

THE AMIGA-VIDEO JOURNAL

Inside:

3D Utilities:

Animation Toolbox.....pg#5

Digitizing Techniques:

A recipe for successful digitizing.....pg#8

Amiga Image Processing:

Enhancing and modifying IFF images.....pg#10

Amiga-Video Finances:

The cost of setting up shop.....pg#14

Vid Bits

- NAB Report
- Video Toaster
- Amiga 3000
- AmigaVision

.....pg#2

Information For The Amiga/Video User

Subscribe!....(see pg#23)

Bars 'N' Tone

THE NEW COMMODORE

Every year, after a long winter of wheeling and dealing, making new plans, and acquiring new players, each major league baseball team enters spring training with soaring hopes. Every year coaches, players and fans talk about how this year is going to be "our year". Spring training is that magical time when everything is possible.

But then spring training ends and fades into a memory as the reality of the long regular season begins. For many teams unexpected injuries, poor performance and fatigue begin to take their toll. Before long, hope has faded and one can hear coaches, players and fans muttering excuses and talking about "next year."

For too many years Commodore has been the computer industry's equivalent of baseball's perpetual cellar dweller. Each new season (or new President) would bring the formation of new plans and the influx of new talent. And, every year, despite an occasional flash of brilliance, Commodore

execs would soon be muttering to themselves and talking about "next quarter."

I was once one of Commodore's biggest supporters. But, years of disappointments and dashed high hopes made me somewhat of a cynic. Well, all that has changed. I am a Commodore believer once again!

This is not a sudden change of heart. No, I have been burned too many times for that. Instead, it has been a gradual erosion of skepticism that, coincidentally, began a little over one year ago when Mr. Harry Copperman took the wheel in West Chester.

(Continued)

Since Mr. Copperman climbed into the hot seat Commodore has been acting like a real company. Products have been announced and promptly shipped. Amiga dealers have been re-authorized with Amiga mail order practically eliminated. New educational programs (with some teeth) have been planned and successfully implemented. Now, the Amiga 3000 has been launched and, more importantly, a new company focus--multimedia--has been identified and targeted. Right or wrong (and I believe it is right!), there is no doubt which direction Commodore is heading.

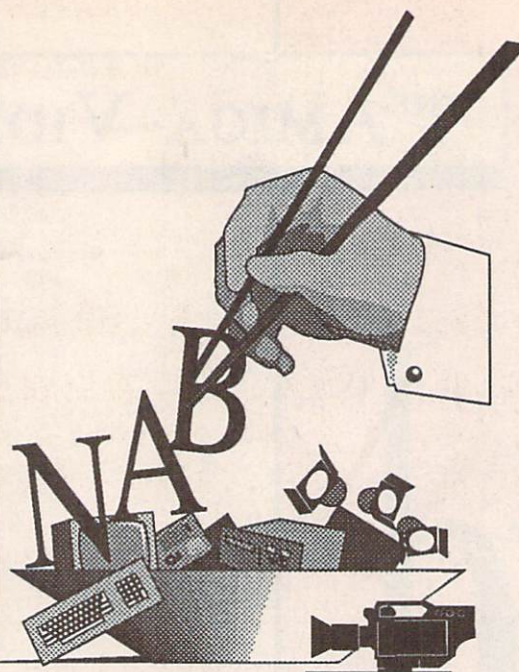
Of course, Mr. Copperman hasn't effected all these changes by himself. Like all good leaders, he has assembled a professional, competent group of executives to help him implement his plans. Copperman, who spent twenty years at IBM and the last two years at Apple, raided several computer and technology companies (including his old firms) and lured away some of the best management talent available. The new Commodore is an effective mix of the best of the old regime and highly motivated newcomers. The results speak for themselves.

I've had first-hand exposure to the new mindset at Commodore. In my real job as the Director of Educational & Corporate sales at a well-known Silicon Valley Amiga dealer, I've spent the last two years trying to crack the educational market. Working in Apple's back yard (I can see their corporate headquarters from my bedroom window) has been challenging, to say the least. In the past, Commodore support for my program has been virtually nonexistent. Things are definitely different now.

Al Rossi, Commodore's Western Region K-12 sales rep calls me on a regular basis. (That has never happened before.) Heck, sometimes he even calls me at home! (That has definitely never happened before!) When one of my client-schools requested a demo Amiga for a couple of weeks, Mr. Rossi air-shipped his personal Amiga 2500 the very next day. Now that, my friends, is support!

If you sense that I am excited to be involved with the new Commodore you are right! It is always exciting to be associated with a winner. Now if only my stock would go up...

J.P.



Vid Bits

Amiga News, Analysis
and Commentary

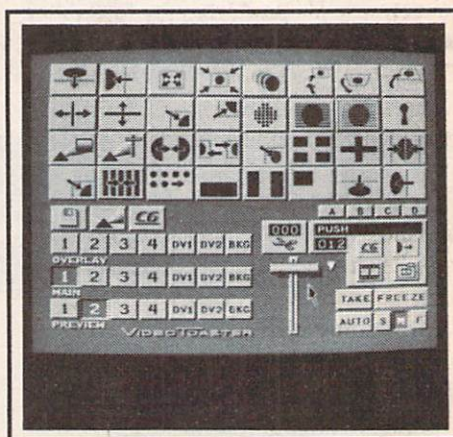
VIDEO HEAVEN!

• That's about the closest I can come to describing the atmosphere at the annual National Association of Broadcasters (NAB) show held in Atlanta last month. Two HUGE convention rooms filled to the rafters with all the latest, greatest video techno-toys. It was heady stuff for a small-town boy from AmigaVille.

Scattered among the oceans of "big name" video companies were a few welcome Amiga islands. Digital Creations, Omicron, Shereff Systems, NewTek and, even Commodore were ably representing the growing Amiga video market. I was very impressed with the image these companies were showing to the visually-sensitive video community. Nothing like the slapdash, homemade booths we're accustomed to seeing at Amiga shows.

Naturally, NewTek's Video Toaster made a spectacular showing. Yes, the Video Toaster really does exist! There were several pre-production Toaster boards inside various Amigas at NewTek's and Commodore's booths. There was even a bare Toaster board that you could actually put your hands on.

It is difficult to accurately evaluate a product in a tradeshow environment. You can never be quite sure that what you're seeing is really what you're seeing. There's no way of knowing what exotic and powerful equipment is lies hidden behind the cur-



tains. But, I'll say this: The Toaster's output looked great (and legit)! The demonstrator was sitting on a pedestal with very few curtains behind which Ampex ADO machines might be hiding.

Elan Design, producers of Performer and Invision, are responsible for the Toaster's software interface (see photo). Although not 100 % complete, the software seam-

lessly controlled most of the Toaster's effects. Several timebase-corrected video sources * fed into the Toaster's multiple video inputs which were used to demonstrate an array of impressive video effects. The video monitors hooked hundreds of ambivalent passer-bys and made Video Toaster believers out of them.

Besides holding live Toaster demos all day, NewTek was also showing a hilariously funny Toaster-produced video featuring comedians Penn & Teller. This video, called "Penn & Teller's Guide to Toaster Etiquette", opened with an incredible 3D animation created by Allen Hastings using his new Toaster-based animation program. The video featured an array of dazzling Toaster-effects and climaxed with Penn & Teller's "Bad Rock Video". According to a NewTek official, the video will be distributed to Amiga dealers once the Toaster begins shipping. So, when is the Video Toaster going to ship? Somehow I knew you'd ask!

NewTek officials were quick to point out that the Video Toaster is not yet FCC approved and this would delay production somewhat. However, they optimistically predicted that the first few Video Toasters would be produced and delivered to as demos to a select group of high-visibility clients (like network TV producers) by the end of May. A few units will be produced and delivered to a select group of Amiga dealers by the end of June. Don't expect Toasters in any numbers before September.

Despite NewTek's impressive showing, I was most impressed with Commodore's booth. Their large space was occupied by a number of prominent Amiga/video developers including RGB Creations, The Zuma Group, Interactive Microsystems, Octree Software, New Horizons and, of course, NewTek. The booth was packed the entire show. Later, one Commodore official stated that more than 1500 Amiga/video leads were generated at NAB. This does not indicate the number of people who visited the booth (that number was much larger), but the number of folks who actually gave their names and addresses to Commodore with a request for more information. With such impressive results, don't be surprised to see a much larger number of Amiga video developers at next years NAB in Las Vegas



**I italicized this passage to emphasize that the Video Toaster needs to be fed timebase-corrected video sources. Consumer stuff just ain't going to cut it. This is not going to be a problem for most professional videographers. Time base correctors are probably already part of their arsenal. The low-end desktop videographer, however, is going to be challenged to upgrade his/her equipment to Toaster standards. NewTek has been upfront about this from the beginning. The Video Toaster is a professional video product.*

• O.K., I blew it! In last month's Vid Bits I complained that the Amiga 3000 was not enough of a technological leap and too expensive. Well, I still feel the same about the former, but my stance on the latter has definitely changed. Simply put, I was wrong about some of the specs and the prices (there wasn't much more to be wrong about!). I won't waste space extensively repeating the A-3000's new features (Every Amiga-specific magazine on the planet provides extensive coverage and Byte Magazine features the 3000 on the cover of their May issue and use it as the subject of their feature story) but here's a list of the most important changes:

➤ Smaller and sleeker physical design. There are fewer internal expansion slots, but because the hard drive controller and extra memory sockets are on the motherboard, the expansion capabilities are undiminished.

➤ Completely re-designed Workbench with enhanced features and a new, more professional visual look.

➤ 32-bit bus throughout. Even the custom chips process and communicate at full 32-bit speed.

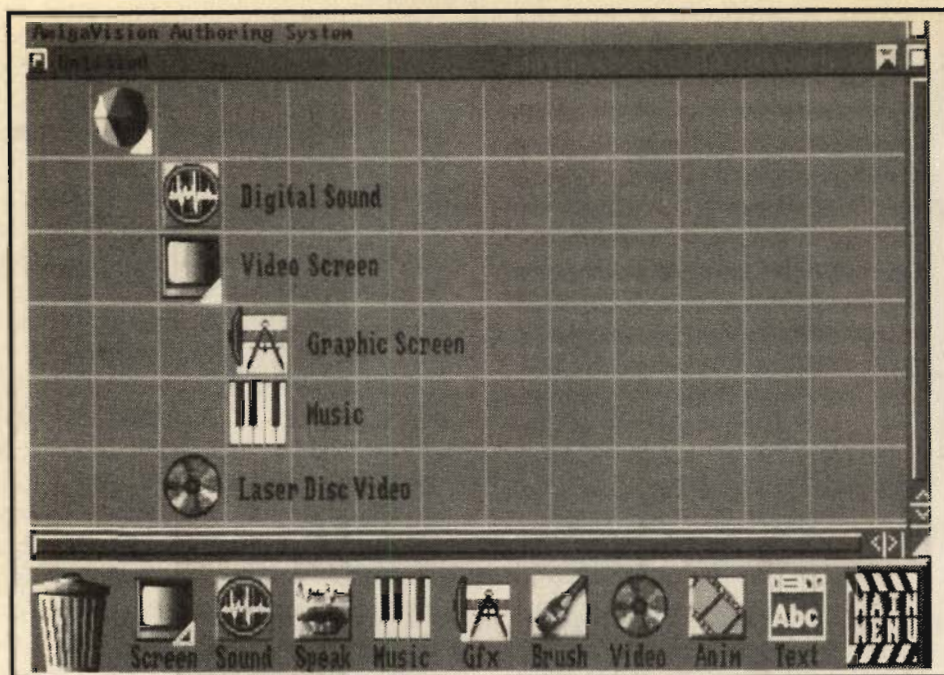
➤ A new de-interlacing and scan-doubling chip (code-named Amber). Switch-selectable support for either the standard Amiga monitor or multi-sync monitors.

➤ A host of new graphic resolutions and modes. Unfortunately, color limitations exist in some of the new modes.

The Amiga 3000 (see photo) comes in three different flavors, (the differences are in 68030 clockspeeds and hard drive capacities) but the most common variation (25 mHz 68030 and 40 megabyte Quantum hard drive) has a suggested retail price of \$3995. This translates into a street price in the \$3100-\$3200 range. This is excellent pricing considering the power and sophistication of the machine.

I was fortunate to attend the Amiga 3000 Roll-Out in Los Angeles and got a chance to test drive the new machine. From now on you'll be hearing me sing a different tune about the A-3000. I want one!

(Continued)



• Commodore also announced that the Enhanced Chip Set (ECS) and Workbench 2.0 will be made available for Amiga 2000-series computers in September. No pricing details were released and no date was mentioned for the Amiga 500 version.

P.S. A Commodore exec who read my A-3000 comments in Vid Bits told me that I had come dangerously close to describing the yet-to-be-announced Unix-based Amiga 3500.

• One of the major topics at the A-3000 Roll Out was a discussion of Commodore's Amiga focus (see Bars 'N' Tone on page #1). The future of the Amiga, according to Commodore, is tied to multimedia. Multimedia is a 2 billion dollar per year market today. It is projected to grow to over 11 billion dollars by 1995. The Amiga 3000 is Commodore's opening hardware salvo in the battle for multimedia market share.

The software ammunition for this powerful piece of hardware is AmigaVision, Commodore's new icon-based authoring program (see photo). Although AmigaVision is similar to Hypercard on the Mac in concept, in application it is much more powerful and much easier to use. Its claim to superior firepower rests on the Amiga's superior graphic, animation and sound capabilities. Its visually-oriented modular approach makes it easy to create a series of Amiga functions, and then easily tie them all to-

gether. I managed to obtain a gamma-version of the software a few weeks ago and, without documentation, I was able to easily create some nifty presentations.

AmigaVision is not the sole player in the Amiga authoring system arena. Ultra Card, CanDo and Viva are three powerful packages that have been available for months. I don't know how AmigaVision stacks up feature-wise against these other programs, but it may end up being a moot argument. Commodore is going to bundle AmigaVision with every new Amiga (except for Amiga 500's sold in mass-market channels) sold after May 1st! For current Amiga owners a rebate will be offered towards the \$149 suggested list price. Commodore predicts that at least 10% of Amiga owners will also have AmigaVision within 3 months. This should result in a flood of AmigaVision applications by Christmas.

• As I mentioned earlier, the Amiga 500 is going to be offered through mass-market channels. Look for this to happen sometime this summer. The move will be accompanied by a significant drop in price. I've heard street prices as low as \$399! Amiga dealers might have been incensed with this news a year ago, but Commodore has softened the blow by broadening the Amiga line on the top end and offering a special professional version of the Amiga 500 for dealers only. This model, called the Amiga 500P, will ship with one-megabyte of RAM installed

and is bundled with AmigaVision. The mass-market version is a 512K machine without AmigaVision.

• Pro Video Post from Shereff Systems has shipped as promised (I love it when that happens!) There has also been a reduction in price for both Pro Video Post and Pro Video Gold. The street price for Post is around \$275. The street price for Gold is around \$190. Pro Video Gold owners can upgrade to Post directly through Shereff for \$50. Pro Video Plus owners who never upgraded to Gold, can upgrade to Post for \$60. Remember, you can get Pro Video Post hints and tips from programmer Jeff Karline right here in the pages of AVID.

• Still no reply from Innovision Technologies on a new version of Broadcast Titler...

• Save your money on Mindware International's Credit Text Scroller. I saw the demo for this product a few days ago and it was not a pretty sight. The program allows you to create a text file with any Amiga font (including ColorFonts) and then scroll the text. The scroll was extremely jerky and not impressive at all. Amiga/video users, even the casual users, have come to expect much more. This is one of the rare cases where the product demo will actually hurt sales!

• Look for the Director II, from The Right Answers Group, in September. AVID will publish a preview of this powerful graphic-manipulation program in the July issue.



AVID PUBLICATIONS
370 Altair Way #207
Sunnyvale, CA 94086
(408) 252-0508

Editor / Publisher - Jim Plant
Associate Publisher - Laura Holland
Design/Illustration - Tom Twohy

Contributing editors

David Duberman, Matthew Leeds, Doug Shannon, Jeff Karline, Jay Gross
Oran Sands III

Publishing consultant

Mike Kornet

First Charter Subscriber

Mike Ingoglia

Amiga is a registered trademark of Commodore Business Machines, Inc.
All contents © Copyright 1990 by AVID PUBLICATIONS unless otherwise noted.



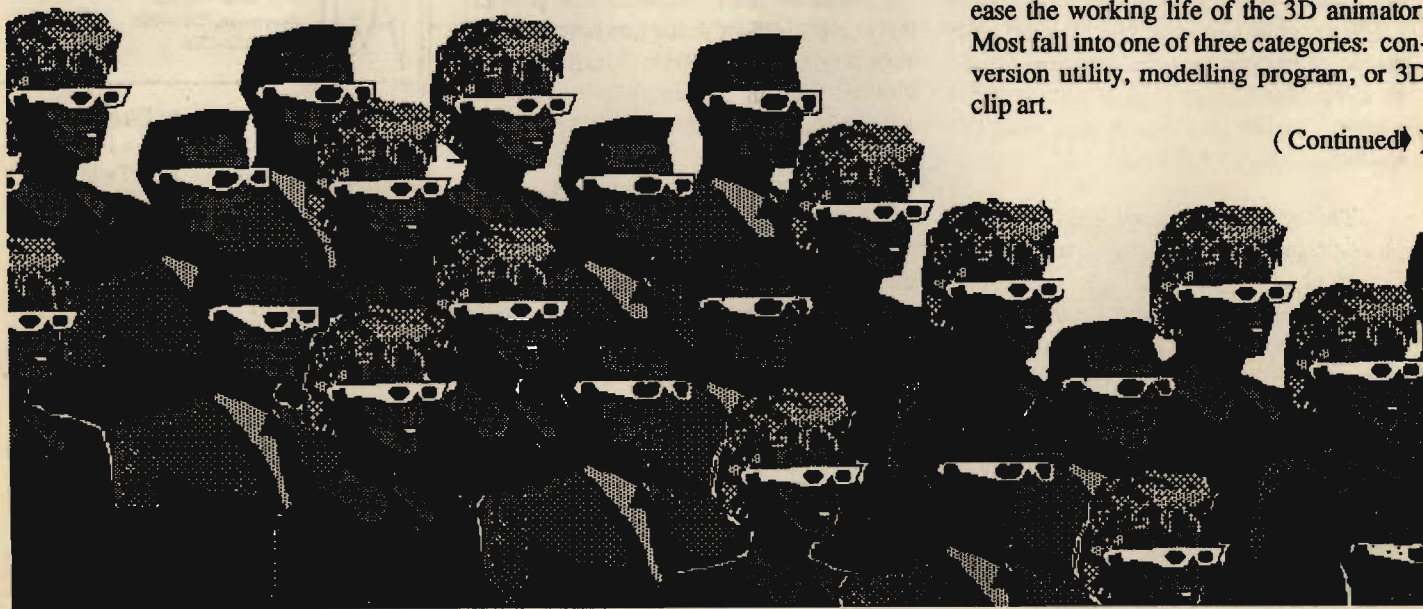
by David Duberman

Welcome back to an ongoing series on Amiga 3D animation.

An essential point I neglected to cover fully in the previous article (Ray Tracing Roundup in AVID Volume #1, Issue #1) is the time/experimentation factor. With most computers, you get what you pay for. With the Amiga, you get more than you pay for--graphics performance previously available heretofore only on systems costing ten times as much. What you don't get with the Amiga is the high-end system's speed. Even with the fastest 68030 accelerator board and the fastest 3D animation software currently available, you cannot obtain real-time animation. Therefore, there is often a substantial waiting period between the execution of an idea and viewing the final results--the animation played back at full speed. In creative endeavors like 3D animation, this waiting period can be frustrating and has the potential to damage the creative process. The faster the computer can execute your original ideas, the more time you have to fine-tune them, or if necessary, to throw them out and start over. And that's why people scrimp and save to be able to afford accelerators--if you're using the computer to help earn your living, it isn't a matter of convenience, but necessity.

On to the current topic, which for want of a better name, we'll call 3DToolbox. These are utility programs and data files that help ease the working life of the 3D animator. Most fall into one of three categories: conversion utility, modelling program, or 3D clip art.

(Continued)



Conversion Utilities

Let's start with AutoScript, the latest conversion utility, from Computerrall Services. This nifty little program performs a very simple function, converting files between PostScript and an Amiga 3D format. PostScript is a page description programming language used widely in the desktop publishing field, and can describe perfectly smooth rounded shapes accurately using Bezier curves. The program supports only the Sculpt and Silver 3D formats directly, but you can convert its output to other formats with Interchange, described below. Currently ProDraw (Gold Disk) is the only Amiga PostScript graphics program, so it immediately springs to mind in this context; but of course you can use the output from any Macintosh or PC PostScript program such as CricketDraw, after the file is transferred to Amiga format. You can draw smoothly curved and detailed outlines with ProDraw, output the drawing to a PostScript file, then convert it to 3D and extrude, spin, or otherwise manipulate it. You can also use a PostScript drawing program with AutoScript to create smooth motion paths for your 3D animations. One obvious application is fancy logos. Type your text into ProDraw, distort and embellish it as you like, then convert it to 3D, extrude it, and animate it. With Gold Disk's recent release of the ProDraw-compatible disk of CompuGraphic fonts, you have a wide selection of text styles from which to choose. Unfortunately, AutoScript does not provide a polygon fill function, which results in hollow objects, but it does allow you to export outlines to DigiWorks 3D format, (more about this in a moment). AutoScript also converts Sculpt.scene files and Silver Cell files to PostScript format, which is a neat way to add a 3D wireframe image to your desktop publishing documents.

DigiWorks 3D (Access Technologies) performs a similar function to AutoScript's, but works from bitmaps (IFF pictures) rather than Postscript files. When you load a bitmap, the program automatically places vertices at appropriate points around the edges of all non-background-color shapes, then connects the vertices with edges. Once this is done, you can save the outline in Sculpt or Silver format, filled with triangular polygons or not, and extruded or not. The program works quite well with simple two-color

images, but don't plan on converting that digitized HAM picture of your parrot to 3D. DigiWorks also provides editing features. You can add and delete an outline's vertices and edges, and move the vertices. If you can paint or digitize outlines that you'd like to convert to 3D, DigiWorks 3D is your best bet.

Use ACAD to Convert Auto Cad files to Amiga 3D Format

The oldest and most popular 3D accessory program is Interchange from Syndesis. Designed as a modular program, Interchange comes with the capability to convert objects between the Sculpt family of programs and Aegis/Oxxi's VideoScape 3D. Syndesis has just released version 1.5, which adds support for VideoScape's fast-loading binary format. If you buy the Silver add-on module, you also get such utilities as a point-reduction module. Another module supports the often overlooked Forms in Flight. Syndesis also offers a high-end version called Interfont, which offers such amenities as a 3D font editor and the ability to convert objects between ProDraw and other supported formats. Operation of Interchange couldn't be simpler. After running the program and whichever modules you need, simply select an input file or files and the output format and directory. The program informs you of its progress, and file extensions (e.g. .scene) are added as appropriate.

If you have access to files produced by 3D versions of AutoCAD, the popular MS-DOS drafting program, you can use ACAD Translator (Access Technologies) to convert them to Amiga 3D format. Of course, you'll first need to get the files into Amiga disk file format, which you can do with DOS-2-DOS or CrossDOS--don't forget to use the ASCII translation option. As with the above programs, usage is quite simple--specify input and output files, and let the program go to work. ACAD Translator

gives you control over the AutoCAD object's different layers, but only outputs in Sculpt format.

Modelling Software

Modeler 3D (Aegis/Oxxi) was written primarily for use with VideoScape 3D, which doesn't have any internal modelling capability. If you have at least one megabyte of RAM, you can run them both simultaneously, then load an object into VideoScape from Modeler's workspace without having to first save the object to a disk file. As with 3D programs with built-in editors, objects are edited in wireframe mode, but you can view objects as solids from different angles in an optional fourth window. Incidentally, Modeler can load Sculpt-format objects, so you can use it to convert Sculpt objects to VideoScape format, but not in reverse.

Like some CAD (Computer-Aided Drafting) programs, Modeler uses a multi-layer approach--eight in this case--so you can build up different components of a complex object in one layer while you see but can't edit other layer's contents. Object creation tools include Add Point, Curve which lets you add a string of points connected by edges, Add Polygon, Sphere, Plane, Box, and Tube. Editing commands let you delete parts, cut or copy them to another layer, mirror objects, create arrays of objects, change colors, rotate, translate, and scale objects, and much more. With Volume Mode you can select all points and/or polygons in a specific oblong space for a subsequent editing operation. One of the more unique commands, Remap, lets you reshape objects or arrays of objects in a number of interesting ways. For example, with Array and Remap you can create a spiral staircase from a simple box. There's a lot more to this program--check it out at your local retailer.

The other popular Amiga 3D modelling program is 3-Demon (Mimetics), whose main claim to fame is the default solid modelling mode for object creation. The primary benefit is that you get a better idea of your object's final appearance, while the drawback is that it takes the program a bit longer to redraw the image after the object's been manipulated. You can opt to work in wireframe mode for greater speed.

Like Modeler 3D, 3-Demon can load objects in VideoScape and Sculpt formats. However, it can also save objects in a variety of formats, including Sculpt, VideoScape, Silver, Forms in Flight, and Gossett Graphics (used in high-end graphics systems). The program gives you a wealth of object creation and editing capabilities, such as the ability to create a list of surface properties, each of which specifies color, reflectivity, transparency, etc., then applies each property to an object face-by-face or all-at-once by simply pointing and clicking. There's much more, including Spin, Extrude, and Slice (creating objects from cross-sections), and hierarchical relationships between objects. Again, there's far more to 3-Demon than I can cover in this space, so if you're intrigued, I highly recommend you ask your dealer to let you try it out.

3D Clip Art

If you'd like to animate complex objects, but aren't particularly adept at creating them, then you're sure to appreciate the availability of 3D clip art. Clip art is a term used in desktop publishing to describe disk-based collections of ready-made images that you can import into documents without having to first draw or digitize them. Their advantage is a savings in time and/or cost, while a possible drawback with clip art is loss of impact due to the lack of uniqueness of the imagery. The Amiga software marketplace offers a variety of 3D clip art disks of ready-made three-dimensional objects for load-and-go animation. Antic Software publishes disks called Human Design (highly detailed skeletons), Future Design (space ships), Architectural Design (building parts), Interior Design (furniture, etc.), and Microbot Design (robots). All disks are available in Sculpt, Silver, or VideoScape format. Polar Arts Software produces two collections of flying machines. Starships 2050 is a three disk collection--two disks of well-designed space ships and star bases, plus a disk full of digitized outer-space background images for your original 3D science-fiction movies. Airships, their second release, contains a well-balanced selection of classic aircraft from the Wright Brothers to Voyager. Both packages are available in Sculpt and Silver format.

Landscapes and Seascapes

A third type of 3D accessory program is the specialized object creation utility, of which Impulse, Inc.'s Terrain is an ideal example. Terrain lets you manipulate a flat rectangular object whose size and complexity (number of component triangular faces) is determined by you at the outset. Next you add peaks and valleys anywhere, then set their height or depth, breadth, length, and roughness. As you work, you can view the terrain-in-progress as a solid or wireframe, from its edges, or from a movable camera position. You can save your landscapes as Silver objects or as cell files, including camera settings. If you choose to save a seascape, Terrain asks you for a number of cells, then generates a smoothly undulating animated sequence with convincing-looking saves for use with Silver--you just load each cell individually to recreate the sequence. And of course, with Interchange you can convert Terrain's output to any other Amiga 3D format.

Another example of this type of utility would be a special object motion creation program, and the first such program, called ProMotion, is about to be released by Aegis/Oxxi. Designed for use with VideoScape, it promises to be capable of generating sophisticated 3D motion paths using complex mathematical formulas to simulate such effects as acceleration and deceleration. We'll cover ProMotion in more depth as soon as it's released.

Conclusion

As you can see, there's a plethora of options for the 3D animator seeking practical help. Almost anybody would likely find at least one of the conversion utilities useful. If your 3D program doesn't give you the modelling capability you need, consider one of the stand-alones: Modeler 3D or 3-Demon. And if, for whatever reason, you're just not up to creating original complex objects, you owe it to yourself to investigate the various 3D clip art available. In your search for accessories, don't overlook the public domain. For example, there's a public domain collection of dragon parts--they're not terribly sophisticated-looking, but the price is right!

©Copyright 1990 David Duberman

Public Domain Like
You've Never Seen!



*Disks organized by
topic.
Buy only the software
you want.*

- Games
- Demos
- Icons
- Utilities
- Pictures
- Video Tools.

*Now over 100 disks to
choose from!*

Send \$3.00 for catalog on
disk to:

**Premier Software
P.O. Box 3782
Redwood City, CA
94064
or call:
(415) 593-1207**

*Ask about our custom graphics and
label services.*

A Recipe For Good Digitizing...



By Oran Sands III

In order to cook up some tasty pictures, it's often necessary to use digitized pictures. If you're not already a trained digital chef, then follow these cooking tips to assure digi-pics that are attractive and wholesome for any application.

START WITH ONE WELL-SEASONED CAMERA...

I can't emphasize enough the need for a good camera. This is the one item that'll make or break your efforts. While the camera that's most often sold for digitizing is ok for most work, it can certainly be improved upon. Look for cameras with high resolution. The higher the better. Also, any video camera aimed at a properly lit scene should be able to put out a full 100 IRE units of video. If not, your image is going to be compromised.

The ideal camera to use is a 3-tube (or 3 chip) color camera. Using the TEST output from such a camera you can access the individual tube outputs of Red, Green, and Blue. Since these tubes have filters glued to their faceplates, you needn't use the supplied filter wheel. If your camera hasn't got the TEST output, but can show the three signals to the viewfinder, then it may be possible to intercept the signals with a little modification to the viewfinder itself (ask a technician to do it!). Another advantage to the 3-tube camera is that there is usually vertical and horizontal enhancement circuitry of which to take advantage.

ADD A HANDFUL OF PROPER IMAGES...

The great looking pics you see in the digitizing ads are the result of literally digitizing hundreds of pictures till one looks good. A great looking picture is NOT always going to occur. The very nature of the picture itself will affect the outcome. Pictures with wildly varying colors are harder to digitize than images that are mostly shades or variations of a single color. If you are limited to using the smaller palette sizes, then this is very important. If you plan to use only a section of the final digitized image, then mask off the picture areas you don't want prior to digitizing. In other words don't digitize what you don't need!

The texture of the picture will affect the image; try to use glossy prints when possible. The size can make a difference as well. Use pictures that are too small and you'll begin to see the 4-color printing process dots. Too big and there is probably too much detail to render. My favorite size is something between 3x5 to 8x10. Slides digitize well if you can actually shoot them. Laying them on a light box is the ideal way to shoot, if you have a lens that can focus on them and still be far enough away to be able to get the filter wheel between the slide and the camera lens.

USING THE PROPER OVEN...

Back to equipment for a second. How you physically setup your digitizing equipment can determine how tasty your final digi-pics will be. The copy stand unit many people use could actually be ok if used properly, but straight out of the box it can cause more problems than it'll solve. If you were to digitize a plain, white sheet of paper, you'd more than likely find that you would have a white blob in the middle and several surrounding rings of varying shades of light gray. This is due to uneven lighting, the center of the image being hotter than the rest.

The only real solution is to not use the built-in lights. One strong light, set several feet back, can give you the illumination levels you need and yet give you very even lighting. Even better is to tack your artwork to the wall and place the camera on a tripod to shoot it. A light placed to the side of the camera, back a few feet will again give you the kind of lighting you need (I use a 1000 watt light about 5 feet from the picture).

If you must use the copy stand, use fluorescent bulbs, not incandescent. Also, make sure that the distance between the camera lens and the filter wheel is as small as possible. If the lights are above the filter wheel, you can get reflection off the filters into the camera. For that matter, many cameras have a small red power indicator light above the lens that can also reflect into the camera. Tape over it if so.

Don't be content to use only the lens that was supplied. You can find other "C mount" lenses in other sizes that may lend themselves to better setups. A zoom lens is a dandy idea if you're working off a tripod. A

lens with a macro capability can solve closeup problems.

TRIM THE FAT...

Remove the background. In fact, remove anything that isn't needed. Even if you digitized the image with masked-off areas to reduce color problems, you'll still have more image than you really want. Try to boil your image down to the tender morsel it should be. This will isolate the image and also leave you enough area to add titling or other artistic touches. This is easy to do in a paint program.

If you need to determine which pixels are color 0 and which are the same color, but a different color register, try this. Call up the palette requestor in your paint program and select color 0, the first color in the palette. It is most often black. Change the sliders until it is some hideous hard-to-look-at color like lime green. Something that isn't already in the picture. One look at the picture will tell you where color 0 is and where it isn't. Now repaint using color 0 as needed to remove unwanted pixels. This has another use as well. It will greatly reduce the file size when saved to disk. Those stray pixels can really swell up a file.

USE YOUR SPICES SPARINGLY...

Just because you have 4096 colors available to you doesn't mean you need all of them. Working with HAM mode has its own set of problems, the least of which is that the images can't be used with most display programs you may be using. Hi-res modes can't use HAM images either. This doesn't really hinder the master chef. A few colors can go a long way if you have the other techniques of digitizing down pat. In fact, you may find that you need a color or two for titling the image and that these colors don't exist in your digitized image. There are two ways around this.

The first method is for those of us who can actually plan ahead. If you know in advance that you need a color or two for your own use then after digitizing the image (but while still in the "tweaking" mode) tell the program to digitize in only 30 colors instead of 32 (or 14 instead of 16). You'll be surprised at how well the program can handle

making a new palette that will look just as good. In fact, try experimenting by reducing the number of colors until the image is no longer good enough. You might be surprised at the results.

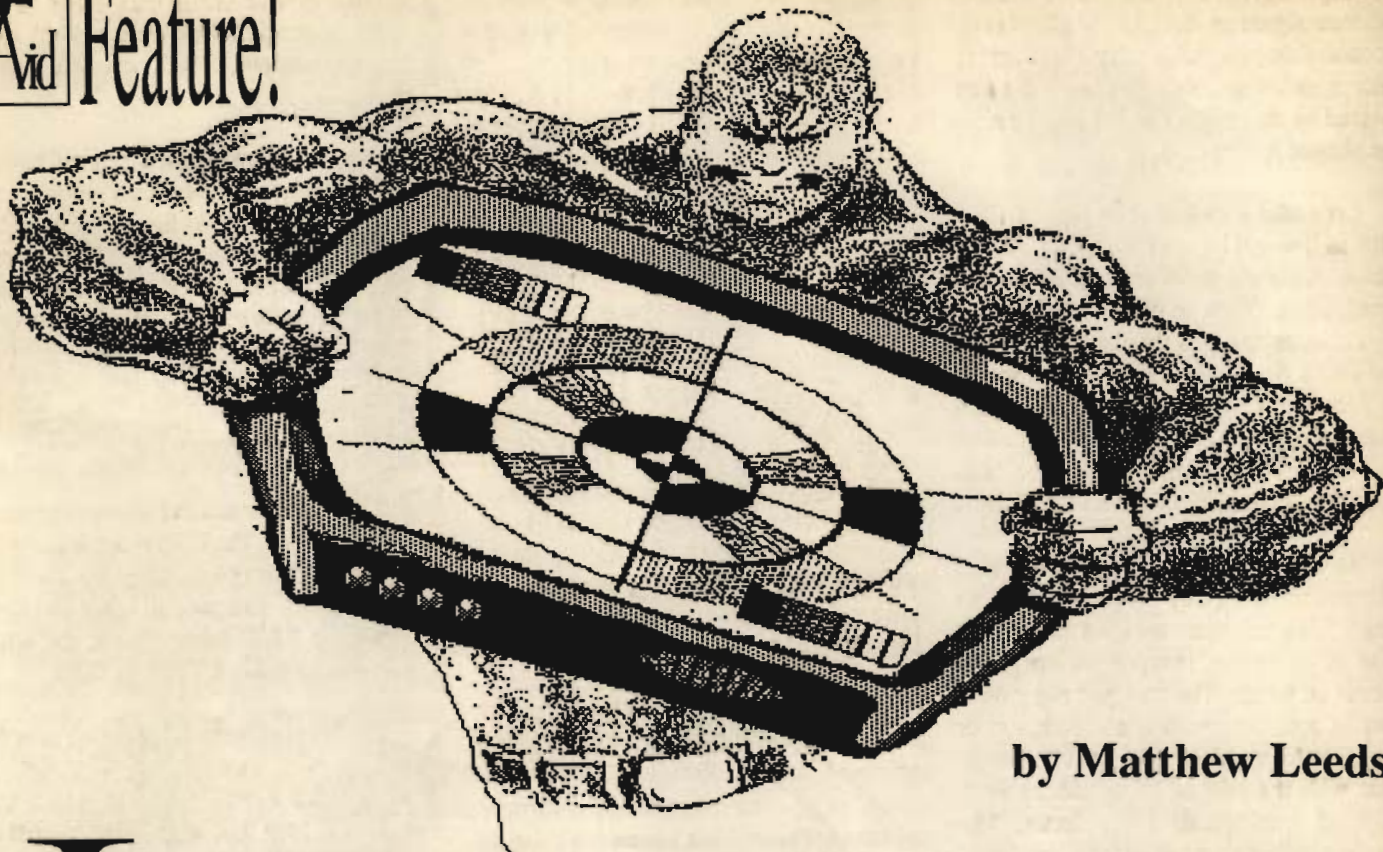
KITCHEN CLEANUP...

The other method is for the rest of us. After the image is completed and saved to disk, then use Butcher of Pixmate on it. If you're not familiar with these programs, they are simply the most useful digital-kitchen appliances you can have. Either program can accomplish the same effects, but they certainly have a different "feel" to them.

After loading the image into the program (we'll discuss Butcher for this example) you can call up the histogram, a display showing the utilization and distribution of colors within the picture. Select the MERGE feature to "merge" two colors together. Obviously, you want to find two colors that are nearly the same. Sometimes you may find that there are actually two colors that are exactly the same. Use the MERGE feature to merge them into one. Now you have a color register that has no pixels in the image, just waiting to be used for titling or whatever. You can continue this procedure over and over until you still have an acceptable image and also the number of free colors you need. If you can't color cycle because the colors you want to cycle aren't next to each other in the palette, then use EXCHANGE to move the colors around to get them where you need them. It's remarkably painless.

Well, that's just a few of the things you can do to liven up your digitized images. Although the majority of these ideas apply directly to using DigiView, I think you'll find that all digitizers and framegrabbers alike will respond to these "tweaks". So experiment and try a few things on your own. You'll be pleasantly surprised when your friends begin asking for the recipe!

© Copyright 1990 by Oran Sands III



by Matthew Leeds

Image Processing

What is image processing. The irreverent thought of a Cuisinart stuffed full of pictures comes to mind, but we live in a more enlightened time. Image processing is used every day in weather prediction, medical diagnostics, robotics, printing, manufacturing, and a long list of other applications. Image processing once required expensive dedicated hardware systems, and a lot of patience on the part of the operator. The Amiga has brought affordable image processing to both the professional and interested amateur.

The art and science of analyzing and modifying pictures has come a long way since the days of Sherlock Holmes peering

through a dusty magnifying glass at a faded photograph. Image processing algorithms and computers have both advanced to the point that anyone can now experiment and achieve remarkable results with low cost software.

This article will give you a brief overview of image processing technology, and then take a short guided tour of some of the image processing software available for the Amiga. If after reading this article you find that you would like to learn more about image processing, I've included a bibliography at the end.

The heart of any image processing system is the algorithms it uses. These can be classified in several ways:

- 1) Changes to a single pixel's value based only on its value - Point process.
- 2) Changes to a single pixel's value based on the value of both it and its neighbors - Area Process.
- 3) Changes in the position or arrangement of a group of pixels - Geometric Process.
- 4) Changes to pixel values is based on comparing two or more images - Frame Process.

Image Processing is used to improve or modify the appearance of an image, to extract information from an image, to recognize specific elements in an image, and to measure image elements. A classic example is in crop management. A false color satellite

image can be analyzed for the type of crops growing in a given area based on the infrared spectrum signature that specific plants emit. A count of the percentage of pixels of a given color in an image, once you know the area covered by the image, can tell you the acreage planted in that crop.

Let's take a look at each type of algorithm as it would be used in a specific application. A classic point process is contrast equalization. Often an image will have too low a contrast to allow the discrimination of fine detail. An intensity histogram displays the percentage of pixels that fall into each intensity range in the image. By adjusting the change at each intensity step you can stretch or equalize the contrast in the image.

An area process uses neighborhood information to modify pixel values in an image. Area processes are used to filter out noise in an image, sharpen an image, or smooth an image. The standard algorithms used in area processes are correlation or convolution operations. You replace a pixel's value with the sum of its neighbors, each weighted (multiplied) by a factor. The weighting factors are called the convolution kernel. Typical kernels are 3X3 or 5X5, although larger kernels are used in high end image processing systems.

The design and size of the kernel used has a direct correlation on the result of the area process. A kernel that looked like this:

```
-1 0 1
-1 0 1
-1 0 1
```

would be used to amplify vertical edges while a kernel like this:

```
-1 -1 -1
0 0 0
1 1 1
```

would be used to amplify horizontal edges. Other types of kernels are used to filter out noise, increase sharpness, or perform other operations. Selecting the right kernel can make quite a bit of difference in image processing.

Convolution is a linear operation. Non-linear area processes are also used in image processing. Sobel, Cross, and median filters are examples of non-linear area processes. Each has its own advantages and disadvantages, but all generally are slower than linear processes.

Geometric processes are used to correct or induce distortions. Changes such as stretches, rotations, or wrapping around a three dimensional object are good examples of geometric processes. On the Amiga, other geometric processes would include conversion between different display resolutions or clipping a portion of an image to save as a brush. The perspective mode in Deluxe Paint III is a good example of a geometric process.

Pixmate may be viewed as the competitor to Butcher. It may also be viewed as the complement to Butcher.

Frame processes involve more than one image. Merging two images together is one example of a frame process. A typical industrial use of a frame process is in motion detection. Using two frames captured from a video camera, with some time elapsed between them, a frame subtraction process would reveal any change between the two frames. The resultant difference would comprise the movement that occurred during the time lapse.

On the Amiga, image processing software is used not only in these kinds of traditional applications, but to manipulate IFF images for use in paint and animation programs. Changing color palettes, controlling the number of bit planes in an image, converting between different screen display resolutions, and creating special effects all make use of image processing.

Amiga Image Processing Software

The first commercial image processing package for the Amiga was Butcher. The current version of Butcher, V2.0, is an excel-

lent example of an image processing package created with the special needs of the Amiga in mind. It has an excellent user interface, and many of its functions are intuitive.

Butcher offers a good mix of Amiga specific and image processing tools. It will convert between all Amiga display modes including HAM, supports all overscan images, and offers a good number of image processing options. It allows you to perform palette manipulation to rearrange color palettes, set color cycling, or sort color registers. Its color palette requester can also be used to adjust the contrast of an image.


The image processing tools offer a wide range of options. The Effects menu includes inverting and complementing the color requesters, false and pseudo color changes, antique and B&W toner effects, and color separation as either CYMK or RGB.

The Process menu Edge option uses the Sobel operator. You can set the threshold level at which it decides an edge exists and how it will treat that edge. You can either create a map of the edges or enhance them on the original image. Three types of edge detection are available in terms of detecting changes in the image. The Filter option removes isolated pixels or groups of pixels from an image. This can be used to clean up noise in an image, or to reduce the number of color registers used by an image. The Mosaic option creates new images mapped to tile shapes you can create. Other Process options include Density Slicing to isolate or remove intensity ranges, and Color Segmenting that performs similar operations on hue, saturation, and value. There are also options that create half-tones in a variety of ways.

Butcher will also create Histograms of your images. Within the Histogram requester you can sort the color palette and make changes. You can also print out a report of the results of the Histogram. Butcher is an excellent program for the average Amiga user who wants to experiment with some image processing effects and also manipulate IFF images.

Pixmate may be viewed as the competitor to Butcher. It may also be viewed as the

(Continued)

MAY 1990 

688 ATTACK SUB™

So Real It Should Be Classified!

Command a top secret billion dollar U.S. Attack Sub or a Soviet Alfa.



- Hunt and evade enemies using the world's most advanced sub technology, like 3D sonar contour imaging.
- Master all responsibilities yourself or delegate to your crews. Crew members come to life with actual digitized pictures when they report to you.
- Control sophisticated weapons systems like Harpoon encapsulated missiles, wire-guided torpedoes and more.
- Amiga version supports full 32 colors.
- Digitized sound samples.

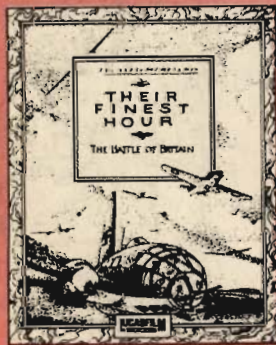
FREE Survival Guide! Order 688 Attack Sub directly from Electronic Arts and receive the Survival Guide (\$12.95 value) free with your order. Contains advanced American AND USSR tactical hints. How to avoid torpedoes, deploy weapons systems, lock on enemies, hide under thermal layers and much more!

Amiga version is \$49.95

Their Finest Hour: The Battle of Britain™

A fitting tribute to the 50th anniversary of the Battle of Britain.

The computer game that captures aerial heroics on both sides of the conflict.



- Historically accurate planes and battles.
- Technically accurate planes.
- Role-playing features with pilots' service records, awards of British and German decorations and more.
- Outstanding graphics and sound.
- Many special features such as randomized missions, build-it-yourself missions, map/radio room view, photo-packed 200 page manual.
- Instant replay features with stop-action.

FREE Battle of Britain T-shirt! Order Battle of Britain direct from Electronic Arts and receive a great T-shirt (\$14.95 Value) free!

Amiga version is \$59.95

To order with VISA/MC, call 800 245-4525. To order by mail, send a check (add \$3.00 shipping/handling) to:



ELECTRONIC ARTS®

Electronic Arts Direct, P.O. Box 7530, San Mateo, CA 94403

Offers are exclusive to Electronic Arts Direct. Offers expire May 15, 1990

688 Attack Sub is a registered trademark of Electronic Arts. Their Finest Hour: The Battle of Britain is a registered trademark of Lucasfilm.

complement to Butcher. Although they offer some of the same features, there are more differences than similarities. Pixmate handles all Amiga IFF formats including support for Extra Half Brite and overscan. It will also read the original style of DigiView files, Atari Neochrome files, and a raw image data format. Pixmate has one of the best file requesters I've ever seen.

Pixmate will also grab screen images from other programs, provided you have sufficient RAM to run both applications. It will hunt through memory to find Deluxe Paint's screen and copy it into its own memory. It will also grab any other screen displayed by a program running concurrently.

It can be used to convert from one IFF format to another; sort, modify, extract, and pack color palettes; perform color separations; create pseudo color operations; modify the image based on hue, saturation, and color; or remap the color palette of an image to either that of another image or to another color palette stored on disk.

You can flip the image on either the X or Y axis, make it thinner or shorter, taller or wider, rotate or swap bit planes while retaining the color mapping information, and change the size of the image in exact pixel increments.

The Histogram capability of Pixmate is quite nice. You can adjust the contrast just by raising or lowering a slider for each color palette. It will generate a color usage count as well.

Pixmate offers a greater number of options in image processing operations. The Image Processor requester, however, is confusing and requires a fair amount of study (with many references to the manual) before a degree of understanding is reached. It offers area and frame processing. Frame processes include most of the boolean logic operations. The area processes use convolution, in either a 3X3 or 5X5 matrix. Averaging, randomization, median filtering, unsharp masking, and local contrast enhancement options are all available.

Slider controls set the threshold level for image processing operations, and there are a variety of preprogrammed kernels available. These kernels are designed to selectively filter for different types of detail.

Pixmate can be difficult at times to use, but it offers a great deal of power to those who take the time to learn how to operate it.

Deluxe PhotoLab is not strictly an image processing package. Although it does not have traditional image processing capability, it does offer the Amiga user some excellent image manipulation functions. Deluxe PhotoLab contains three modules: Paint, Poster, and Colors. Only the Colors module is of interest in image processing terms.

The Colors module offers a Histogram display of the color registers. The display can be of any item: Red, Green, Blue, Hue, Saturation, Value, or Population. The display can be sorted in ascending or descending values. You can adjust the values in the Histogram as you please, using up and down arrows.

You can also generate color separations in RGB or CYMK, negative images, convert color to gray scale, and create 'pixelized' images. The screen size, number of bit planes, and number of colors used by an image can be adjusted. Colors supports all display modes of the Amiga, including HAM, EHB, and overscan. Although you most likely would not buy Deluxe PhotoLab specifically for its image processing capabilities, you should be aware of what it can do for you.

Focus Video is an image acquisition and processing system. It was designed to be used with the A-Squared Live! video capture board, and it offers several real-time and animation sequence operations not provided by any other package. It can be used without a Live! board, although it will only accept images in the 320X400 format. Within these limits, it offers a several unique features.

When used with the Live! board, you can capture single images from video or sequences. Images can be captured in either black and white, or in color. You can average successive image frames to average out fluctuations in the video signal, improve the signal-to-noise ratio, and improve image contrast. The stored set of frames can be manipulated using the image processing tools provided in Focus Video.

The tools include the ability to change the palette used by an image, to change the contrast, to adjust the overall brightness and darkness, to invert (negative) the image tonal ranges, and to pseudocolor the image.

The spatial filters provided use a 3X3 kernel. You can use built-in smoothing and sharpening kernels, or specify your own. A 3D or bas-relief image can be created by setting horizontal and vertical offset values in the 3D menu requester. It subtracts the original image from an offset copy. Erode and Dilate operators expand bright and dark areas in the image, respectively. A Median operator reduces noise in the image.

Focus Video provides an off-screen buffer in which to store a temporary copy of the image. This lets you experiment on an image and then restore it if you don't like the results. You can swap between the stored image and the on-screen copy to compare results. You can also combine the on-screen image with the buffered one in a variety of ways. The images can be averaged, or AND'ed, OR'ed and XOR'ed. They may also be composited via the minimum or maximum pixel intensities pointwise.

Several additional tools are provided. A Zoom function magnifies an rectangular region. You can add text, but cannot select the font used. You can also measure the distance between any two points on the screen, either in relative units, or you can calibrate the units used if you know the distance between two pairs of points on the screen. A Histogram function is also provided, in fact you can select any region on the screen and obtain a histogram for that area, and create multiple histograms if you like.

Focus Video will print an image, or allow you to save it as an IFF image. You can also save it as a PostScript gray-scale or 4-color separation, or as a Sun Rasterfile. Some control over the screen

CHAMPIONS of KRYNN

The First Advanced Dungeons & Dragons® Fantasy Role Playing Epic for AMIGA!

For the first time ever on any computer, you'll enjoy fantasy role-playing adventure in the legendary AD&D® DRAGONLANCE® game world of Krynn.

- TSR's™ most popular game world!
- State-of-the-art graphics and sound.
- Amiga version features specially enhanced artwork based on a 32 color palette!
- Includes 16 page rulebook, 64 page Adventurer's Journal and a FREE poster featuring an original TSR™ painting.



FREE Sixty page *cluebook* (\$12.95 value) with maps and a checklist of major events and treasures.

Amiga version is \$49.95

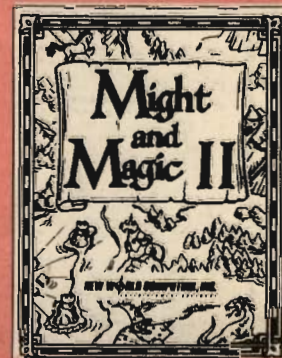
ADVANCED DUNGEONS & DRAGONS, AD&D, DRAGONLANCE and the TSR logo are trademarks owned by and used under license from TSR, Inc. Lake Geneva, WI, U.S.A. © 1990 TSR, Inc. All rights reserved.

MIGHT AND MAGIC® II

The Basic Elements of Adventure, in their Most Advanced Form.

The best of both worlds: Overhead mapping with the largest 3D graphics window of any fantasy role-playing game.

- Auto-mapping remembers every square your party has been through.
- Over 250 animated monsters.
- Hundreds of different quests in the world of Cron are tailored to your personal skill level.
- Detail so intricate that even the torches that light your path flicker and sputter with realism.
- 96 Potent spells, 250 devastating weapons.



FREE *Cluebook* (\$12.95 value). Order *Might and Magic II* direct from Electronic Arts and receive the *cluebook* free with your order!

Amiga version is \$49.95

To order with VISA/MC, call 800 245-4525. To order by mail, send a check (add \$3.00 shipping/handling) to:



ELECTRONIC ARTS®

Electronic Arts Direct, P.O. Box 7530, San Mateo, CA 94403

Offers are exclusive to Electronic Arts Direct. Offers expire May 15, 1990

Might and Magic II is a registered trademark of New World Computing, Inc.

frequency and angles is provided as is control over the undercolor correction and K boost in PostScript files (Note: these are ASCII PostScript, not EPS files). You may also load four gray-scale images as quarter-size images for simultaneous display.

This program has a rough, unfinished feel to it. The file requesters are the worst I've seen in a long time in an Amiga program, and there are no keyboard equivalents for any of the menu items. If you don't use a Live! board this may not be the best first choice in an image processing package.

If you want to start off inexpensively in image processing, I recommend a public domain program called FPIC. This is an excellent introduction into image processing. It is a remarkable package with a dozen operators available from a menu and it includes the ability for the user to create their own kernel. It also has a histogram function, and an excellent split screen capability for comparing the original and resulting images. It is available on Fish disk #71.

This is only an entry level look at image processing. If you want to learn more about it, I suggest the following books:

Digital Image Processing by G. Baxes - Prentice Hall 1983.

Digital Picture Processing by A. Rosenfeld and A. C. Kak - Academic Press 1982.

Computer Image Processing and Recognition by Ernest Hall - Academic Press 1979.

Butcher
Eagle Tree Software
P.O. Box 164
Hopewell, VA 23860

Pixmate
Progressive Peripherals & Software
464 Kalamath Street
Denver, CO 80204

Deluxe Photo Lab
Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404

Focus Video
A-Squared Distributions
6114 La Salle Avenue, Suite 326
Oakland, CA 94611

©copyright 1990 by Matthew Leeds

 Feature!

The COST Of Amiga Video

by Jay Gross



The big question beginners ask first about desktop video is, "How much does it cost." It's a good question that deserves a good, honest answer, so here goes. . . Desktop video: it costs a fortune, or a pittance, your choice; it costs a lot more than you think it will when you start; and it costs a great deal less than it cost only a few months ago. Most of the cost of doing desktop video lies in the video equipment used to augment the Amiga's graphics and video controlling functions, rather than in the Amiga itself. For video purposes, any of the Amigas will do the job, the Amiga 500, 1000, 2000, 2500, 3000, or whatever comes next and higher. You can get into not only video, but also highly productive and enjoyable computer- ing for the cost of any one of the Amigas, but you can spend several fortunes on video attachments in a heartbeat. Yet, you can also do very useful and highly professional things in desktop video with your Amiga for a very small investment. The Amigas numbered below 2000 will have some serious limitations for doing the higher levels of video, but they will work for video, nevertheless. Indeed, if you venture into professional videography, you might find it useful to have several Amigas, dedicating one or more of the inexpensive models to simple tasks like basic titling, or to serve as a backup unit to your tricked-out Amiga 2500 workstation.

To count up the tab for getting into desktop video, first pick the level of the video business that you're interested in - from "Just Having Fun" to "Animation" to "Professional Videographer." Then, pick your price. Of course, the higher levels in the video business will do the picking for you. They'll pick your pocket!

Doing desktop video at the entry level, mainly for fun, sets you back not much more than the cost of a good camcorder, a decent video recorder, some Amiga software and maybe a genlock. A few thousand dollars at the most, even at list prices. Indeed, you might already have several of these items in your collection, and if you're going to be doing mostly animation on your Amiga, you can delete the camcorder from your wishlist, perhaps in favor of some extra paint, raytracing, and animation software.

For just-plain-fun purposes, you might even be able to avoid spending money on a genlock device, depending on the Amiga model you have, and on how picky you are about the finished video. For example, if you have an Amiga 1000, you don't need a genlock to get the Amiga screen onto tape (in color). For owners of A500 and any of the A2000 series, several companies produce composite video adapters (listing for \$50 - \$100) that will provide a color, videotapeable signal from the Amiga's RGB output. Those models do not come with a color video output other than RGB, which is not directly videotape compatible. In truth, the A1000's color video output is rather poor, but if your emphasis is on "just having fun," it might be good enough. In addition, the quality you get from most RGB conversion devices varies greatly (mainly downward); it isn't usually at all what you'd want for professional video work. Still, with a bit of tweaking and twiddling with the dials, you can get acceptable work for many home video purposes. You can get major improvements by adding even a low-end genlock device, producing a higher quality color signal, as well as giving you the ability to mix external video sources with the Amiga's graphics output. The home video level of genlocks lists in the \$150 - \$300 range.

To videotape your work in a quality manner, you need a quality, videotapeable signal, and you get quality only from a quality piece of equipment, genlock or otherwise. So, if you're going to be serious about video, be serious about the amount of money you expect to spend to buy the basic tools for getting started.

SERIOUS GENLOCKING

As far as genlocks go, the "serious" ones are those that provide "broadcast quality" output. Broadcast quality means just that. "Broadcast" quality. No fudging. Electronically speaking, the more expensive units pass along exactly what they take in, without changing or degrading it, while at the same time mixing in and correctly timing the Amiga's video, too. To get broadcast quality, you have to pay for it. The going rate (Digital Creations, Neriki, Magni, etc.) is around \$700-2200 or so at list prices, subject to change (probably downward) at anytime.

The highest ticket gets you an added bonus to your genlock device: a software and hardware controller that permits fading the genlocking effect in and out. You can use these controllers (either through software or by twiddling the knobs or slider bars with your fingers) to create special transitions, and to fade Amiga graphics over moving video. These tricks can add motion to your editing, bringing your productions closer to the kind of work you're accustomed to seeing in professional videos.

For just home videos, Denise's birthday party will do nicely with a "regular" genlock, although the entry level for broadcast quality (SuperGen by Digital Creations at around \$700 street price), isn't that more expensive than the low-end units.

NEXT STOP ANIMATION

The Amiga is a high-powered animation tool for serious or "just for fun," take your pick. There are, in fact, several professional animation studios which use the Amiga exclusively for their productions. Now you understand how effective the Amiga can be in desktop video, and particularly in "desktop animation." Makes you want to rush right out and buy up some video stuff doesn't it? Amiga animators will mainly want a first-class VCR to get cranked up in desktop video, and preferably one of the so-called "editing" units capable of truly seamless, "glitchless," edits. Currently such equipment runs in the thousand dollar range. . . Indeed, for less than \$1800, an Amiga animator is pretty much in business in desktop video, all fixed up with a quality VCR and a broadcast quality genlock. Add software, imagination, and patience. Lots of patience. One of the costs of animation is time; it takes a lot of work, and a lot of time to do.

ADDING MORE VCRS

For the very small investment of tape deck, computer, genlock, and camcorder , you can do wonders at Denise's birthday parties. To be able to mix videos or superimpose graphics on videos, you need the genlock unit of your choice and at least two VCRs (Your Camcorder can count as one VCR). Three VCR's would be even nicer, but two will do. Quality counts. The better VCRs you have, the better your videos will look. If

you can have a choice, get the S-VHS or Hi-band 8mm ones. The technology in those units (for higher prices, naturally) is more useable for desktop video than even the best of the VHS machines.

If your interest is really professional use, you'd also want to spring the money for a more professional video format than consumer-level VHS. Higher (more expensive) levels of videotaping equipment will permit many generations of duplication before picture degradation becomes apparent, and VHS is lucky if it withstands just one generation. Even for home users who'll put up with lower quality than broadcast television engineers, the limit with consumer equipment will still probably be only one or two generations. With good planning, however, two generations can be sufficient for home video purposes.

The professional end of video has many, many formats to choose from, but after you leave the VHS format, you have to multiply the money by several times for only a small increase in quality. At some point in that progression, too, the "desktop" part of desktop video no longer applies.

THE PROFESSIONAL LEVEL

For a look at the more professional end of desktop video, all put together in one system, check out RGB Computer and Video Creations (they do the Deluxe Help series). The company markets a turnkey system of multiple Super-VHS tape decks, audio mixing board, Amigas, and a flurry of interfacing boxes, with "kits" ranging upward in price from a "mere" few thousand smackers. Controlled by a sweetened-up Amiga 2500 (real sweet!), the RGB professional Super-VHS editing system tops out at \$74,334 at list prices for the whole kaboodle. Don't cringe--that's small change for a major video production facility. To control the system with the Amiga, RGB produces software which manages all the video gizmos in the system, as well as providing a base for animation, post-production effects, fancy titling, and editing.

And yes, it all fits on a desktop (a very sturdy desktop!). One small part of the tab for getting started is software. You need a good script editing program (check out New Horizons' ProWrite 3.0 - \$179 list - which

has brand-new tricks that are specific to script-editing), and some storyboarding facilities, in addition to your choice of the paint and animation software. You'll also want to check into titling, and soundtrack creation, manipulation, and timing software. The Hash Enterprises product Animation:Soundtrack is an example of the latter. Remember, sound is a very important part of video. If you don't believe it, turn the sound off on your television set for an hour, and you'll be convinced.

The Amiga software shelves at your local dealer are home for a growing number of video titling, editing, single-frame-controlling, and support software. Don't worry about picking the one product that meets all your needs. It's not possible. Fit the software to your needs as close as possible, and just get as many as you have to, to do what you want done. Software's a relatively inexpensive part of desktop video. If you spend \$2000 on software, you can have everything there is, and \$2000 will hardly buy you ONE package on other computing platforms. So live a little!

FARMING THINGS OUT

So far, the tab comes up to (whirr, whirr, plink, plink). . . eight bazillion dollars, and you get change back from your IRA. But wait! You don't really need all that stuff right off the bat in professional video production. For one thing, some of the post-production services you'll want to do are available from video production houses in most larger cities on a per-hour or per-job basis. You'll have to pay (sometimes through the nose) for these services, but you might not have to own absolutely all the equipment on the list at the outset, in order to get a toehold in the market. A growing number of video service houses even offer direct support of the Amigas. The Amiga is getting to be a well-known word in the video business at all levels from amateur to professional, to broadcast, even to network.

PROSUMERS

With all the increasing interest in doing video on the desktop, the willingness of consumers to venture into video has not escaped the attention of electronics manufacturers. Sony, a major producer of video equipment for every level of the market, has

even identified and targeted a new level of video marketplace which it calls "Prosumers." That's a consumer level video enthusiast who has plenty of money and a taste for "professional" equipment. Sony hasn't invented a video market; the company merely points out one that already exists and provides a convenient name to call it. However, whether you call it "those crazy people lugging the heavy battery packs everywhere," or "prosumer videography," or "desktop video," the market is there, and the Amiga is a keystone in it.

It's likely, too, that the Amiga will have a significant effect on shaping that market's future. Spurred by the Amiga, the cost of doing video work is decreasing. Until the Amiga, for example, a genlock device was hardly something the consumer could afford, and it definitely wasn't something you could go in a store and buy. The Amiga's under-three-hundred-dollars, A-1300 Genlock changed all that. It made "genlock" the most misunderstood word in Computerese (for a while), and paved the way for the inexpensive genlock units now on the market.

THE BOTTOM LINE

Enough of all this explaining things, eh? HOW much does it cost to get into desktop video? Easy. A few hundred to a few hundred thousand dollars. As much as you want to spend, or as little as zip! As usual, though, the Law of Spiraling Expenditures applies. No matter how little you can get started for, once you're hooked, you'll find plenty of wonderful opportunities to spend lots more money.

©Copyright 1990 by Jay Gross



PRO VIDEO POST

Hints & Tips

By Jeff Karline

PRO VIDEO POST FONT MANIPULATIONS

With the release of Pro Video Post, we have added two major enhancements to our Pro Video Series of character generator software. These are pre-production picture manipulations techniques, and post-production Digital Video Effects. Although the Digital Video Effects probably will get more attention as far as 'bells and whistles' go, the value of the picture manipulation routines should not be overlooked. Yes, you can do most of the manipulations with paint and other video software! But, can you rotate or re-size a complete 16 color high resolution over-scan screen? Can the manipulation be done quickly? Is it an advantage to be able to do it all within one program, without having to re-boot or go from program to program?

In this 'HINTS & TIPS' column we'll cover how to create smaller text for dis-

claimers; larger text for banners; and textured text of almost any texture imaginable, by using the picture manipulation techniques of Pro Video Post.

All picture manipulations act on whatever is on the current screen, whether it is text, text and background, or just background picture. When finished with the manipulation, the resultant image becomes a picture that you add to your available picture list, and can call up on any page as a picture background. The page you were working on prior to entering the Manip options will be restored to you when you exit the routine. If you want to have the manipulated image available for a later session, you will need to call it up on a clear page, save it to disk, and then re-load it as a picture for that session.

DISCLAIMER FONT

1. Enter your disclaimer line, or lines, of text near the bottom of the screen. We might recommend using Clean.32vl since this style is already fairly light and is already horizontally compressed.

2. Enter the picture manipulation routines by pressing Shift F# and selecting the Manip option.

3. Your next selections should be Size, Reduce, and then Vertical. Try either the 3/4 or 1/2 size options for best results. Disregard the placement box for this technique and press return as it appears on the screen.

4. If the size routine gave you acceptable results, use the Move option to place the disclaimer on the screen, and then exit using the AddPic option. If the results don't work for you, use Reset and try different options.

POSTER OR BANNER SIZE FONTS

Pro Video Post fonts can now be as big as you would like them using the picture manipulation routines. You can stretch them vertically, horizontally, or both. The only limitation is your screen size and what is an acceptable resolution to you.

(Continued)

1. Enter your line, or lines, of text that you wish to enlarge. You can enlarge any size of font you wish, using any of the sizing options. However, for best results to obtain 96vl, 128vl, and 160vl; we would recommend using 48vl for 96, 64vl for 128, and 80vl for 160. Then use the 2.0x enlarge option.

2. Select Shift F3 Manip option. Then select Size, Enlarge, and Vertical and/or Horizontal options.

3. Next select the enlargement factor. You then will be shown a marker box indicating the portion of the screen that will be enlarged. Use the cursor keys to center your text within the marker box. If your text will not entirely fit within the marker box, you will need to select a lesser enlargement factor.

4. After the re-sizing, use the Move option to place the text.

You can enlarge more than once, but to retain acceptable resolution we would not recommend enlarging greater than 2.0x.

BIT MAPPED TEXTURED FONTS

Pro VideoPost fonts can look like Wood-Grain, Marble, Naugahyde, or have any texture added to them from any IFF picture image. It's really simple, and here's how!

1. Digitize or draw a textured IFF screen. Although you can use all 16 colors, we recommend using 4, 8, or 12 so that you have other colors available for edge, shadow, or other fonts on the same page.

2. Load your IFF textured picture into Pro Video Post and call it up for display on a blank page. Using the Ctrl 's', or Manip-Snap, routine snapshot your IFF image to the snapshot buffer.

3. Fill the background (Using F10) of any blank line with a color. Do not use the screen color, any color used in your picture, or any color that you are going to use for character edge, shadow, etc.

4. Create a Quick background (Shift F4) to fill the screen with this line background color.

5. Make shadow, edge, and alias color selections first, then select your font style and select color register #0 (screen color) for your font color.

6. Enter the text you wish to texture with the picture image. At this point, your text should appear as screen color with appropriate edge and shadow selections, and the screen filled with your quick background color.

7. After you have finished entering your text, you will combine it with the IFF image you snapped earlier. Select Shift F3, Manip, and then Snap+ option. The Snap+ option will ask you for a priority option - select Current. You will be given screen placement directions, which you should disregard for this technique. When you see the current screen flashing with your IFF image screen, press return.

8. You now should have filled the font structure with the IFF picture image and are ready to eliminate the quick background color that was used as a mask. Select the Color option from the Manip menu. Cursor over to the quick background color and press return. Then cursor over to the screen color (register #0 - far left side) and press return. That's it!

9. Use the Move option to place the text appropriately on the display.

10. Exit the Manip routine adding your new picture of textured fonts to the picture list.

O.K. EXPERIMENT AND HAVE FUN WITH PRO VIDEO POST. SEE YOU NEXT MONTH.

©Copyright 1990 by Jeff Karline



Desktop Video! videos

from the publishers of
Desktop Video! Newsletter

"Videos designed to show you how to set up your own low-cost desktop video system . . . produced by real people using desktop video in the real world."
- Video Marketing Letter

DTV #4 - Desktop Video & the Amiga. A hands-on guide to setting up your own desktop video system using the Amiga computer. Covers equipment selection & hookup, reviews and demonstrations of the best software, studio design, and lots of practical advice on getting the most for your money while avoiding costly mistakes. 120 minutes. VHS. \$30.00.

DTV #5 - Desktop Video for Profit. A 'guerilla' video that shows you how to earn thousands from your DTV productions. Includes what type of videos to produce, how to find clients, how to research a project, where to sell your videos, how much to charge, setting up a duplicating system, much more. 120 minutes. VHS. \$30.00.

Order both these videos and save \$10.00 plus receive 6 months of the Video Marketing Letter **FREE!!!**

Do You Have questions about Desktop Video? Call our FREE DTV technical Hotline for answers.
1-501-321-1429 weekdays 9-4 CST.

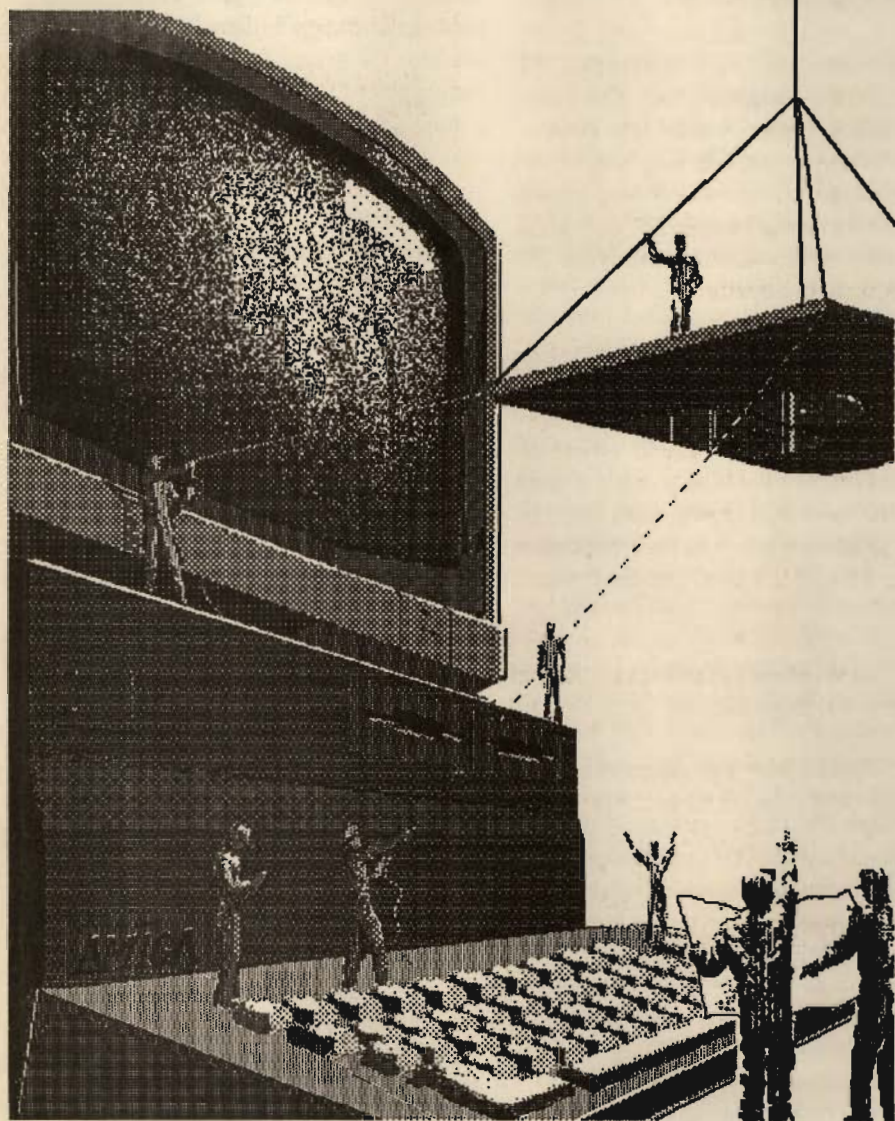
Call for more information and your free sample of the **Video Marketing Letter**. We offer a **money back guarantee**, and accept Visa, MC, personal checks, UPS COD. Next day Air available.

Group M Productions

100 Bridge St., #27
Hot Springs, AR, 71901
1-501-321-1845



Tutorial!



Installing Software *on your* Hard Drive!

by Jim Plant

Much has been written about the advantages of adding a hard drive to your computer system. Very few peripherals make such a noticeable impact on your productivity. Unfortunately, not nearly as much has been written on the subject of installing software on the hard drive. Some software packages lend themselves to convenient installation procedures; sometimes as simple

as dragging an icon from one window to another. Many times, however, a program requires more preparation and effort to transfer properly. In this article we will discuss the various tools and techniques needed to handle even the most obstinate installation procedure.

As always, having the right tool for the

job is a must. For this job, some type of disk utility program is almost a necessity. It is possible to effect the entire installation process from the Shell or CLI, but a disk utility will make your life a whole lot easier.

With the disk utility installed, you are ready to attack the installation process. Begin with the obvious; read the HD installation section of the manual. Some programs come
(Continued)

with some sort of install file. You should try this first. Don't be surprised, however, if the installation program fails. It is almost impossible for a developer to write an install program that anticipates every possible HD configuration. Fortunately, there is a systematic method that you can use to achieve installation success.

We'll use Pro Video Gold from Shereff Systems as the guinea pig in our installation test case. PV Gold makes an excellent example as its HD installation requirements are precise and extensive. In outlining the steps needed to properly install PV Gold on the hard drive, we will cover several effective installation concepts.

For academic purposes we will assume that you are going to install PV Gold on the dh1: partition of your HD. It doesn't really matter which partition you install it on, as long as there is enough disk space available and you know the number of the partition (i.e. dh0: dh1: dh2: fh1: etc.). Many times your HD partitions are named rather than numbered, and it may be difficult to know what the actual partition number is. If this is the case, enter the Shell or CLI and type in the command "info" (don't type the quotes). This will give you a listing of all mounted drive names and numbers (along with other information).

Armed with this information, you are ready to begin the actual file transfer. From Diskmaster, or whatever utility you are using, list the contents of the PV Gold disk in one window and the contents of dh1: in the second window. Activate the dh1: window and create a new directory for PV Gold. Within Diskmaster use the MakeDir command located at the bottom of the tool strip. It doesn't matter what you name the directory, as long as you remember (or write down) exactly what it is called. Further into the installation you will need to indicate the exact directory name. For our purposes we will call our new directory ProVideoGold.

Enter this new directory (which will be empty), then enter the second window that has the PV Gold files listed. Select the PV Gold files you would like to transfer into the new ProVideo directory. You needn't select every file listed. Most of the system directories on the PV Gold disk (such as the "c", the "s", the "libs", and the "devs" directories)

already exist on your hard drive boot partition. They need not be duplicated into your new ProVideoGold directory, as they would only take up extra hard disk space. Occasionally there are files within these directories that are essential for proper software installation. It is better, however, to copy these few important files from the floppy disk into the active system directories on your HD boot partition. (More on this later). For our current purposes, copy all the files from the PV Gold disk except for the just mentioned system directories.

Once this transfer is complete, begin the first test phase of the installation. Pro Video Gold requires a lot of Amiga system overhead to work. It will not load properly from the Workbench. It must be loaded from the CLI. (Users with one megabyte of Chip RAM and one megabyte of Fast RAM can upgrade to Pro Video Post, which has a screen icon and can be loaded from the Workbench environment).

Begin the test by rebooting your system. At about the half-way point, interrupt the boot process by hitting "Ctrl D" (don't type the quotes). The timing of the interrupt is somewhat sensitive. You want to break in a little before the Workbench comes up on the screen. A few seconds after the time and date is displayed will usually work just fine. From the CLI prompt, make the Pro Video Gold directory the current one. At the prompt type "cd dh1:ProVideoGold" (no quotes). Enter it exactly as it is listed here and then hit the Return key. At the new prompt, enter your unique PV Gold registration number (example: pvp/prog a000 or pvp/prog c123). After a moment, a requestor will appear that says "Please insert volume JDK in any drive".

This occurs because somewhere within the Pro Video Gold program a request is made for that particular volume name. The program does not know that you have moved the files into a new directory on a hard drive partition of a different name. Fortunately, there is a way to let the program know that the files it is seeking now reside in a different location. At the CLI prompt, type the command:

"assign jdk: dh1:provideogold"

Be sure to enter it exactly as it is listed here. The command is not upper/lower case sensitive, but the spelling and spacing are critical. With this assign command entered,

every time the program encounters a request for volume JDK: it will automatically look in the dh1: partition, in the ProVideoGold directory.

The assign command is probably the most important concept to understand for effective HD installation. Because developers cannot anticipate the countless combinations of hard drive partition numbers and directory names, they depend on the correct application of the assign command to redirect the program's inquiries to the proper hard drive location. You'll run into this situation many times in the course of transferring software to the hard drive. Now, let's continue with our Pro Video Gold installation.

After entering the assign command, we are ready to continue testing by again entering your PV Gold registration code at the CLI prompt. If you are lucky you will see the fonts being quickly loaded, and shortly thereafter you will find yourself in the PV Gold environment. If you're not lucky you will see an error message that says, "unknown command fastmemfirst". The error occurs because the program needs the "fastmemfirst" system memory management file to work properly. This file can be found in the "c" directory of the original Pro Video Gold floppy disk. From Diskmaster it is an easy task to copy the "fastmemfirst" file from the "c" directory of the floppy to the "c" directory on your hard drive boot partition.

Once this is done, reboot your system and re-test your installation. Here are the steps:

1. Interrupt the boot process a few seconds after the date and time appear.
2. Activate the proper directory by typing the command "cd dh1:provideogold" at the CLI prompt. (Return)
3. Set the proper assign by typing the command "assign jdk: dh1:provideogold". (Return)
4. Enter your unique PV Gold registration code. (Return)

At this point you will have properly installed PV Gold on your hard drive. Of course, every time you want to load it you

will have to repeat the process outlined above. This isn't the most elegant installation, but it works and it is a lot better than waiting for the program and fonts to load from a floppy disk. If this isn't clean enough for you, there is a PV Gold installation method that completely eliminates the need to enter CLI commands; if you're not afraid to roll up your sleeves and delve further into AmigaDOS.

This process involves creating a batch file that duplicates the CLI commands we outlined earlier, and then modifying the startup-sequence to automatically activate the new batch file. This may sound intimidating for those with little AmigaDOS experience, but it is really a very simple procedure.

First, create a batch file by entering the CLI command "ed dh0:c/gold". This command creates a new file called "gold" in the "c" directory of partition dh0: (assuming that your boot partition is called dh0:). You are now in the AmigaDOS editor where you can enter single line instructions that will later be executed sequentially. Use the cursor keys to move about the "ed" environment, as your mouse is temporarily inactive. Enter the following commands on separate lines:

```
fastmemfirst
assign jdk: dh1:providgold
cd dh1:providgold
pvp/prog c456 (enter your unique PV
Gold code)
```

When finished, hit "Esc x" to save the file and exit from the ed environment.

Our batch file is complete and we can test it by re-booting and interrupting the startup-sequence in the same manner as we did earlier. ("Control D" a few seconds after the date and time message should do the trick). At the CLI prompt, type the command "execute gold". If you've interrupted the startup-sequence at the right place, you should soon see PV Gold loaded and ready. If you should get an error message, type the command "cd dh0:c" and then re-execute gold.

You could stop here and consider the installation complete. Now, loading PV Gold would only require the proper interrupt

and the execute command. If you are a heavy PV Gold user, you might want to consider completely automating the process. This can be done by adding several lines to the startup-sequence that automatically interrupt and execute the batch file.

Your startup-sequence can be found in the "s" directory of your boot partition. You may want to make a backup copy of the startup-sequence in another directory in case you accidentally corrupt the original file. Enter your startup-sequence from the Ed command in Diskmaster, or by entering at the CLI prompt:

```
"ed dh0:s/startup-sequence"
```

If you've correctly entered the command, you will see the startup-sequence fill the screen. Using the cursor keys to move about (remember the mouse is inactive), browse through the commands until you find the command "failat 11" (the number may be different). Change this line to read "failat 20". You can use "Ctrl B" to delete the line or backspace over the existing line. Hitting the Enter/Return key at the end of this line will create a blank line directly below it. Cursor to the beginning of this line and enter this sequence of one-line commands:

```
ask "Load Pro Video Gold? (Y/N)"
if warn
execute gold
else
endif
```

Use "Esc x" to save the changes and exit the startup-sequence. Once the save is complete, reboot your system. If everything has been entered correctly, your system will interrupt itself and prompt you for a Y/N response to load Pro Video Gold. If you enter "Y" it will execute the previously tested batch file and load the PV Gold. If you enter "N" it will continue the startup process and take you to the Workbench.

The concepts and techniques we used to correctly install PV Gold can be used to install other stubborn application programs. If you wish to further explore AmigaDOS, you may want to pick up a copy of "The Amiga Companion" by Rob Peck. Happy Installations!

© Copyright 1990 by James C. Plant

"This issue
reached
10,000
Amiga-
Video users"

ADVERTISE!
ADVERTISE!
ADVERTISE!



(408)
252-0508

DataTime

A company consisting of Amiga users dedicated to bringing you the finest in sales, service and support of all Amiga products

Toll Free Order Number:

(800)321-3077

Orders Only
(USA and Canada)

Video & Graphics

Animagic.....	65.00
Broadcast Titler.....	195.00
Butcher 2.0.....	25.00
Caligari Consumer.....	168.00
Color Splitter.....	130.00
Comic Setter.....	65.00
Deluxe Paint III.....	99.00
Deluxe Photo Lab.....	105.00
Deluxe Video III.....	105.00
Design 3D.....	65.00
Digi-Paint III.....	65.00
Digi-View Gold 4.0.....	149.00
Digi-Works 3D.....	88.00
Director.....	49.00
Director's Toolkit.....	25.00
Easy Titler.....	34.00
Express Paint 3.0.....	99.00
Framegrabber 2.0.....	72.00
Image Link.....	290.00

Interactor.....	69.00
Interchange.....	38.00
Interfont 1.2.....	80.00
Lights Camera Action.....	55.00
Modeler 3D.....	68.00
Opticks.....	72.00
Page Render 3D.....	110.00
PageFlipper Plus F/X.....	110.00
Photon Paint 2.0.....	104.00
Photon Video EDLP.....	385.00
Pixmate.....	48.00
Pro Video Fonts (ea.).....	75.00
Pro Video Plus Gold.....	199.00
Scene Generator.....	28.00
Sculpt 4D.....	395.00
Turbo Silver.....	105.00
Turbo Silver Terrain.....	20.00
TV Show.....	74.00
TV Text Professional.....	110.00
Vid Gen.....	99.00
Video Effects 3D.....	140.00
Videoscape 3D.....	120.00

Fonts & Clip Art

Aircraft Pics.....	34.00
Alpha fonts.....	15.00
Asha's Fonts.....	62.00
Bird Pics.....	22.00
China Pics.....	25.00
E-Clips.....	74.00
Future Design.....	24.00
Headline Fonts.....	53.00
Headline II.....	53.00
Kara Anim Fonts 1.....	34.00
Kara Anim Fonts 2.....	34.00
Magnetic Images (1-8).....	15.00
Map Pics.....	42.00
Masterpiece Font Set.....	165.00
Medialine Fonts.....	25.00
Newsletter Fonts.....	32.00
Subhead Fonts.....	53.00
SuperClips.....	22.00
Zuma Fonts.....	25.00

Misc.


Can Do.....	99.00
Cross Dos.....	20.00
Dunlap Utilities.....	55.00
Express Copy.....	30.00
Icon Magic.....	55.00
Microfiche Filer +.....	115.00
Online Platinum.....	65.00
Pagestream.....	129.00
Pagestream Fonts (ea.).....	30.00
Palette Printer.....	20.00
Pen Pal.....	99.00
Project D.....	35.00
Quarterback.....	48.00
Raw Copy.....	37.00
Scribble Platinum.....	99.00
Superbase Pro.....	225.00
VoRecOne.....	125.00
X-Cad Designer.....	110.00
X-Cad Pro.....	330.00

Video Special

Now buy Deluxe Photolab and Deluxe Video III for only \$99.00! This is the perfect opportunity to purchase two of the best video/graphics programs for the Amiga. Create your backdrops using Deluxe Photolab then synchronize animations, sound effects and music in Deluxe Video III. Don't let this opportunity get away!

- Visa or Mastercard welcome
- We ship FedEx or UPS
- We carry the full line of Amiga products
- No returns without authorization
- Product support and order status, call (408) 245-1285
- Send checks or money orders to: 743 Macara Ave. #705 Sunnyvale, Ca. 94086

Hardware Specials

for  readers only!

Supergen genlock.....	650.00
MiniGen Genlock.....	225.00
Framegrabber.....	550.00

Public Domain Like You've Never Seen!

PREMIER SOFTWARE

- ▶ User friendly
- ▶ Ready to run
- ▶ Icon based

AMIGA™
PUBLIC DOMAIN AND
SHAREWARE PROGRAMS

*Disks organized by topic.
Buy only the software you want.
Games, Demos, Icons, Utilities,
Pictures & Video Tools.*

Send \$3.00 for catalog on disk to:

Premier Software
P.O. Box 3782
Redwood City, Ca. 94064
or call: (415) 593-1207

Public Domain Like You've Never Seen!

PREMIER SOFTWARE

- ▶ User friendly
- ▶ Ready to run
- ▶ Icon based

AMIGA™
PUBLIC DOMAIN AND
SHAREWARE PROGRAMS

*Disks organized by topic.
Buy only the software you want.
Games, Demos, Icons, Utilities,
Pictures & Video Tools.*

Send \$3.00 for catalog on disk to:

Premier Software
P.O. Box 3782
Redwood City, Ca. 94064
or call: (415) 593-1207



370 Altair way #207 Sunnyvale, Calif. 94086 ph# (408) 252-0508

Dear AVID Reader,

Welcome to the second issue of AVID, The Amiga-Video Journal. To our charter subscribers we say, "Thank You". It is sometimes a risk to invest in a new Amiga publication. We applaud and appreciate your enthusiasm.

To our new readers we say, "Join Us". We are committed to providing valuable, up-to-date Amiga/video news and information.

AVID is available only by subscription. Don't take the chance of missing a single issue! The subscription rate is \$34 for 12 monthly issues. As an added incentive, we'll send you a free copy of Premier Software's Video Tools PD disk when you subscribe.

We hope you have enjoyed this issue and we look forward to having your support as an AVID subscriber.

Sincerely,
Jim Plant
Editor/Publisher

(please print)

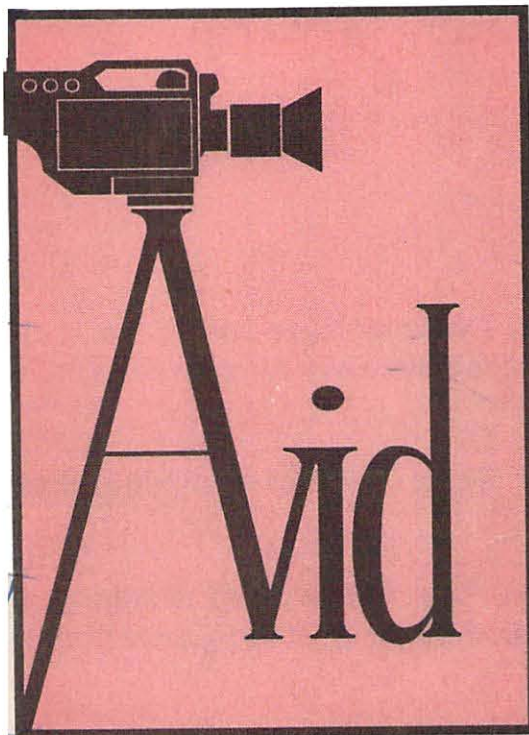
NAME _____ DESCRIBE YOUR AMIGA SYSTEM:

STREET _____

CITY _____

STATE _____ ZIP _____

☐ Yes I'd like to become an AVID subscriber. (Enclose check for \$34 made payable to
AVID PUBLICATIONS)



MAY 1990



Amiga Video

370 Altair way #207
Sunnyvale, Calif.
94086

BULK POSTAGE RATE
U.S. MAIL
PAID
SUNNYVALE, CA
Permit No. 90