseful

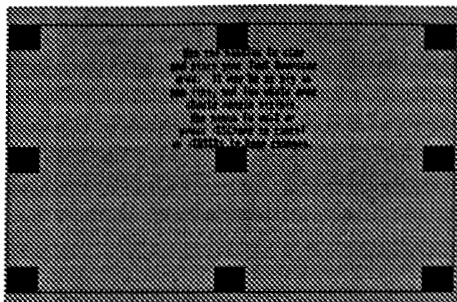
of type faces, brought over from a non-Amiga computer noted for its fonts and named for a fruit. It's the Image Club collection of more than six hundred fonts, all in Postscript Type 1 (except a few Type 3's) format. The company has put together four bundles of fonts, named "Starter," "Newsletter," "Classic," and "Designer," which extract a sampling of the huge font stores into thematic (well, sort of) sets. The Classic collection, for example, includes ITC Berkeley Oldstyle Book, ITC Berkeley Oldstyle Book Bold, ITC Berkeley Oldstyle Book Italic, ITC Berkeley Oldstyle Book Bold Italic, ITC Caslon Book, ITC Caslon Book Italic, Castle (an olde Englishe one), Commercial Script, ITC Fenice Regular, ITC Fenice Regular Italic, Gill Sans, Gill Sans Bold, Futura Condensed Bold, Futura Condensed Extra Bold, Futura Light, and Futura Medium. The package goes for \$199.95. The "Designer" package, also \$199.95, contains sixteen font faces, including one of your font-crazed editor's favorites, Friz Quadrata, which, alas, his laserprinter doesn't contain or you'd be reading in that font right now.

The two hundred-dollar font packages, Starter and Newsletter, contain eight or nine (eight in the Newsletter one) faces. The Newsletter one has ITC Souvenir Light and ITC Souvenir Light Italic, ITC Stone Sans Medium, and ITC Stone Sans Bold, along with another old favorite of the newspaper industry of days long past, Cooper Black. If you're doing your newsletter for distribution on supermarket checkout counters, you'll just *have* to have ITC MACHINE (it has no lowercase), so when you report that the Martians have landed you can do it with. . . style.

J:



chip versions are not interchangeably shaped and sized, however, so you have to watch out. Anyway, enough chip chat, the important thing about all of this is that you need at least the one-megabyte Agnus (8372A) to stay in step with the current stuff and keep much of the current software happy, especially under AmigaDos 2.0.



Grab the blocks to squeeze or stretch text or graphics overscan defaults.

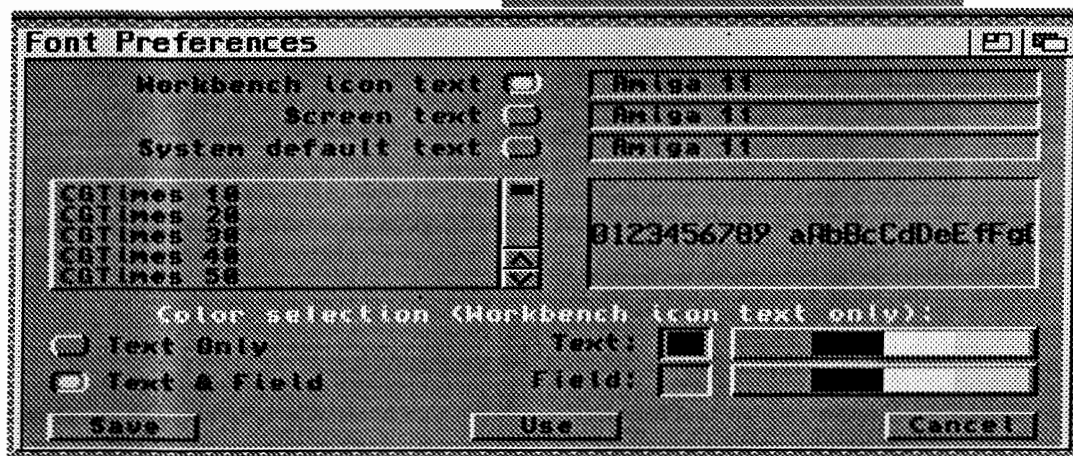
both purposes.

- Standard Workbench windows all have a Zoom gadget, which toggles the window size from large to tiny.

- Workbench will create

standard icons for files and drawers that don't have them, and the state of this setting (Show/All Files or Show/Only Icons) is stored with the window, so the system will remember it for each window you open - they all don't have to be the same.

- Selecting multiple icons is much easier, through the facility of a bounding box facility. In addition, you can remove icons from the batch thusly selected by clicking



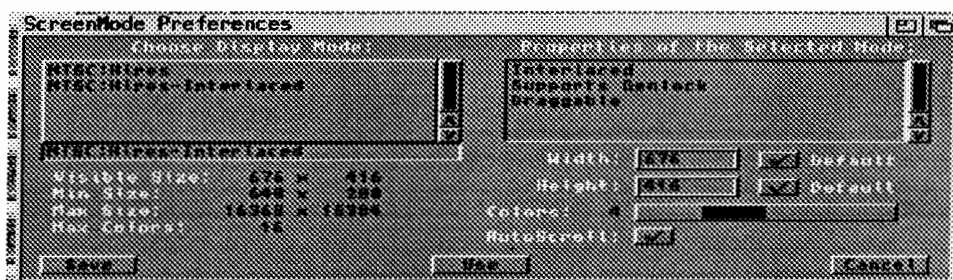
Choosing and Setting the System Fonts

However, you don't need the ECS to run AmigaDos 2.0, and it *doesn't* come with the system upgrade package.

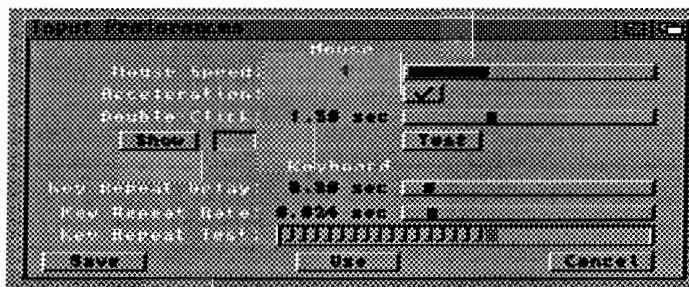
The advantages

AmigaDos Two Point Oh has been years in the making. It started off as a Real Soon Now follow-on to AmigaDos 1.3, which was touted as an interim update on the way to Something Serious. Serious, it is. AmigaDos 2.0 brings much new functionality, a vast number of new and welcome features, and a whole 'nother level of sophistication to the Amiga operating system. It solves many problem that the Amigas have had since their inception, and it does so with the obvious application of pure genius to the task. Commodore didn't pay for this rave review; this is your acerb editor's honest opinion. Here are some of the most ingenious features:

- The Amiga is now completely operable from the Workbench. You can do everything you need to do with the mouse, without resorting to cryptic commands or learning to use the infamous CLI. Programmers, shell collectors, and other masochists still have their command line interface



Choosing display modes: BELOW: Inputs



(CLI), as well, and it's even been enhanced with many new features and capabilities. You can even issue Shell commands from the Workbench, using the "Execute Command" option from the pulldown menu.

- Windows, icons, and system text can all have different, user-selectable font styling.

- Workbench and drawer windows can have user-selectable (or user-drawn, even) backgrounds, and they don't even have to be the same for

mousebuttons appropriately.

- Workbench operations can be canceled - such as movement of an icon from one place to another - by clicking the right mousebutton during the operation.

- Keyboard equivalents have been added to most Workbench functions, and the modifier key is user selectable.

- Automatic execution of programs on startup can be accomplished entirely from the Workbench through the implementation of a "WBStartup" drawer. Anything, virtually anything, you drop in this drawer will automatically be executed when the machine is booted.

- ARexx is part of the system software, and is included with the package. It's installed automatically, if

FastFileSystem can be implemented on floppydisks, slightly increasing capacity, and considerably increasing speed. (For transportability among older operating systems, however, the system wisely defaults to formatting OldFileSystem floppies. You have to tell it you want the new one.)

- The system supports special high-density (and half speed) floppydisk drives, enabling reading and writing the 1.44-megabyte non-Amiga format, as well as 1.76-megabyte AmigaDos format disks.

- A much more extensive Preferences drawer permits elaborate

up, and then returns you to the right place when you let go.

- Workbench can be closed (if there's nothing running on it), and its window can be re-sized and shuffled front to back, just like a normal window (Or it can be set to backdrop, if you prefer.).

- Disk space is calculated and displayed in the device titlebar when you open a disk's icon.

•When the Workbench window is active, available memory is displayed as “graphics” and “other.” The old display showed only total memory.

- And this just hits the high points. It's a *very* extensive change.

programs, as many people do. Your happy editor, for example, went on an updating rampage, and had to totally banish only a few programs for incompatibility with 2.0. Emulating the sage fox, he has decided that he really didn't *like* those crummy old programs, anyway. A few current versions of programs have "cosmetic" problems under 2.0, mostly a matter of not permitting the font selectability that 2.0 enables.

What's different?

Facelift city. The new Amiga operating system looks much different.

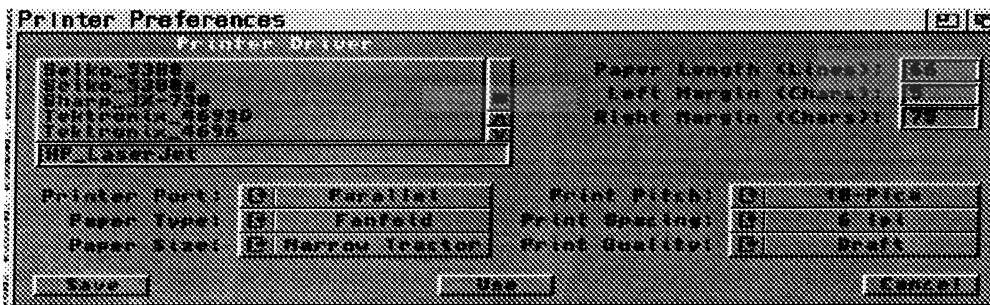
For one thing, it looks like

somebody had at it with a raytracer.

The icons, no matter how they look under 1.3, are surrounded by a three-dimensional-looking panel that appears to punch in when you click it. It really doesn't move, of course, but it looks neat. The icons still may animate, too, in addition to the apparent motion of the 3-D-looking panel. The colors are arranged in a different order, so

icons that look great under 1.3 will either look even better or look disgusting under 2.0. There's a new icon editor (a nice one), so you can tinker with them if you want to. However, your disk-space-starved editor removed most of his icons (and netted half a megabyte of disk space into the bargain), taking advantage of the algorithmic icons that the machine now generates on the fly, every time a drawer is opened. Oh, the default icons are editable to your liking, too, but the ones provided are neat.

The window sills - okay, okay, titlebars - are solid, too. It's the next logical step. Versions 1.0 and 1.1 of the operating system had five thin lines across the top titlebar. Versions 1.2 and 1.3 changed that to three thick ones, and Version 2.0 cuts the lines out altogether. It also gets rid of the gas gauge on the left side of disk windows (The information's now in text in the titlebar, as described above), and it herds all the arrows together close to the re-sizing gadget for the windows. This is a convenience, too, since you don't have to move the mousepointer around all over the place to advance the proportional sizing gadgets. The



Printer preferences under 2.0

user configuration of system operations. The programs (there's a bunch of them) in this drawer go to great lengths to be friendly, too, permitting previewing, testing, and even undo-ing of the choices as you make them. The fonts selection program, for example, displays the font you've picked, so you can see what it looks like.

- Scalable, CompuGraphic font technology at the system level, complete with programs to make bitmapped fonts if you want them, and background generation of fonts for use by programs that support the fonts correctly.

•Workbench can be a superbitmap screen larger than available display space. You can park icons off the screen, if you want to, and get over to them just by nudging the edge of the screen with the mousepointer (if you have the Workbench configured this way). Also, if you're working in a part of the Workbench screen that's not being displayed and access the pulldown menus, the system blinks the screen to the right place while the menus light

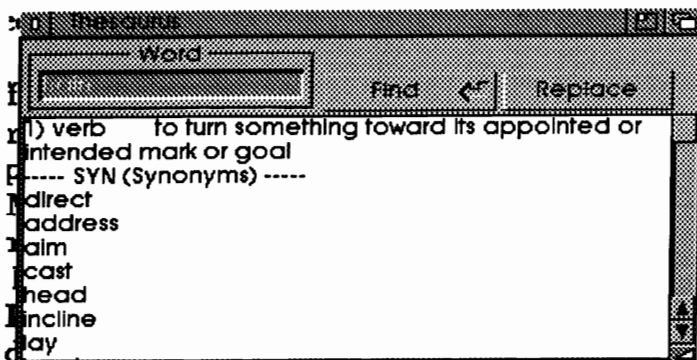
Compatibility

After being on the market in Amiga 3000's for nearly two years, you'd think that by now, everything would work under 2.0 and there'd be no problem. That is not the case, although the roster of products that have problems is quite small, and, indeed, so are most of the problems. Perhaps one reason the products still have difficulty is that AmigaDos 2.0 has been a moving target for all these months. The version just now released as AmigaDOS 2.0 for non-3000's is considerably different from the one supplied initially (and even currently) for Amiga 3000's. (Nice of those Amiga 3000 owners to betatest for us, eh?) At this writing, too, 3000's still have no AmigaDos 2.04 Rom chip. They must run the operating system from memory. The chip to fix this problem has not yet been shipped, though the software has. Most of the good stuff, however, has suffered along with the changing system, and does work without a hitch under AmigaDos 2.0. If you install the new operating system in your computer, you can expect to do some updating if you have old versions of

odd-shaped graphics. Your picture of the sleeping cat has lots of white space around the cat's tail? Watch the magic as Final Copy slaps text over the background area of the picture, till it looks for all the world like you spent hours cutting and pasting it around the

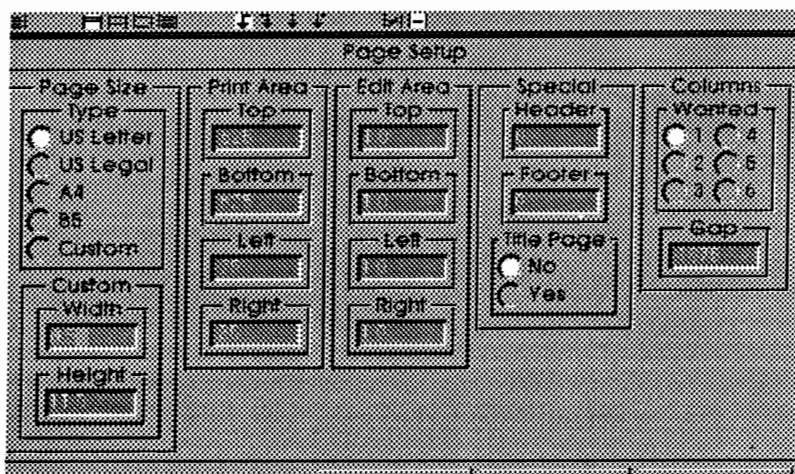
that program will work seamlessly with Final Copy. Another rather odd situation, but lately things are strange all over.

Squish and spread



Final Copy's thesaurus: BELOW: Page Setup

cat. You can specify varying reproduction and screen display parameters for each picture you place in the text, including the stand off amount (how far the intruding text comes from the edges of the picture). The program will wrap text the normal,



square way, too, and it'll automatically put a line around the picture, if you want one. It doesn't permit drawing lines and other graphic primitives into the page, like Softwood's other wordprocessor, Pen Pal. Indeed, compared to Pen Pal, Final Copy is sleek and simple, without the insistent hand-holding, the blinking busy pointer, and the database management software. The program comes with an extensive spelling facility, one of the nicest on the Amiga, since it checks for things that other spellers don't even consider, and it has a built-in thesaurus, based on a different technology from the Electric Thesaurus, but quite nice and informative, debatably better than the Electric one in some respects.

Users of Proper Grammar must wait for an update (Send in both registration cards, and it's free.) before

through widening the font, rather than using up space vertically in making it larger. Extended-width fonts are also quite attractive, either in plain or Roman faces, and they *do* command attention. Final Copy is unique (so far) among the wordprocessors in permitting widening the characters, although ProWrite (version 3.2) supports scalable font technology. Even among Amiga page layout programs, where "scalable" is the stock in trade, widening is a scarcity. All this raving and carrying on has to be tempered, nevertheless, with the page layout facilities that Final Copy doesn't have (nor any of its competitors). These include adjustment of letterspacing or "tracking," which is the amount of space between the characters, and placement of line-widths of more than one column-width on a page. Say you're doing a flyer for the cat show,

The scalable text in Final Copy provides adjustment of both the width and the height of your text, to suit your purposes - say, to make a given amount of text fit into a finite amount of space on a page, or for emphasis of lines of type

and you want a picture of your cat, some text, and a headline across the top to start it off. Everything but the headline is a breeze. Since the headline'd go across all of the columns of type, the flyer's a job for a page layout program. To force Final Copy to deliver the goods (and apply its considerable talents to rendering the pictures nicely into halftones for reproduction), you'd have to create the headline in a paint program and bring it in as a graphic. Of course, this workaround would also give you the opportunity to apply one of the colorfonts to it, for a nice, chromed look, but that's beside the point.

Another fine point that differentiates Final Copy from the page layout programs is that most of the text controls - like inter-line spacing - apply to all of the text in the document or paragraph. Some of the fancier page layout programs deal with these esoteric items character by character, or at least line by line, for copyfitting and typography. Don't fault Final Copy for leaving this out, however. It's a wordprocessor, remember, that acts like a page layout program. For professional purposes, it's definitely an act. But then, so are the rest of the page-layout-oriented wordprocessors in the Amiga marketplace.

Color

Final Copy has no provision for coloring text, if you wanted to do that. It does support color pictures, but limits all text to black. The color pictures will show in color on the screen if you turn that option on, and they'll print to color printers, if you attach a color printer. Postscript support is built into the program, too, and one element of that support is Color Postscript, which, of course, makes Color Postscript printers spit out color documents. Lovely. The program doesn't download its default font ("SoftSerif") to a Postscript printer, so you need to select one of the other, structured fonts included with the program, if you do documents intended for Postscript output. The font collection is succinctly named. A, B, C,

P, and S are examples. If you work at it, you can find a *lot* of similarities (to understate the situation to the max) between the P font and the Adobe font Palatino. The others have parallel equivalents, too. See, the rule in the font business is that the name of the fonts are sacred, not the designs. Odd, eh? Your font-crazed editor's choice for this magazine is Bookman, one of the Adobe fonts in most Postscript devices by default. This font design is known more laconically as B in the Final Copy font equivalency Olympics. Oh, how much simpler life would be if. . . well, nevermind. The program does not honor the new Amiga scalable font technology, so if what you get with the program isn't enough, you'll have to wait till Softwood or some other company puts out additional font packages, or adds support for the new Amiga native scalable fonts.

One of the nice things about the program is its configuration and setup menus, which permit setting the program up the way you want it, and storing that as the default for the next time it's cranked up. Many more programs, especially the more complicated ones, should pay attention to this feature. Maybe lots of Amiga owners are still using floppies, but the ones that aren't shouldn't have to suffer the inane path defaults of a floppy system. Although Final Copy's configuration goes a long way in this respect, it leaves a few items out, and its setup options are scattered around in various places. A single, run-one-time program would be better. The program should take in all the default paths and such, and then create a configuration file in "S:" to be loaded in next run time. Any Gold Disk (among others) programmers who might happen to be reading this should be taking voluminous notes.

Publishing newsletters

Soft-Logik Publishing, makers of PageStream, have a new newsletter, too. It's actually an old newsletter, all spruced up and revamped, and published with the help of their own

software products. The recent issues have embarked on series of articles on font technologies, output devices, and telecommunication techniques for accessing the company's electronic help line. The newsletter, DTP World, can be had from Soft-Logik Publishing Corporation, 11131 S. Towne Sq., Suite F, St. Louis, MO 63123.



Kitchen metaphors

Except perhaps for the garbage disposer, all the good kitchen appliance names are already taken up by Amiga video contraptions, building on the rich heritage of kitchen punnage cooked up with NewTek's Video Toaster. So, inevitably, the video contraption business turns to food, a natural extension of the kitchen metaphor, for its imaginative contraption names. Witness, therefore, the introduction of the DQ-Taco. Yummy, yummy. This little frijole is a "Toaster Animation Controller," a board that goes inside the Amigas to perform single-frame control of video tape decks. It parks neatly in the Video Peripheral Expansion Buss of the Amigas, too, so as not to hog an Amiga slot. The VPEB, as your wry editor likes to call it, is also known as the Ms-Dos expansion Buss, and it doesn't include, or even sit close to, the one, lone, cherished Video Slot of the Amigas, which is - in the case of the Video Toasterized Amigas - not up for grabs, anyway.

DQ-Taco is by DiaQuest. That accounts for the "D" and the "Q." What you do with it is, you connect it to the

serial control ports of editing video recording decks ("VTR's" in the trade), and then when you initiate a frame store to *tape* in your software on the Amiga, the video deck backtracks, fires up, records, and waits for the signal to do it all again. With a fancy enough recording deck, you can do single-frame video animation. Other applications include video editing of various kinds, such as AB roll. Frosted

Danish roll is yet to come. And frame accurate digitizing, for those times when you really want to grab the *exact* frame of video.

The device has SMPTE and EBU time code (EBU is the European one) built in, and supports programmable editing and digitizing sequences. If you're making videos and have harddisk space aplenty, you can do some neat effects by digitizing whole sections of video, manipulating the digitized frames individually, and then putting them back together with single-frame recording. This technique is exemplified by the Todd

Rundgren *Change Myself* video, produced on Toasters by digitizing every frame of the live video sequences, and then putting the whole thing back together frame by frame, with much toasting in the process. The new DQ-Taco board, along with its optional Action Animator software, facilitates this technique for such purposes as rotoscoping and compositing.

The DQ-Taco autoconfigures itself to most video recorders, too. It's compatible with a variety of videotape format recorders, including three-quarter-inch, SVhs (Panasonic's AG7750 deck), half-inch Component, one-inch Type C, digital units and laser videodiscs. The compatibility list is a rapidly changing critter, so call the company for the current list of specific units, model numbers, and luncheon menus. (DiaQuest's phone number is 415-526-7167).

Video Director - Gold Disk

DiaQuest and BCD, which makes a competing product to go inside an Amiga computer, aren't the only people bringing the cost of automated video

wait pointer is now a clock. Big deal. No, it doesn't tell time, it just follows a silly tradition in the computer business of *reminding* you that the computer is using up valuable time to do something. It might as well play commercials for 68030 accelerator boards and faster harddisk drives.

The menu system

Stuff gets renemaed again. This time, the changes seem more logical. For one thing, Delete is now *called* delete, instead of Discard, and formatting a disk is accomplished with a pulldown menu (or commandline entry) called "Format Disk," not "Initialize." The trashcan has a new look, but nothing to write home (or Cupertino) about, and you can still empty the trash - i.e., get rid of whatever's in the Amiga trashcan - from the pulldown menu. The menus are, however, jumbled around, and there are lots more of them. The menus are:

- Workbench

- Backdrop: sets Workbench back to *not* front/back shufflable
- Execute Command. . . :

Brings up a text string requester and attempts to execute as a system command anything you type into it. It opens an output window, if necessary, to report any feedback from the command (such as a directory of a disk or an error message), which you must close manually by clicking its close box. The text requester goes away when you hit the <RETURN> key, and execution begins.

- Redraw All:
- Update All: These redraw and update the display, if needed.
- Last Message: This was called Last Error last OS. It's the same thing.
- About. . . : States the version numbers for Kickstart and Workbench, and plugs Commodore's copyrights on them.

- Quit: Terminates the Workbench, but only if there's nothing running from it. That counts background tasks run in the WBStartup drawer and any of the

Commodities (ScreenBlanker, etc.) that might be running.

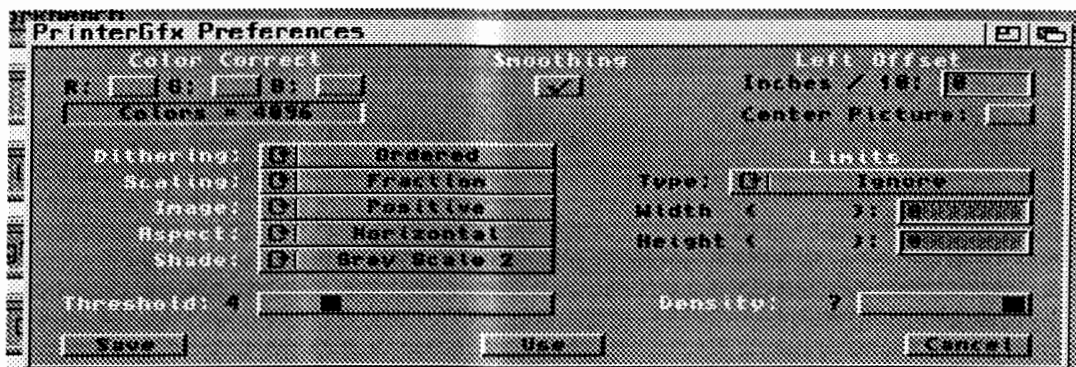
- Window

- New Drawer: Replaces the EMPTY drawer icon of earlier versions of AmigaDOS. Select this, and the

- Show

- > Only Icons

- > All Files: Yep. It's just what it looks like it is. Makes the window show all files, even if some of the files or drawers don't have icons.



Graphics Preferences

The machine makes generic-looking icons on the fly for any files that don't have custom ones. The machine-made icons are of several types, too. The drawer one, for example, looks like a drawer.

- View By

- > Icon

- > Name

- > Date

- > Size: This powerful new

feature lets you use the mouse to select, launch, or move files and programs around, even though the display is showing a textual object, not an icon - meaning the *name* of the file. View By/Icon is the regular, normal, Amiga way. Windows full of icons. Changing the view mode to *Name* puts up a text listing of what's in the directory or disk, and if you also set Show/All Files, you'll see things that don't even have icon files associated with them. View By/Date and /Size are both also text listings, but they're sorted in the window according to (guess. . .) file creation date or file size. This makes this information available from the Amiga Workbench for the first time, and since most Amiga programs have ignored creation dates in their file requesters, it makes the information accessible, period, unless you labored to learn the CLI.

- Icons

- Open: Same thing as a doubleclick. Opens a drawer, disk, or program.

machine not only makes a drawer and an icon for it, but automatically puts up a Rename requester, so you can change it from "Unnamed1," if you want.

- Open Parent: Opens the drawer that the currently active one is stored in. *Wonderful*, if you've closed the forty-three other windows in the hierarchy to get to the one you're working in, only to find that you need something from the one before. A very thoughtful addition.

- Close: Same thing as clicking the close gadget in the corner of the window.

- Update: Gets new information for the window; programs can write to the disk while the window's open.

- Select Contents: Makes every file in the window think you've shift-clicked it with the left mousebutton, even if the files aren't visible in the portion of the window that shows on the screen.

- Clean Up: Same as always, but the function has a new algorithm that takes the text underneath icons into consideration in arranging the icons. A much more intelligent, and useful, function.

- Snapshot

- > Window

- > All: This feature stores the size, icon position, and all other information, including the Show and View By preferences, for the window, or for All, meaning the window and all of its contents.

- Copy: Duplicates a drawer, file, whatever.

- Rename: Changes the name of something, either disk, drawer, or file. This no longer puts a wide band across the center of the screen, but opens a sedate requester in the corner.

- Information: Same as the Info menu option under earlier versions of AmigaDOS, but spelled out, this time. This provides basic "information" (for lack of a better word) about how large a file or program is, what its attributes are (deleteable or not, for example), and what program runs it, in the case of data files created by other programs. The new version of Information displays the file's icon, for good measure. The Information window displays the possibilities for file "attributes" in the corner, with a convenient check-off option. Those "flags" to the Amiga operating system can be used easily to exclude a file from deleteability, for example, or announce whether it's been changed (the "archive" one), etc. The flags are Read, Write, Execute, Delete, Archive, and Script. If the Script flag is set, the machine will attempt to execute the contents of the file as though it were an AmigaDOS script - like the startup-sequences, for example. The options aren't new, just the ease of dealing with them in the Information window.

- Snapshot: Same as it's always been; works the same way.

- UnSnapshot: New and nice. If you unsnapshot the contents of a window, the machine will sort the icons when it puts them up, and automatically "clean up" the arrangement. The placement won't necessarily be the same every time, however.

- Leave Out: This one is way cool. You park an icon on the Workbench screen, select it, and then pull down Leave Out. After that, the icon will reappear on the Workbench screen. You can even Snapshot it, to make it come up in the same place each time. This is more of an annoyance than a benefit on floppy-based systems, but it can get some disk-swappage out of the way on bootup, if that's a benefit to you.

- Put Away: Puts stuff back where you got it, without troubling you

to go clicking through the drawers. If Leave Out is making you supply a disk volume on bootup, Put Away will solve the problem.

- Delete: Nuff said.

- Format Disk: Does what it says it does. This was called "Initialize" under earlier versions. It's the same thing by a more common name. The CLI command has always been "Format."

- Empty Trash: Gets rid of the contents of the Trashcan drawer. Stuff you put there isn't actually *gone* till you use this pulldown menu item.

•Tools: This is a new feature of AmigaDOS 2.0 where specially written programs can be installed to be Workbench-accessible.

A few quibbles

Nice as it is, there are a few small matters in AmigaDOS 2.0 that bear calling attention to. These aren't bugs. For one thing, Show All Files and By Name does not display system files such as the actual .info files in which such information is stored on disk. Manipulating these is still a job for CLI. However, there'd be little reason to manipulate them under most normal circumstances. Another minor trouble is that the icons that the machine makes cannot be snapshotted to appear where you want them to. Their position in the window can be controlled only by filling up all of the space, herding them into one section of the window.

The guru is gone. Your humorist editor *liked* the guru. The good news is that the system crashes much less frequently, so the guru wouldn't get the workout he's accustomed to. AmigaDOS 2.0 is *supposed* to trap program errors and make "recoverable" errors out of what would have previously brought down the whole system. This is, however, not the case. All the so-called recoverable errors your chagrined editor has seen have required a reboot. Some of this might iron out, eventually, as the software companies update their programs more.

Things that changed

The most extensive changes are in the Preferences section. The single Preferences program has been replaced by a whole kit of programs that adjust individual elements of the system. Expect to spend a while when you get your 2.0 going, marveling at these programs, and playing with the multitudinous options you have to choose from. Don't forget to pull down the menus, too. Many of these programs have options in the pulldown menus, and many can save and load the results of your efforts.

KeyToy is KeyShow, under 2.0. It's just about as useless, but has a new name. Palette has become Colors. Big deal. The Clock has a new look, but lost one of its digital options. HDToolbox provides utilities for dealing with harddisk drives - and nice ones, too. The printer configuration section of Preferences is now two programs, one to deal with graphics printing ("PrinterGfx") and the other ("Printer") to set up just the basic printing parameters, like printer driver, page width, etc.

Other goodbyes

AmigaBASIC is a gone goose. You can buy it separately, so says the manual. The problem is that it doesn't work under 2.0. Not to worry, the new operating system comes with ARexx, and it's better, anyway.

Notepad's a goner, too. Good riddance, actually. The new version of ED, which has mouse support, a file requester, pulldown menus, and other niceties is a reasonable replacement, but, of course, it doesn't handle fonts, like Notepad did.

FE'd's gone. That was the semi-neat font editor that appeared with AmigaDOS 1.3. The new operating system supplies no font editor. Same old fonts as always, too, except for the addition of the scalable ones.

FastMemFirst and a few other similarly named utilities aren't needed anymore, so they're gone, too.

New things

There are *many* new things in AmigaDOS 2.0. The biggest one of

rhythm, Select, which offers a list of existing rhythms to choose from, and Remove, which deletes a rhythm. Don't choose Select unless you want to overwrite one of the existing rhythms. Let's choose Add. At this point, the window informs you that a new rhythm of zero length has been created and given a boring name like Rhythm #1. You will probably want to click on the name and change it to something more descriptive, like "Viennese Waltz" or

Place the Rhythm in the track

Now that we have defined a rhythm, it is time to place it in a track. Make sure you are still in the Sequence Editor. Since we want to write new information into the track, turn your mousepointer into a pencil. Click on the rhythm line; a small window appears offering a scrolling list of rhythm patterns. Holding down the mouse button, highlight the name of

preset changes or dynamics.

Bars&Pipes processes everything in the track right along with the rhythm; you can even add notes to the same track, right on top of the rhythm. I don't usually do this; instead, I open another track with the same instrument. Not only is this neater, it allows me to control dynamics and balance independent of the rhythm.

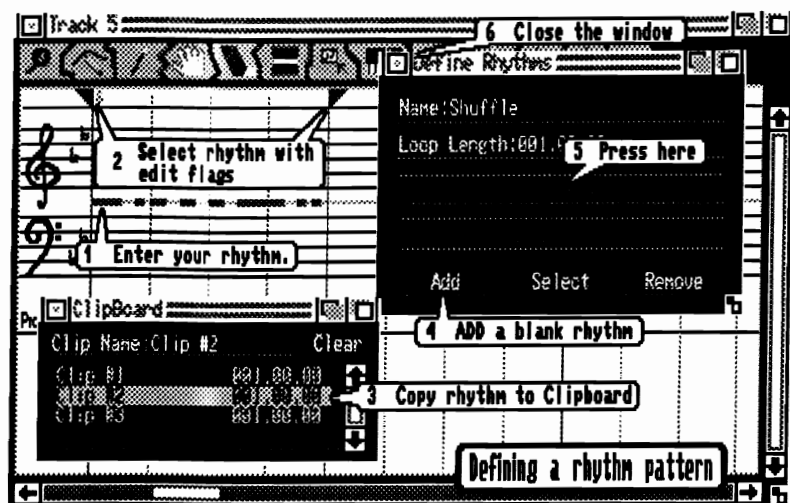
Have you fallen in love with one of your rhythm clips? Maybe it's just too much trouble to enter the same clip again in another song. If so, you can save your rhythm pattern to disk. Just open the Define Rhythm window, and select Save Rhythm from the menu bar.

Enter the Chord Progression

Now Bars&Pipes knows the beat of the Funky Boogaloo, but not which chords to use. To enter a chord, click on the Chord line. Windows pop up, allowing you to enter a chord. (Does any of this sound familiar?) The first window contains a tiny keyboard; click on a note to serve as the root of the chord. (The root of a C major chord is C, the root of a Bb minor seventh is Bb,

etc.) After selecting the root, choose the quality of the chord (major, minor, seventh, etc.) from the list in the second window. The chord name now appears.

To save a little time and trouble, you don't have to place a chord in every measure; a chord remains in effect



The Rhythm Editor

'Funky Boogaloo,' 'Boogaloo Waltz,' maybe. To actually define a pattern, click on 'Grab Clip From Clipboard'; this copies the rhythm from the highlighted clip. Don't worry about the Loop Length; it's automatically taken from the clip.

You may also grab a pattern directly from the Sequence Editor using almost the same steps. When you select the measures to copy, however, they must be

The Sequence Editor

bracketed by the selection flags on the main screen, not the Sequence Editor. I find it a lot easier to use the Clipboard.

Unlike most of the windows in Bars&Pipes, Define Rhythm has no Okay or Cancel buttons. A new rhythm is created when you click on Add; it is defined when you Grab Clip From Clipboard. When you finish with this window, just click on the close gadget in the upper left corner.

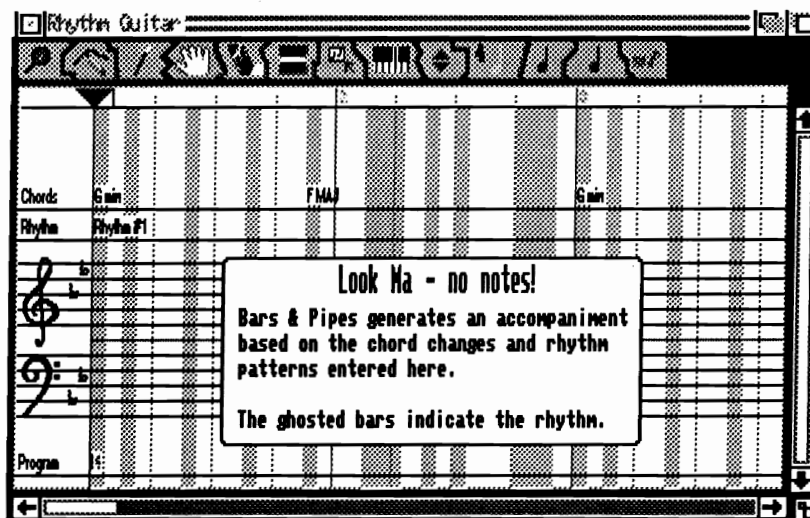
hand, magic wand, and eraser.

Do you want to view the rhythm you have created? Pull down the Display menu, highlight the Background item, and select Rhythm from the sub-menu. Shaded vertical bands will appear, running across the entire Sequence Editor window. Each band represents one note of your rhythm pattern. The bands are purely decorative; don't let them stop you from entering other information such as

until changed. The same goes for rhythms. Similarly, a measure may contain two or more chord or rhythm changes.

Playing the Accompaniment

Now that we have rhythm patterns and chord progression in place, let's return to the main screen. If you click the Play button you won't hear anything; we still have a couple of



tiny steps to go. Open the toolbox and grab the 'Accompany B' tool; it's white, with a grid of red and blue lines. If it's not present, load it from disk, using the Load option in the Toolbox menu. Drag it over to the lefthand, *input* side of the pipeline and place it in the rhythm track. This tool does all the work of translating the rhythm and chord information into sounds.

While you are on that side of the screen, click on the blue "P," for play, changing it to a red "R," for record. Don't worry about recording anything, though; it's just needed by the Accompany tool. Finally, click on the gray box following the track name; an arrow appears, pointing at the track. Now click on Play and hear your rhythm accompaniment.

Finishing touches

The steps above will play the right chords with the right beat. There are, however, a few steps you can take to make the accompaniment sound even

better. First, you might notice that the rhythm sounds just a bit mechanical. The computer plays every note at exactly the same time, far more precisely than any mere human. To add a little realism to the part, place an Unquantize tool in the righthand, or output, pipeline. This tool, blue with a wavy note, adds a tiny random offset to each note. For something like a rhythm guitar, I usually set the Unquantize tool to about 10 percent, to simulate a strumming sound.

If you notice that chords jump around, high and low, in an unguitarlike fashion, you probably need to add an Inverter tool, yellow with red arrows, to the output pipeline. This tool shifts selected notes up or down an octave, squeezing them all into a certain range.

Suppose you finish your magnum opus and save it to disk. The next day, as you start to record your demo for the Grammy Nominations Committee, you find the accompaniment does not play. *Gasp!* Don't worry; check to make

sure a red arrow following the instrument name is pointing at the track. For some reason, Bars&Pipes does not save the arrow status. Just click on the gray box to turn on the arrow, and with it, your accompaniment.

Finally, you will almost certainly notice that the accompaniment continues on, even after your song is over. Also, there seems no way to turn the accompaniment off in the middle of a song. Remember, chords and rhythms stay in effect until changed. How do we avoid the unwanted accompaniment? Create a rhythm from a clip which contains *no* notes, then insert this empty pattern wherever you want to turn off the accompaniment.

That's it. Bars and Pipes allows a musician to create professional sounding music quickly and easily. Using the Accompaniment Generator can save a lot of time, and relieve a lot of tedious, repetitive work. And as far as I'm concerned, that's what computers are all about.

New Stuff

from page 25

one, it does so at the maximum resolution the printer can manage, which generally translates into *no* jaggies. The screen's readable, too, since the fonts printed to the screen are drawn to the screen's resolution by the same scaling algorithms. On the fly. Not slow, even on an unaccelerated machine. On an accelerated one - an Amiga 3000 or a souped-up 2000 - the stuff really flies.

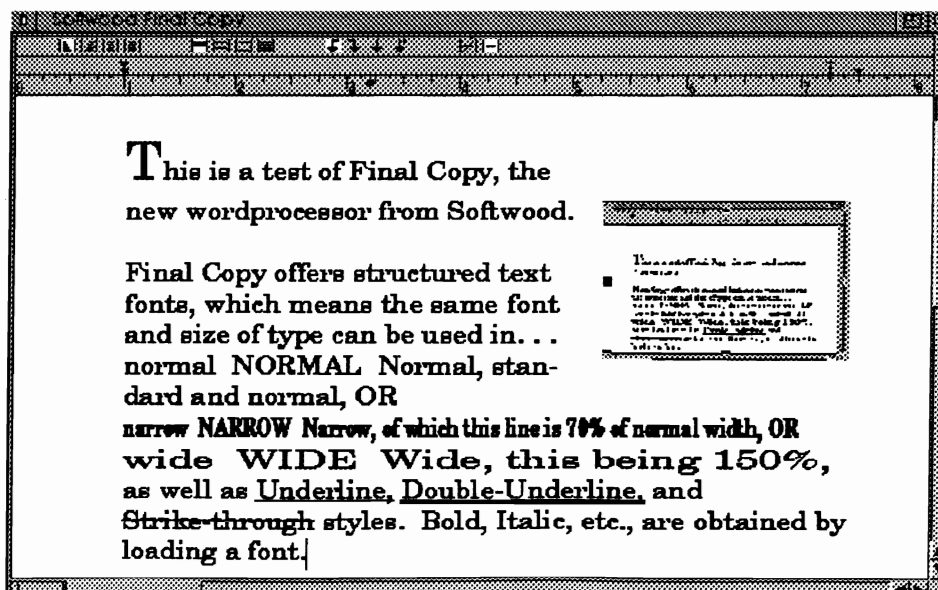
The new wordprocessor is Final Copy, by Softwood, who bring us the Electric Thesaurus and Proper Grammer. Oops. *Grammar*. The new product is a WYSIWYG. That means "What You See Is What You Get." The product tries to show in every way on the screen what you're going to get out of your printer when you print the document. Like many current wordprocessors on Amigas as well as

other computers, Final Copy follows the current fashion of implementing a considerable number of features you'd expect to find in a page layout program, not a wordprocessor. These include columnar pages, chooseable fonts and styles (which also show on the screen as they'll look on paper), and the incorporation (easy!) of pictures mixed in with the text. Final Copy's columns

are newspaper-like. They start at the top and proceed to the bottom. This type of columnar matter is good for newsletters, but not particularly useful for screen scripting, storyboarding, and the like.

In the page layout department, however, Final Copy has some other interesting features, chief among them being the ability to wrap text around

Final Copy showing off



these is Fountain, which along with the three CompuGraphic fonts supplied with the package manages the scalable font technology now included in the Amiga operating system (and not yet honored by much software). Fountain will create bitmapped fonts for you, if you want them.

Another one is the Exchange, where new doodads called "Commodities" live happily ever after. These are things like screen blankers (A freely distributable one called Spliner is the finest ever.), and a lovely little utility called ClickToFront. Some other ones are provided with the system, including AutoPoint, a Sunlike emulator which makes the window that the mousepointer is over the active window (Your picky editor hates it.), and NoCapsLock, which prevents your Amiga from behaving stupidly.

Add- and BindMonitor appear to be present for future purposes, if ever those purposes get realized at the present state of uninspiring progress.

HDBackup, too. That backs up your harddrive. It's very slow, but it works. The BRU (Backup Restore Utility) on which HDBackup is an interface, backs up to tape drives, too. Minimalist, but functional.

Other things

There are lots of enhancements to the AmigaDOS shell, some of which are intended to make life easier for creating scripts that automate repetitive processes, fire up programs, etc. Lots of other things have been incorporated into the system software (e.g., the FastFileSystem), and aren't on disk anymore. These things are best left for further study after you get the system running. The documentation for all of this is extensive - it weighs several pounds - another new thrill for Amiga operating systems. By the way, the official name of the product is "Amiga Release 2."

Installing 2.0

Okay, that's the what, now the how. To install AmigaDOS 2.0 on your machine, you should take these steps, in this order:

1. Backup *all* of your harddisks. Safety, mainly.

2. Install, or have a dealer install, the new Rom chip. Integrated circuits ("chips") are very sensitive to static electricity, and should be handled only by people who know how to do it. Moreover, on Amiga 2000's, the socket for the Rom chip is *under* the drive bays, and it's no easy task to get to the sucker. Install the Enhanced Denise, if you have it, at this point, too, since the machine's already open, but she can be added later without any problem, expect re-opening the machine.

3. Boot the system from a cold start on the 2.0 *floppy* Workbench disk.

4. Reformat at least your main, system harddisk under the new FastFileSystem. You don't *have* to do this, but it's a good idea, and you won't get the benefit of the faster file system unless you do.

5. Run the Install utility included with the package. Yes, it's *that* simple. Formatting the harddrive beforehand makes this process foolproof, too.

6. Reboot the machine on the new operating system.

7. Restore your programs and data, being very careful not to overwrite anything. For safety, it's best to re-install programs, rather than just restoring them from a harddrive backup utility.

8. Carefully edit the startup-sequence (the file `s:startupii` is no longer used) or, preferably the `s:user-startup` file to implement your custom assigns, etc. for all of your programs. Be careful in this to eliminate all references to things no longer used in AmigaDOS 2.0 - such as `l:shell-seg`, `l:fastfilesystem`, `c:FF`, etc.

9. Enjoy. This step could last for years.

Precautions

To avoid trouble, it's a good idea to test-run all of your programs under AmigaDOS 2.0, to see whether you need to check into updates (or new programs). This way, you'll know what to expect, and won't get caught in a crash when you can least afford it (That's the only time crashes occur, under all operating systems, not just the Amigas').

Note that these directions do not apply to Amiga 3000's. The version of the Rom chip to be shipped for 3000's

will be different from the one supplied for use in other Amigas. No word on why. Or when.

Why not to change

There are reasons you'd want to stick with AmigaDOS 1.3 in your Amigas. One of the main ones is the Video Toaster. Ol' V-T doesn't work under AmigaDOS 2.0, unless you also update your Toaster software to Toaster Software 2.0. This is a four-hundred-dollar proposition, if you bought your Toaster before NewTek began bundling upgrade coupons with the newly higher-priced Toasters. Running the Toaster under AmigaDOS 2.0 requires the Toaster 2.0 software, and the new Denise chip. It's an expensive changeover. Running the Toaster in an Amiga 3000, however, is somewhat simpler, since 3000's already have the new Denise.

Another reason not to change is if the software you depend on doesn't work under the new operating system. Several name-brand titling products are in this boat.

One solution to these dilemma, however, is to slap in one of the boards that permit having both Rom chips in the machine at once. DKB's MultiStart board toggles between operating systems. You just hold down the reboot keys (Control-Amiga-Amiga) for five seconds, and the booting is toggled to the next Rom chip in line (The board holds three of them). Doing this imposes some confusion and complexity on the software side, since the machine has to have a complete set of commands, scripts, devices, etc., available to it for each of the operating systems. You can solve this problem by skillful (and tricky) editing of the startup-sequence, or you can just boot one or the other of the operating systems from a floppy when you need it.

The latter method is the easy way.

J:

New Stuff

from page 7

Other codes

In addition to the postal barcodes - which are wierd ones in the barcode business - BarProA does ten other barcode types ("symbolologies," they're called), including the most vanilla "Code 39" one that you'd have to have if you're applying barcodes for use in many automated warehousing operations. The others all sort of look like the familiar Universal Product Code ("UPC") ones that the lasers zap at high-tech supermarket checkouts these days. Different ones honor different characters, like letters and numbers, numbers only, etc., for different purposes. You can even barcode the Amiga's computer commands, and zap them back into the system with the handheld pen scanner. Why you'd do this is quite a puzzle to your befuddled editor, but you *could* do this if you wanted to.

Anyway, the program lets you swap what kind of code it makes with the ease of a pulldown menu. Or, you can conduct a search on the Amiga keyboard for the right combination of keys to do the same thing. Save the codes, in any case, as Amiga-standard IFF pictures, or output them to any printer supported by the system (Obviously, higher resolution printers will do better-looking, and probably more functional, barcode printouts). Output can include the code only, or

the code plus a text translation of the code. This might be useful if your eyeballs don't read barcodes, and the codes contain product names or other information that isn't otherwise available.

BarProA recommends using Code39 barcodes (That's the most vanilla one) for products you ship to the U.S. Department of Defense. Air express companies will want Codabar barcodes, as will many libraries and blood banks. If you're setting up a system to use in your company - for warehouse management, for example - pick a system that supports the type of information you need to encode. All of the barcode types support numbers. Code39 permits 43 characters in medium density. Code39Ascii supports a full 128 characters, however, so if you need to encode lots of textual information, it might be just the ticket. The program's manual has more advice on choosing a system to use. Here's a distillation of some of it.

(See chart, inset)

BarProA, the software, generates all of these. The hardware that MegageM sells, BarProB, doesn't read Code93Ascii or Postal barcodes. It reads and decodes all of the others, however. You can buy the software separately, or with the magic wand. The company provides carriage-return and "quit" barcodes, so you can control your software with the wand, if you need to. The software is fully ARExx-savvy, so you can do anything

you want to in the Amiga by waving the wand over the appropriate barcode - with a little ARExx programming work under your belt.

If you're going to print your barcodes using a dotmatrix printer of uninspiring resolution, better stick to the lower resolution codes. The company reports that printers with 24 pins, laserprinters, and Deskjets print the codes just fine for higher density codes to work reliably. Laserprinters, too, of course.

Now, if only the Post Office could develop a system for getting mail from place to place without physically hauling low-tech pieces of paper around the countryside. . . no, wait, such a system already exists; it's called the Fax Machine. And electronic mail. And the telephone!

Draw-4D-Pro updated

Adspec programming is shipping version 1.1 of Draw-4D-Pro, a 3-D rendering package, which implements the new AmigaDOS 2.0 look and "feel," as well as adding some features and functionality, into the bargain. In addition to the new look, the program sports several new features and additions:

- Full 24-bit background pictures. You can load up a 24-bit Amiga picture as a background. No need to bother keeping the files separate, even, the program figures it out automatically and doesn't discriminate among 24-bit or other-bit pictures that you tell it to

Bar Code Types and Attributes

Code Type	# Chars.	Density	Security	Characters
Code39	43	medium	good	0-9, A-Z caps only, punctuation
Code39Ascii	128	low to medium	good	All 128 Ascii characters except Nul
Code93	47	medium very	good	0-9, A-Z caps only, punctuation
Code93Ascii	128	low to medium	very good	All 128 Ascii characters except Nul
Code 25	10	low	good	0-9
Code 25Intlv	10	high	good	0-9
Code 128A	95	high	very good	0-9, A-Z caps only, punct., and Ascii control char's
Code 128B	96	high	very good	0-9, A-Z, a-z, punctuation, ', and DEL
Code 128C	100	high	very good	00 to 99 numbers in pairs
Codabar	20	medium	good	0-9, A, B, C, D, and some punctuation
Postal	10	wierd	wierd	0-9 only, hyphen permissible in 9-digit Zips

Source: MegageM

'I've Gotten Rhythm'

Musical plumbing

with Bars&Pipes

by John Thompson

How do you approach a new program? Some people read the manual and work through the tutorials step by step. I, on the other hand, dive right in, trying all the buttons and switches just to see what happens. I can always look in the manual later; after I play with the program for awhile, the documentation usually makes more sense. Many times, I find I don't need the manual at all. Sometimes, however, I overlook features that are less than obvious. When someone mentioned Bars&Pipes' accompaniment generator, my first thought was, "What accompaniment generator?" A bit of study, however, soon revealed a powerful feature I had missed.

What does this accompaniment generator do? Just feed it a chord progression and a background rhythm; Bars&Pipes will slavishly pound out the appropriate chords in the rhythm indicated. This is exactly the type of part played by, say, a rhythm guitar, strumming along in the background of about ninety percent of all rock music. Why not just enter the specific

notes? Time, mainly. I hate to spend an hour entering dull, repetitious chords note by note. Also, since my keyboard skills are, let us say, less than perfect, it's easier for me to choose 'F#min7' from a menu than it is to play the notes. . . and fix all the mistakes.

How could I miss such a useful feature? It was easy. To use the rhythm generator, you first have to set things up in several different places. It's not a difficult feature to use, but all the pieces have to be in place.

Define a rhythm

Bars&Pipes isn't psychic; it can't play a rhythm if you don't give it one to play. Pick an empty track and doubleclick to bring up the sequence

editing window. Pull down the Show menu and select Rhythm and Chords; the accompaniment generator needs this information to operate. Both lines will appear above the staff. While you're setting things up, move to the Preferences menu and select Clipboard ON.

Now, enter your rhythm pattern. Just place the notes with the pencil, or play the part in from the keyboard; the pitches don't matter, just the rhythm. Listen to the pattern, especially the length of the notes. The time to be fussy is now, *before* you copy it a hundred times all through your song. Bracket your pattern with the selection flags, the same purple triangles used for all cut and paste editing, and select Copy, either from the Edit menu or by

pressing *Amiga-C*. Now the Clipboard contains a copy of the bracketed notes. If you plan on using several rhythms, you might want to copy them all into the clipboard now.

Pull down the Define menu and choose Rhythms; the Define Rhythm window appears. Three buttons at the bottom allow you to Add, which creates a blank

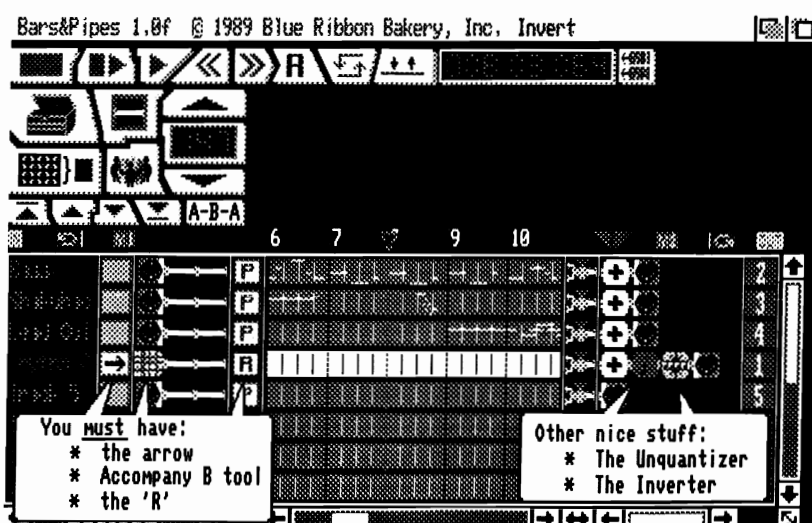


Figure 1

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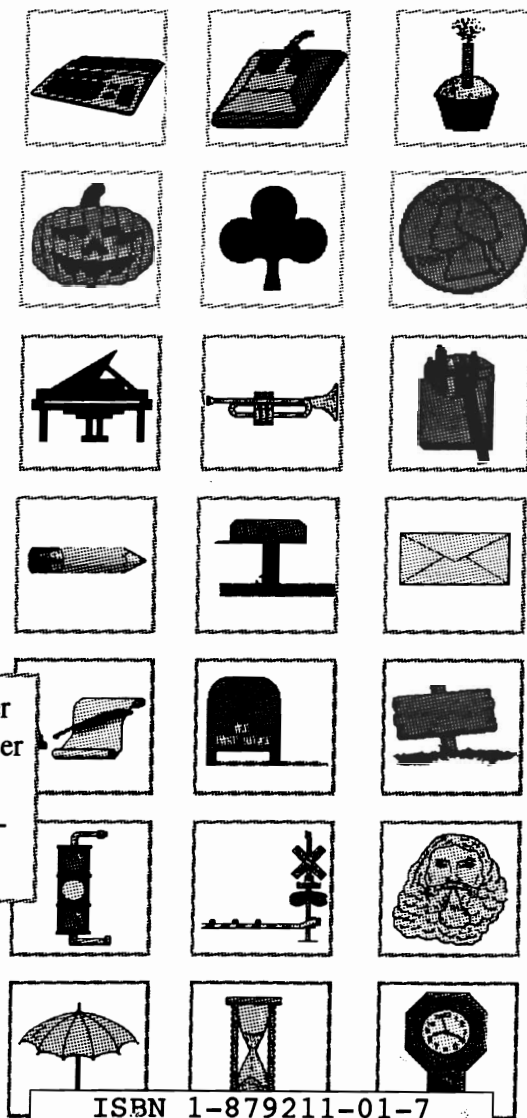


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load. Draw4D-Pro figures out a way to display the picture to the screen display you're using, too. If you render your animation to a less-than-24-bit (or DCTV) screen resolution, the program will convert it, happily, but you'd be better off if you used some other product to reduce the resolution of the 24-bit picture to whatever you're going to render in. That way, you go through the scaling process only once, instead of *for each frame* of the animation. The 24-bit backgrounds can be faded, too. However, the company recommends doing this only to animations which will be single-framed, since the Anim files for such a feat can become incredibly huge and slow to play. Objects faded into the background (That is, the background itself doesn't fade, just the objects in front of it) work fine over 24-bit backgrounds, and don't tax the Anim format much.

- A new Isometric gadget near the top of the screen so you can tell at a glance whether you're working in Isometric or Perspective views. Multiple spaces retain their own Isometric switch, so when you're flipping through, the gadget will tell you what's what, as you go. Isometric view is toggled with the F-7 key, still.

- The <TAB> key lets you add points to any existing polygon, just as though you were doing your work in freehand mode. <ALT> a still does this without going into the freehand mode. None of this works on bitmapped or shaded polygons, though. You have to free them first.

- When animation creation is interrupted, the program no longer adds an incomplete frame as the last frame in an animation. This isn't a new feature, it's a repair.

- A new script facility permits you to set up a command script to be executed during animation rendering and saving. Draw4D-Pro looks in the S: directory for a script named "d4dproF1", and if it finds it, it executes any commands in the script before it does anything else. Using this new facility, you can send frames to a single frame recorder, or convert them automatically to some other format, such as DCTV. In a machine machine with a large memory, you can save the frames to memory, perform whatever operations on them you need done, and

then get rid of them before doing the next frame. The program automatically goes into single frame mode when this option is invoked.

- The program checks for existing files, before writing animations to disk.

- Animations can be generated backward, as well as forward. The program preserves the frame numbers, either way. When generating backward animations, the frame numbers are the same, but stored in descending numerical order.

- Shift Extrude. This new extrusion tool allows you to extrude objects between any two polygons that have the same number of points. It's called "Shift Extrude" because that's how you make it work. Hold down the <Shift> key and select the extrude tool with the mouse. The tool permits complex shapes to be built of simple ones. You can make snakes, or airplanes, or whatever else. The company cautions against getting too slaphappy with this new feature, as it has the power to tax (i.e., destroy) the patience, as well as the power to create. The trick is to avoid drastic changes between the extruded polygons, so as to avoid twisted polygons in the resulting objects.

- Mirror deforms. Now if *that* isn't a tempting topic. Time to quote the author of the program, Greg Gorby:

If you use the mirror tool on polys that have deforms, you will now get a requester asking 'Mirror Deforms? (no undo).' If you allow the deforms to mirror, then UNDO, the deforms will stay mirrored. . . Extremely interesting animations can be made by mirroring the polys, but not the deforms. During the animation, the objects will flatten out to a single plane or point, and then will pass through themselves to the mirror position!

By way of explanation, deforms are deformations applied to the polygons as part of the object creation process. If you don't understand this, don't feel bad. Your confused editor doesn't understand it, either.

More Draw4D-Pro fonts

Adspec is selling a quarterly newsletter to registered owners of the Draw4D products that goes right down to the nitty gritty of the programs'

workings. The copy's well written, even; your perspiring editor is jealous. The newsletter deals thoroughly with the specifics of doing things with the program, as well as some of the theory and practice of 3D modeling in general. But you shouldn't buy it for that. You should buy it for the nice fonts, objects, and other neat stuff it comes with (on accompanying disks, of course). One criticism of Draw4D-Pro is that the font object structure it honors is like no other on the Amiga, not even the new scalable font system in AmigaDOS 2.0, which of course is a 2D specification, not 3D, but it's the principle that counts. In this respect, Draw4D-Pro's in the same boat (canoe?) as all of the other Amiga 3D raytracers and renderers. Enough of that. Let's hear it for *standards*, of which there are many to choose from. *Too* many, too diverse, too incompatible. Anyway, you'll no doubt eventually find font companies selling font objects to go with Draw4D-Pro, but till then, the company's newsletter comes with some nice ones to add to the sparse collection the program ships with. Buy the newsletter for the fonts and other stuff, but don't read it. Your aspiring editor can't afford to lose any readers. The name of the newsletter is (*shhhh*) *4DPro Master*. It's quarterly, and goes for thirty-six dollars a year. The address is *Adspec Programming, Box 13, Salem, OH 44460*.

Fonts on the fly

It isn't often there's a new wordprocessor to talk about on the Amiga. Not nearly often enough, in fact. It's an even bigger thrill to talk about an Amiga wordprocessor that draws all of its text on the fly, using font scaling technology. No, *not* the scalable font technology built into the new Amiga operating system, but scalable font technology licensed from somebody else. You want tiny letters, it draws them small. Big letters, it draws them as huge as your heart desires, and when it puts them all out to your printer, dotmatrix or Postscript, either

New Stuff
continues on page 32

Animating a snow storm

by R. Shamms Mortier, Ph.D.

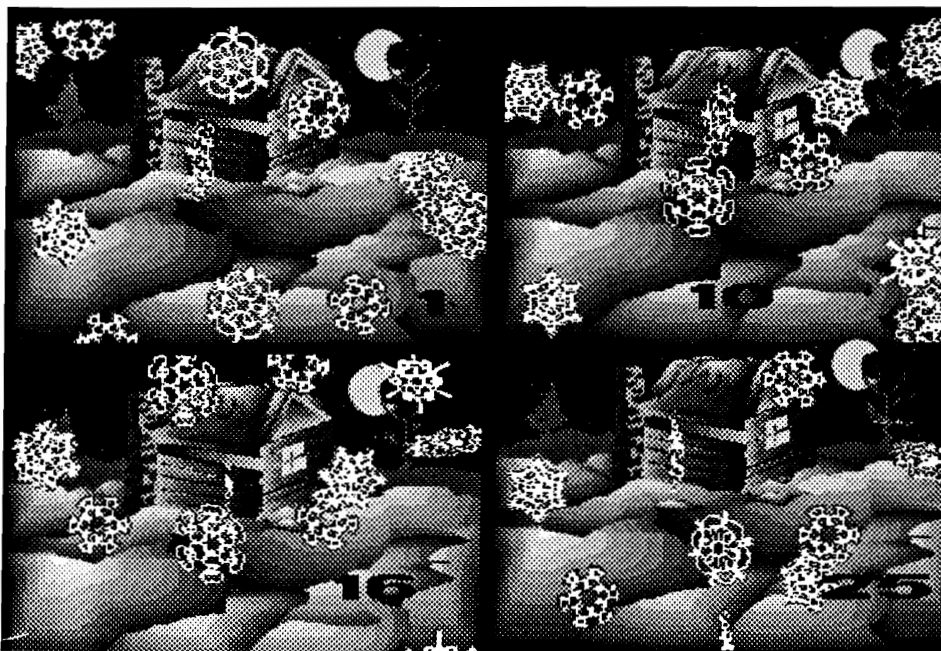


Figure 3: The finished animation

Here in Vermont we say there's "seven months of winter and five months of hard sledding." It's no accident, then, that "snow" is a topic familiar to our hearts and bodies. Vermont is, after all, the home of "Snowflake Bentley," a gentleman who at the turn of this century performed hundreds of scientific observations of snow crystals. A friend of mine lives in his old house, and has a library of his recorded efforts. We are going to create an animation in this article to keep both of them busy. This is an animation that you can just sit and watch for hours (especially if you live in the desert), or that you can use as part of your video work.

Snowflakes

The snowflake is a Hexagonal (six sided) crystalline formation that builds itself around

a dust particle in the atmosphere. We will build our snowflakes in DeluxePaint IV on an interlaced screen with a 32 color options. Get that going now before proceeding. Once that's OK, go to the "Symmetry Tool," the snowflake-like gadget that is located



seven gadgets down on the right side of the DeluxePaint toolbox. Click on it with your right mousebutton, which will bring up its configuration requester. Notice the options. . . you should choose Point, Mirror, and 6 as the Order, all selected with the left mousebutton. Now hit the "Place" gadget. You will be returned to the screen with crosshairs following the mouse. Click the left mousebutton in the upper left portion of the screen. You have just chosen the center for the first snowflake; we'll design six of them.

Choose a medium brush size from the top of the toolbox (The smallest square one is nice.), and select a white color from the palette along with the Freehand Draw function (uppermost right tool). Now start drawing your snowflake (the Symmetry tool should still be on). Notice



that whatever lines you draw are mirrored in six directions around the center. Refer to Figure one for some alternative shapes that we've discovered. Don't copy these, however, but risk creating your own. As soon as you're done with one, return to the Symmetry requester and "Place" the center for the next snowflake in a new screen position. Continue this process until you have six snowflakes drawn on the screen, and then turn the Symmetry tool off.

Save your screen of six snowflakes to disk, just in case anything goes amiss.

The background

Now go to the alternate screen (press the J key). We're going to design an environment on which our snowflakes will fall. The first thing we need is the correct palette colors, so hit the P key and bring up the palette. The palette requester can also be invoked

from the pulldown menus. Reconfigure the colors as follows: Color 0 to black, Color 1 to white, Colors 2 to 4 as light gray to black, Colors 5 and 6 to saturated and light yellow, Colors 7 to 19 as a range of browns, Colors 20 to 32 as a range of blue to white. Winter scenes do not use reddish (warm) colors as a rule. Our warm yellow is the exception, since we will use it for a "moon". Once you have your palette done, click

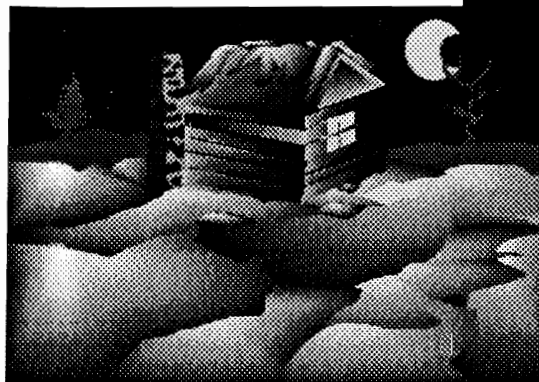


Figure 2

"OK" in the color requester and return to the screen.

Here's your chance to use your own unique creative juices, although you may refer to our painting (Figure 2) for reference. Using the brown range of colors, paint a cabin in the center of the screen. Experiment until you are satisfied. When it's complete, put some snow on the roof and on the ground around it. Place a yellow crescent moon in the sky and some light blue points for stars. Notice the way that I have "layered" the piles of snow in order to add interest and

depth to my painting. You may want to try this as well. I have also placed yellow in the cabin window for light, and reflected that light on the nearby snow. I have placed some trees in the

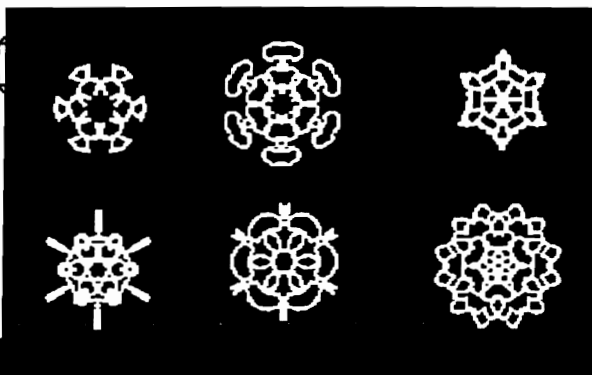


Figure 1

background for perspective interest, and have gone around the edge of the moon using the "Smooth" brush mode, blending it into the sky. When you're satisfied with your painting, save it to disk.

Next step: animation

Now, with a blank screen, set the Frame# to 30 (Animation menu). Load your snowflakes to the J screen, and one by one place them on the animation screen (first frame). We will now animate the snowflakes.



After placing one of the snowflakes on frame one, go to the Move requester (Animation menu). In that requester you will see three input areas, one each for X, Y, and Z, in the Angle line. make sure the Brush area is checked on this line. As you place numbers in these areas, the brush you just pasted on frame one will take the angle's direction and be drawn

A DeluxePaint IV animation tutorial

What you will need, to work through this tutorial:

An Amiga computer with as much memory as you can afford (minimum: 1 megabyte)

DeluxePaint IV software (Electronic Arts)

Patience.

Some experience with DeluxePaint IV would be helpful, but you'll probably be able to follow along without it.

to the screen, completing that angle of rotation in the number of frames specified (in this case 30 frames). each snowflake will have angles of 360 or minus 360 degrees or 180 / -180 degrees set in one

or any combination of input areas. This will allow them to spin and float to the ground in sequence.

The magic of animation is unpredictable behavior, so don't set any two snowflakes to the same angle of rotation. Complete this process for each of the six snowflakes. If you like, outline each of the snowflakes in blue first, so that they stand out against the background when they fall.

When all of your snowflakes are animated, pick each one up as an ANIMbrush (check the DeluxePaint manual, if needed, for

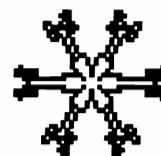
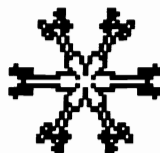
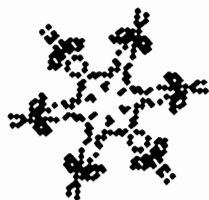
instructions on this procedure) and save each to disk. Clear all 30 frames when this has been accomplished. Now re-load your background painting, and set it to appear on all 30 frames of an animation. When the painting has been set on all 30 frames, you will paint the snowflakes in position one by one. The trick here will be to allow the background to be seen through the falling snowflakes. Just how much of it will peek through depends on whether your animation looks like a gentle snowfall or a raging blizzard. Experiment. By holding down the left Amiga key and the left mousebutton at the same time,

you can paint your snowflake ANIMbrush from the top to the bottom of the screen. By choosing alternate snowflake ANIMbrushes one by one, your snowstorm will take place. Start each new snowflake at a different frame number to increase the randomized look of a natural event. When satisfied,

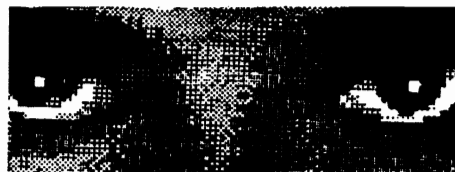
preview the animation and save it to disk.

Endless possibilities

As with any artistic endeavor, there are a thousand variations on this theme. You can add animated smoke to the chimney. Or gradually hide the moon behind a cloud. The snowflakes can get started a flake at a time, as with a real snowstorm, and build frequency till they obscure the scene, as with a blizzard. Use your imagination, and vary these techniques to your liking.



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