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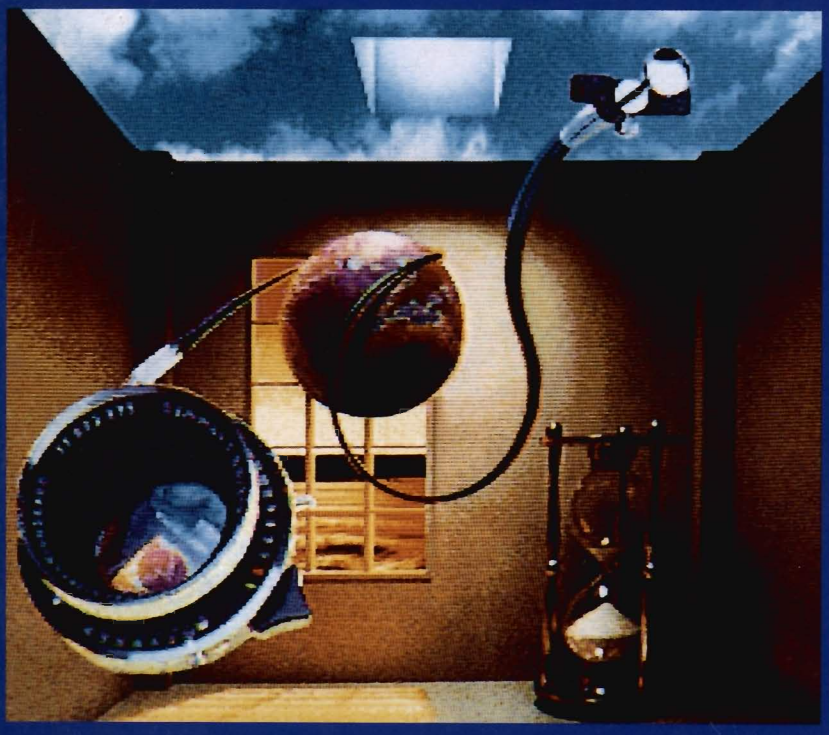

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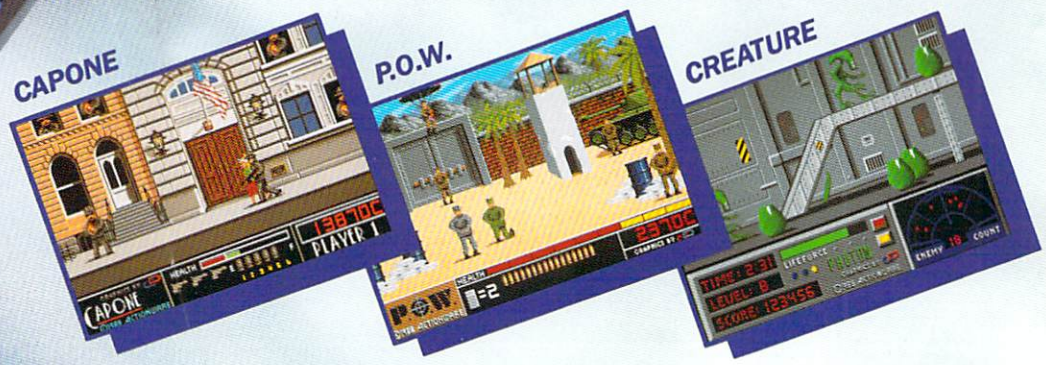

Actionware Corporation
38 W 255 Deerpath Road Batavia, Illinois 60510

August 1988
Volume 2
Issue 1

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The Amiga Sentry is published monthly by TAS Publications, 706 Old Marple road, Springfield, PA 19064. Subscription rate is $24.00 (US funds) per year in the US, $30.00 per year (US funds) in Canada. Phone (215) 544 - 6394. Application for Second Class Postage pending at Media, Pa. Postmaster: Send address changes to The Amiga Sentry, 706 Old Marple Road, Springfield, Pa. 19064.

On Point

Notes from editor, Tom Bucklin

This working stuff has got to stop. I know I shouldn't complain, but this is getting out of hand...

I recently got to take a fews days off (4 to be exact). The real novelty is that they were in a row! Off I went to the deep woods of Wisconsin to a place of serenity and seclusion. Located beside a peaceful, crystal clear lake, I was able to sit back and think about nothing but.....work! Wait a minute, who packed that? I distinctly remember *not* packing anything to do with work. It just sort of stowed itself away among the luggage without my permission.

Well I finally had to come to terms with the fact that I was suffering from *High-Tech Withdrawal*. There's no barriers of age, race, sex, or creed here. You find yourself reaching for a computer, or even a synthesizer, but coming up empty. As a matter of fact, there seemed to be about two radio and TV stations in that area, the latter running reruns of "Mr. Ed." Although I truly enjoyed the time there, there was something satisfying about diving back into the latest Amiga developments.

Speaking of latest developments, we have some exciting ones for you this month. Lights! Camera! Action! from Aegis appears in our pages this issue. LCA is a powerful script-driven utility for integrating sounds with graphics. We also cover the release of Deluxe PhotoLab. Gary Gehman reviews the three programs within this program in depth, and examines their effectiveness.

On the hardware side, August's reviews bring information about products by Microbotics, Mimetics, Progressive Peripherals, Haitex Resources, and Great Valley Products. The Mimetics Frame Buffer is one of the most talked about products in the Amiga community, and rightfully so. When you start using terminology like, "16 million colors" around Amiga enthusiasts you could have a stampede on your hands. Microbotics has released their SCSI module add-on for the Starboard, as well as an adapter so that you can now install the Starboard within the A2000. This SCSI module is currently the least expensive way to gain SCSI compatibility.

In typical style, the folks at GVP are really cranking out the products these days. Their new Hard Card 80 will no doubt answer the needs of "power users" out there.

The Access 64 module from Progressive Peripherals, also in this month's issue, allows you to use 15xx drives and printers as hardware devices with your Amiga. So dig out all those loud drives for a workout, Amiga style.

In closing this month, I'll mention what a pleasure it is to label this issue "Volume 2." Thanks for making it possible.

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From the Frontline

New Applications for the Amiga as Video Controller

What was initially intended as just a grand opening celebration for RGB Video's new retail store turned into a miniature Amiga exposition recently. Several Amiga software and hardware developers were on hand to show their new products. RGB is headed by the team of Bob Gilbert and Rod Molina. As long time video production people, Bob and Rod were proud to invite the press to the opening of their Amiga retail, productivity, and learning center. But the real news here was in a back room filled with video equipment and with several Amigas, all atop an 8 foot cabinet affectionately dubbed "The Wall." RGB demonstrated a beta version of their upcoming professional video editing software package by doing what is called an "A/B roll" edit (an A/B roll edit involves simultaneous editing between two source VCRs to a master). Using a unique graphic interface screen, an Amiga 2000 was programmed with edit points for each of three Panasonic AG-7500 Super-VHS video editing decks using a form of information known to professionals as SMPTE. It is a form of recorded information on the videotape that gives each frame an absolute address so that every frame is unique and can be accessed individually. By using the mouse to activate certain screen gadgets, each of the VCR's was shuttled to scan the source tapes for desired footage. Once all the necessary information was entered through the interface, a gadget on the screen was to start the edit. From that point, all human intervention ceased. All machines were cued up to their respective points and the editing began to take place. Prior to the beginning of the edit, a production switcher was also set up to allow the video to dissolve from one source to the other during the edit at a particular time. This effect was then automatically performed at its set time to complete the A/B roll. A fully automated video edit had just taken place through the use of an Amiga. For more info:

RGB Video Creations, 2574 PGA Blvd, Suite 104, Palm Beach Gardens, FL 33410 (305) 622-7049

Deluxe Photo Lab

A Powerful Art Studio Stuffed in a Box

by Gary L. Gehman

Although packaged together as a part of the Electronic Arts Deluxe family of productivity software, Deluxe Photo Lab is actually three separate programs, each of which delivers astoundingly powerful features. The programs are Paint -- a full-featured HAM and EHB (extra half-brite) painting program; Colors -- a marvelous image adjustment tool for altering palettes, chopping bit-planes, etc.; and Posters -- a printing utility that will create full-color output from any preferences printer at up to 10 x 10 feet!

Posters

Because it is the easiest dealt with, I will begin by describing Posters. Posters opens into a simple 4-color screen containing a 10 x 10 grid of rectangles, each roughly the same aspect-ratio as a standard letter size sheet of paper. This is, in fact, what they are meant to represent. Along the right side of the screen are click-able gadgets to adjust Poster Width, Poster Height, Page Width and Page Height. Using these gadgets, you can customize the Posters grid to faithfully represent your own printer's characteristics. For instance, I own a Quadram Quadjet ink-jet printer that uses continuous feed roll paper. Since the roll is standard 8.5 inches wide, I can leave the Page width set to 8.5 inches. However, since I do not have to worry about where a page breaks, I can set Page height to whatever arbitrary depth value I choose. If I want a 4 x 3 foot poster, for instance, I can set page height to 36 inches. Unfortunately, the only way of making this setting is to hold down the increase depth button while the number counts up in increments of 1/10th. of an inch. It would have been much more convenient to provide a direct-entry string gadget in each of the gadget windows. Posters' menus allow for

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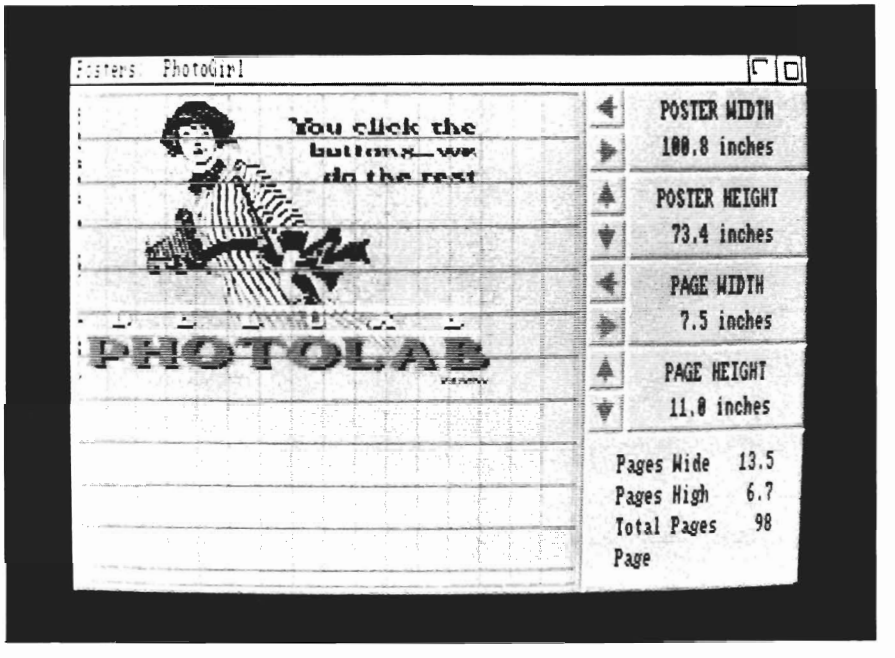
The DPhoto Poster Maker can create posters of Amiga art up to 10' by 10'



a picture to be loaded into a virtual bit-map in RAM. This is an important concept to grasp, because all three of Deluxe Photo Lab's components rely on virtual images rather than CHIP RAM images. As many users will have learned by this time, the Amiga's display capabilities are limited by the amount of memory that can be accessed by its special video display chips. This, understandably, is called CHIP RAM. There is not a great deal of CHIP RAM in the Amiga; existing models have up to 512k of CHIP, and the next generation of custom chips will allow for up to 1 Megabyte of CHIP RAM.

Deluxe Photo Lab works its way around these limitations by building its images in the much larger memory space called FAST RAM. Then, whatever part of the image is required for viewing or editing is copied into CHIP RAM for display. In no case is this ever more than a single screenful. If you scroll across the picture, a different sector of the FAST RAM image is shifted into the CHIP RAM display area. This is a very neat, very productive process.

And, while all three of Deluxe Photo Lab's programs use this technique, Posters uses it to the highest degree. Posters' virtual image can be up to 10 feet by 10 feet. When you load a picture into Posters, it appears as a gray shaded rectangle that fills up the full width of the tiny rectangle in the upper-left-most corner of the Posters grid. This represents the picture at a single page-width. To resize the poster, you simply use the mouse to grab the lower right-hand corner and pull it out to fill as many page-widths as you like (up to 10).

Posters retains your image's proper aspect ratio by default. This means that for every inch wider you make your picture, you are also making it an inch deeper. There is a menu selection that allows you to turn off this aspect-ratio locking, thereby allowing for distortion effects.

There aren't too many other menu selections to be made: The Project menu simply allows for Loading, Printing, Quitting and the usual programming credits "About" screen. The only other Menu column is Mode, with three entries: Preview, Aspect Ratio, and Horizontal Printing. We've already talked about Aspect Ratio. Preview examines the picture bitmap and produces a 4-color representation in place of the simple gray rectangle on the Posters Grid. Horizontal Printing allows you to turn the image sideways and print it out as a series of horizontal strips rather than vertical ones.

When you select Print from the Project menu, Posters puts up an initial requester that allows you to select the number of copies to be printed. There are also Start and Stop gadgets for the specification of which particular "pages" or tiles out of the overall mosaic you wish printed (for instance, your printer might have run out of ink while printing a large mural. Using the Start and Stop gadgets would allow you to print just the last two missing sections of the poster). If your printer uses cut sheets rather than continuous feed paper, Posters will allow you to pause and/or eject (Form Feed) after every page or every column while printing.

Posters also contains two other powerful printing options: Smoothing and White Background. When selected, white background translates all instances of Background Color (palette color number 0) into white. This is a major ink-saving feature, but one that can definitely alter the look of your print depending on how the original image uses color 0.

When you elect to print out a gorgeous full-screen Amiga graphic as a 10 foot mural, there is no escaping the granularity of the Amiga's pixel display. After all, the best resolution achievable is only 640 x 400 or 256,000 individual dots. If we spread those out over ten feet of space, we must inevitably wind up with matchbook-sized pixels. These can leave distinctly blocky edges and "jaggies" that are visible from across a crowded room.

Posters comes to the rescue, however, by providing a Smoothing option to round off those sharp corners and replace them with averaged blends of juxtaposed colors. The Smooth selection applies the same sort of

anti-aliasing algorithm found in Paint (and other HAM programs) for screen display to the larger arena of oversize printing. The result is a very pleasing softly mottled poster that looks great from any distance.

Posters doesn't do anything more than print wall-sized pictures. But that alone is plenty. The only negative one could find about Posters (and it's one common to Paint and Colors, as well) is that you have to use buttons to make changes to parameters where it might be more convenient simply to type the desired number into an appropriate gadget. Otherwise, Posters is a fine art tool and one that is exceptionally well behaved. As an example of this, I began a poster printing session and then switched screens, so I could experiment with Posters' companion program Paint. Paint loaded just fine and I proceeded to load a picture to play with. In the middle of this operation, I decided it wasn't the picture I wanted, so I tried to open a new screen.

This was about all my A2000's CHIP RAM could take and Paint proceded to crash out with a "Software Error -- Task Held" alert. I sat and waited for the inevitable GURU and the loss of all my work. It never happened. Even though Paint had crashed its process and system resources, Posters remained happily unaware that anything was wrong and proceeded to print out the entire poster! The Amiga world has far too few programs with such staying power. It's not uncommon for a printing program to crash the machine even when it's the only thing running.

PAINT

If Deluxe Photo Lab fails to sell in the hundreds of thousands of units, I will blame the product's Title. It's possible that many average users will prefer to buy one of the popular painting programs rather than invest in what sounds like a highly technical tool for the vertical Image Processing market. That would be the wrong assumption to make. Photo Lab's Paint is a full-fledged

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painting program on a par with MicroIllusions' Photon Paint, New-Tek's Digi Paint and Electronic Arts' own Deluxe Paint II. While it may lack one or two of the most extraordinary features of these other programs, it more than makes up for it in other areas. In fact, Paint could easily be seen as the much awaited successor to Deluxe Paint.

Paint works in all possible Amiga resolution modes (320 x 200 32 color, half-brite and HAM; 320 x 400 32 color, half-brite and HAM; 640 x 200 16 color; and 640 x 400 16 color). It loads any of these and -- unlike Photon Paint or DigiPaint -- can save to disk in any of these modes as well. Paint will even allow you to open separate screens of differing resolutions and cut and copy elements back and forth between them. Such brushes or objects are automatically reformatted on the fly, with a high degree of smoothing or color-correction performed in the process. It's even possible to load a low-resolution non-interlaced image into a HAM interlaced screen and have the program interpolate information that was never even there in the first place!

Like Posters, Paint keeps its primary image in FAST RAM and swaps portions of it into CHIP RAM for screen display. This allows for page sizes limited only by the amount of memory available to the system. The page may therefore be any size and you move around in it via the cursor (arrow) keys. As a result, Paint provides for Overscan only as an optional viewing mode. This might anger some of the video enthusiasts, but it conserves on run-time memory, thus allowing for more of the heavy-duty work to be done. In any case, a painting created at 375 x 450 pixels will be displayable in Overscan on any program capable of using Overscan.

The DPhoto paint program features a similar user interface as that of Deluxe Paint

Paint's Toolbox occupies a horizontal bar along the top of the screen just below the menu/title bar. It is a comprehensive, if slightly oversized, mechanism filled with lots of goodies. First, there's the basic 32 or 16 color palette, with color pots representing the actual color registers of any given image. There's also a secondary, more elaborate palette screen that lives in the background and can be called up to allow selection from among the entire 4096 color HAM range. In addition to the spectral HAM colors and the 16 register values, this screen also has a series of 128 separate color pots called a Paint Set. While colors in the paint set aren't actual palette colors, they can be used as holders for particular HAM shades that you might want to use over and over again. They are also useful for mixing individual colors.

Next to the palette in the toolbox bar are squares representing the currently selected foreground and background colors. Above these are the actual RGB color values for the colors selected. Right of these is a decimal readout of X and Y mouse coordinates. These begin by describing the 0,0 position of the screen, but once a drawing operation is begun, they reset to mark the mouse position as 0,0 in order to

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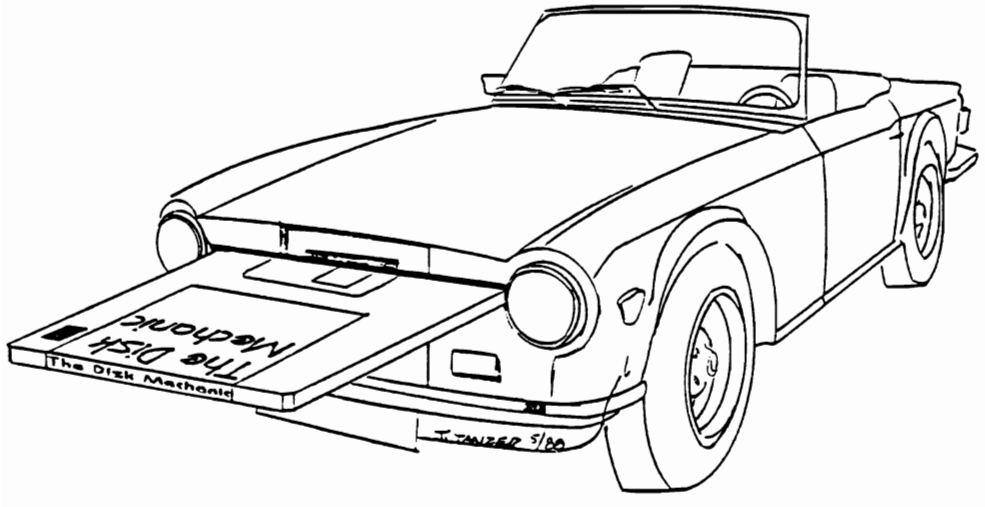

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Deluxe PhotoLab

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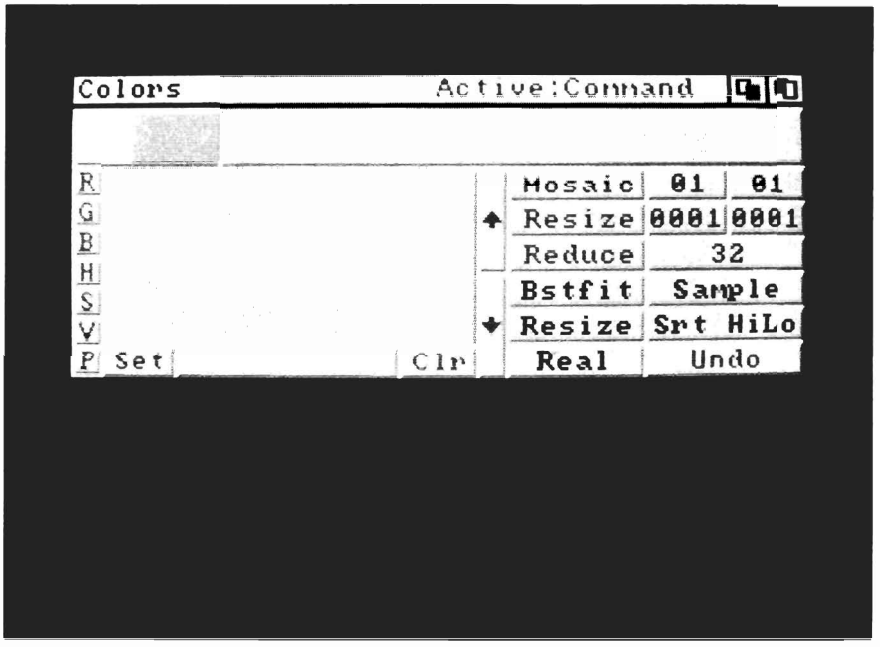
provide accurate measurement for the particular operation underway. Paint has many of the same standard drawing tools as Deluxe Paint. There are Dotted Freehand, Continuous Freehand, Straight Line and Bezier Curve tools. Paint's airbrush has a variable nozzle affected by selecting the tool with the right mouse button. This allows the user to draw a filled circle representing the airbrush coverage area. Paint has full access to Amiga's fonts and can reproduce them in plain, italic, underline and boldface styles. Like other painting programs, text must be clicked into place, may be edited on a line-by-line basis using the backspace key, and becomes fixed into place as soon as the carriage return is hit.



The "Colors" program is useful for conserving your resources

The remainder of the functions in Paint's toolbox are remarkably well multiplexed. For each of the Shape tools (Rectangle, Circle, Free-form and Polygon) the functions vary depending on whether you use the left or right mouse button, or whether you click in the top or bottom half of the tool. For instance, If you click with the left mouse button in the top half of the Circle, you get a hollow circle tool. If you click with the left mouse button in the bottom of the circle tool, you get a filled circle. If you use the right mouse button to click on the bottom half of the gadget, you will be calling up a custom fill requester that allows you to specify solid/pattern/gradient fills and what kind and degree of dithering you might want. Each of the filled objects has this same kind of special fill selection requester. Click on the top of the freeform shape tool and you can draw any soft-sided amorphous shape to be filled. Click on the bottom and you will have chosen the filled polygon instead.

There is a logical connection between these two tools and it makes perfect sense for them to share the same gadget. Likewise, the scissors tool represents both the rectangular and freeform custom brush selection tools. Clicking in the top of this gadget selects the rectangular selector and this may be used to cut out any square-edged field as a brush. Clicking in the bottom half allows you to trace any irregularly shaped object and have that become your custom brush. Next in line comes a fairly standard magnifying lens tool. When selected, it fills the right half of the screen, much like Deluxe Paint II's magnifier. This one, however, seems to allow for the highest degree of zoom of any magnifier I've seen.

Finally, There are the standard Clear and Undo buttons that each do the predictable thing. Paint has quite a robust set of keyboard equivalents for virtually every menu-selectable and toolbox operation. These are detailed in an appendix at the back of the manual.

Among the menu entries of interest is the already referred to Load At option that allows you to force a disk-file into a screen of any resolution. There's also a Save From selection that allows you to save just a portion of a picture by specifying new X,Y origin and new width and height

values. It's hard to imagine this being very frequently used (particularly if you have to spend much time calculating these new coordinates), but at least it's comforting to know that such an ability exists.

Brushes may be loaded, saved, remapped and rotated. They can also be resized in a number of novel ways. When a brush is selected, you can opt to use Resize Draw. This will allow you to trace out the space into which you want the brush scaled and it will then automatically redraw the brush into that space. Resize Draw does not affect the brush itself, however, simply the reproduction of it on the page. Alternately, you can use Resize to change the size or shape of the actual brush. Paint even has a Brush Warp function that is similar to Photon Paint's surface mapping abilities. Unfortunately, this only allows for very limited use of the brush as a pattern for certain of the object fills.

Similar to Photon or DigiPaint, Deluxe Photo Lab's Paint module has 18 different painting modes, each of which will mix in differing amounts of the chosen color. You are also able to lock the screen, such that your changes will affect all the pixels, just those that are in the background color, or just those that aren't in the background color. In addition, Paint has a Repeat command (like DigiPaint's Again), a feature sadly lacking in Photon Paint. One of the nicest features of Paint, however, is the Shade control. This is similar to Photon Paint's Blend control, but offers a little more flexibility. When you select the Shade control from the Mode menu, you get a secondary requester with a proportional viewscreen and three sliders. By using the mouse, you are able to variably position a pixel representing the chosen degree of highlighting anywhere on the screen. There's also the provision to specify whether your highlight is going to be a specific point, a horizontal or vertical band, or evenly distributed. The first of the slider controls allows you to set the dithering level. The second slider determines a low threshold for the shade effect and the third determines the high threshold. In this way, you can specifically set a highly dithered blend from blue to red that will begin at 23% red at the extreme lower left corner of a blue field and gradually bleed into a 94% red spot in the top right quadrant.

When these techniques are applied to the shading of photographic elements (for example, the addition of contoured lettering to a curved surface: a brand name superimposed on the side of a peach...), it is possible to create very realistic effects. Paint comes packed with features that seem intriguing on first perusal, but that quickly become indispensible graphic tools. As with Colors, there is a continual process of discovery and surprise as layer after layer of utility comes to the fore. And this still isn't all!

Colors

It's a lot more difficult to talk about Colors than about either of its companion pieces. That's because Colors is a custodial utility for doing something that we don't often have to do in the Amiga universe: conserve resources. Nevertheless, when you have to squeeze just one more color out of an already maxed-out palette, you'll be glad you have a tool like Colors at hand.

Colors is somewhat like PixMate or Butcher, the established Amiga Image Processing programs. In actuality it does less than PixMate and works a little better than Butcher. What it does and what it is useful for is the entire gamut of palette manipulations. It avoids such powerful transformations as edge detection and detail enhancing, favoring instead simple operations with the Amiga's color registers. But it does these operations relatively easily, comprehensively and quite well.

Color definitions for an Amiga image are retained in a file structure called a Color Map. When you load a picture into a paint program or any other display utility, a part of the machine's most readily accessible memory is set aside and the Color Map is copied into it. These memory locations are called "registers." In order to alter every pixel in the image that contains a particular color, all you need to do is to change that color's value in its

(continued on next page)

particular register. Likewise, if you want to make some changes, but there are particular colors you don't want changed, you can protect them by "locking" these values in their registers. This is what Colors is all about: Changing or preserving color values by manipulation of the color registers associated with an image.

The Colors Command Screen sits across the bottom half of your display, much like Digi-Paint's operations screen. Menus are accessed from the title bar of this screen (a non-standard implementation, but one that you can soon become accustomed to). The Command Screen displays the currently selected color, the register that it's attached to, and the numerical values that define it. It will also tell you the color's Population count: How many pixels contain the color.

Below this color information on the Command Screen is a bar graph that can display the relative amount of Red, Green, Blue, Hue, Saturation, Value, and Population in each of the registers in an image. The graph shows this information for any one of the above components and you can select which one by simply clicking on the appropriate button. If you click on any one of the bars representing a color register, it becomes highlighted in red. This means that the register is now locked and cannot be changed. You can lock any combination or all of the registers with a few simple mouse clicks. To the right of the bar graph is a pair of arrows. Clicking on the upward facing arrow will increase the selected value for all unlocked registers. Clicking on the downward facing arrow will decrease the value. By way of explanation, let me describe a simple procedure I did at home.

After starting Colors, I loaded a picture of a 1963 Mercury Meteor. The car as digitized was a lovely cream shade of white with a bright red interior. The first thing I did was to click on the red color to find out which color register it was in. This turned out to be register two, so I immediately locked that one. Then I paced my way through the other registers, locking those that were not related to the actual finish of the car. I locked all the black and dark tones associated with tires, grillework, and the other elements that added detail by way of contrast. When I felt I had isolated the various registers having specifically to do with the car's paint, I was then free to experiment using the separate red, green and blue elements. I also made sure to try the effects produced by raising or lowering the hue and saturation.

Once I had the car just the right shade of blue, I now realized that the red interior was no longer quite right. So I locked all the other registers and unlocked the red one. This one I adjusted by adding a little green and dropping the value a click or two. It took a while, but eventually, I had a car of a completely different color.

Colors also has a palette requester you can call up that allows you to find registers with very similar values and combine them. This is a useful thing to do if you want to free up some registers. I reverted to my original '63 Merc and melded three of the near-black registers into a single all-black one. This gave me three new register slots into which I could load my own custom colors, or, more importantly, which could be used to adjust things if I chose to composite my car with some other digitized landscape elements composed of a different palette.

Colors provides for simple pixelization (rendering the image in decreasing resolutions resembling mosaic tiles). It allows you to make Red, Green, Blue, Cyan, Magenta, Yellow and Black separations. It will reformat from HAM to EHB or High, Medium or Lo Resolution; Interlace to Non-Interlace or back. It will convert your image to Black and White or Negative. You can remove bit-planes (or add them), and practically every operation allows you to choose between speed or faithfulness of color quality

But my favorite feature is the resize option. Since it too uses a virtual (FAST RAM) image unrelated to display memory, Colors lets you specify enormous sizes for your bitmaps. It will also apply its phenomenal anti-aliasing magic to smooth the colors and add intermediate tones as it multiplies the numbers of pixels. And if you want a picture even larger

than will fit into Fast RAM, Colors has a Resize Save feature that sends the file directly to disk.

All three of the programs in Deluxe Photo Lab are well crafted, powerful utilities. I have a few minor problems with the user interfaces in Posters and Colors. I think there's too much mouse/button reliance, but that's a minor gripe. Another missing feature is some form of screen swap for comparison. I can understand how there might well be insufficient memory resources to allow such a thing, but I have gotten used to keeping an original version of my art in a separate buffer so I can constantly compare the work-in-progress with my starting point.

The documentation that accompanies Deluxe Photo Lab is also first rate. It's a spiral bound 7" x 8 1/2" soft-cover that numbers about 220 pages. I am gratified to see that this is becoming a kind of documentation standard and that helps keep things tidy on the bookshelf. There are three separate sections in the manual, each dedicated to one of the three programs. Each section begins with a Guided Tour, proceeds to discuss Elemental features, presents a Tutorial or two and then breaks down into an orderly Reference section.

The publishers have also provided a very good, concise description of Color Theory, Amiga Display Modes and even a brief discussion of the sample pictures included with the tutorial Art disk.

For those with digitizers, who want to have all the tools required to do justice to their photos, for those who want to buy one single program that will do 91% of what PhotonPaint or PixMate or DigiPaint will do, for anyone who wants ten-foot murals of their Amiga art, Deluxe Photo Lab is a positive steal.

Deluxe Photo Lab $149.95

Published by Electronic Arts
1820 Gateway Drive,
San Mateo, CA 94404
(415)571-7171

Microbotics' SCSI Module

Gain inexpensive SCSI access with this add on module for Starboard

by George Rapp

In September of 1987, we reviewed a plug in module for the Starboard II RAM expansion module for the Amiga 1000. We also listed a few new products that Microbotics had in the works that seem worthy of our attention. We can now report on two of these, the SCSI controller plug in module, and the 2010 Starboard II to Zorro II adapter.

The SCSI controller is a small, narrow circuit board with connections on the bottom and a 25 pin SCSI ribbon cable on the top. Installation requires the removal of the Starboard from the Amiga 1000 and the partial disassembly of the module. You must remove a couple of small phillips head screws at the bottom of the unit first. Once these are out, the lower half of the metal cover can be removed. There are a series of small connectors on the Starboard main board that will line up with the three connectors on the bottom. Alignment is critical but not difficult in good lighting. The ribbon cable passes out through, the same slot as the Amiga bus pass through or in the newer versions of the Starboard II, through a slot in the rear for this purpose.

Once properly installed, the module adds the functions of a battery backed clock and calendar, and a SCSI port. The SCSI port has many possible uses, but the most common, and the one that Microbotics software supports is that of a hard disk controller. The software covers the basic connection and use of several common, commercially available drives. Modification from the default drive requires the use of any text editor.

You have the choice of using Microbotics' own special DHMount command or the standard AmigaDOS Mount command and mountlist entries. Both methods are adequately explained, although they do not cover the differences under 1.3 version of Workbench. The support software for the use of the SCSI interface is more versatile than most of the other Amiga 1000 SCSI boxes. Microbotics includes software to park drives that do not park themselves, a thorough low level formatter and error flagger, and a mode switcher. The mode switcher changes some of the ways the SCSI drive operates. There are two specific commands, *Fastmode* and *Writeverify*. Fastmode speeds the use of the drive by switching off some of the built in error checking of the SCSI interface. Similarly, the Writeverify command turns off the check that data has been written to the disk without errors. With the level of quality of hard disk drives on the market today, the write verification can be switched off without any concern. The fast mode can be switched off under AmigaDOS 1.2 without any major problems. It is required to be on only when speed of the software exceeds that of the hardware. Under AmigaDOS 1.3 fast file system, this can occur, and results in a lock up of the system. This is not a real problem since the Fastmode command provided, or an entry in the mountlist called MaxTransfer which limits the speed of the fast file system, eliminates it. If you refer to the ratings on speed in the GVP hard card article in this issue, you will see that

the Starboard SCSI module is slow. It is only about 20% faster than floppy disk operations, which is slower than any other drive I tested. It does have one major advantage in that it is the lowest cost SCSI adapter. Discount prices are likely to be under $100 for the module. Microbotics wants to further protect their price advantage by making their board one of the few devices of any kind that is movable from the Amiga 1000 to the 2000 with a minimum of fuss and expense.

You accomplish this move with the Microbotics 2010 adapter. This is a small card that will allow the Starboard II (and any of its modules) to configure as a Zorro expansion board in the A2000. Installation, however, is slightly more difficult than the addition of the multifunction or SCSI module. The whole board must be removed from the metal case. Boards with the upper deck for a second Megabyte of RAM are more difficult to remove because of the tighter clearance. Once free of the case, the board easily slides onto the adapter card. A single screw from the case is used to secure the Starboard to the adapter. The instruction sheet mentions a plastic cover for the exposed parts of the pass through bus, but none was in my sample. A single jumper must connect from the adapter to one of the pins on the PAL chip of the Starboard. If a module is in place, the pin is very difficult to reach. Connecting to the wrong pin results in the board not being recognized by the system and the memory not added. Once correctly connected, all Starboard funtions are available.

Plugging the adapter/board combination into the A2000 proved to be more difficult than expected. The spacing of the adapter board made it impossible for fit in the slot because the guide slot in the front forced the card back too far. I had to file the front end of the adapter down to make it fit properly. I am sure that there is some variation between the Amiga A2000s that make things more difficult for the manufacturers, but this was far out of line. The adapter also has a few jumpers and patches which is uncommon on a Microbotics product. It does work, but does not inspire the confidence that I have in their other products. For Amiga 1000 owners who are moving to a A2000, this is a great way to add an inexpensive hard disk to their system. Microbotics suggests fitting the adapter and board combination in the right most slot of the A2000 because of its width. Like the GVP hard card, the Microbotics board would cover three slots if not in the right slot. The combination of the two boards uses all but one slot in my Amiga 2000. Obviously, those Amiga owners who already have a Starboard II are most interested in these products. Other Amiga 1000 owners may consider obtaining the Starboard RAM expansion for memory expansion because of its flexibility and compatibility. I have yet to find an external add on for the Amiga 1000 that does not work with the Starboard. It remains a reliable and affordable

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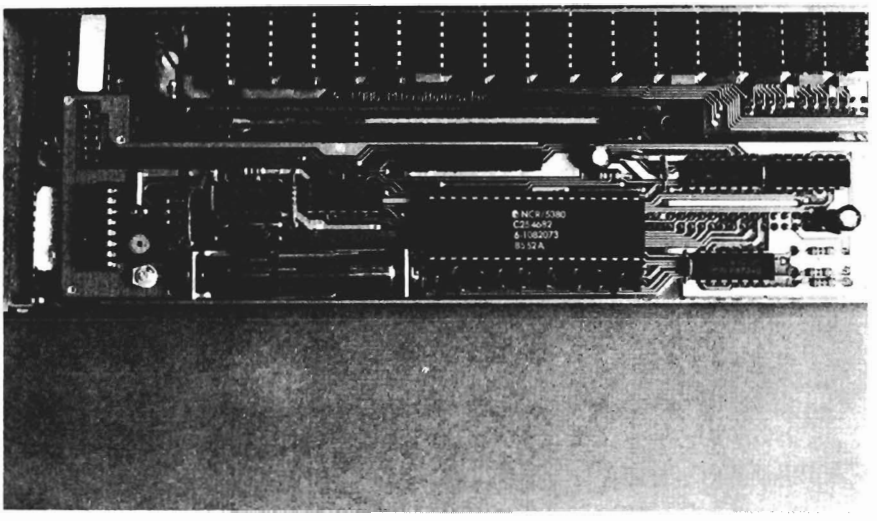


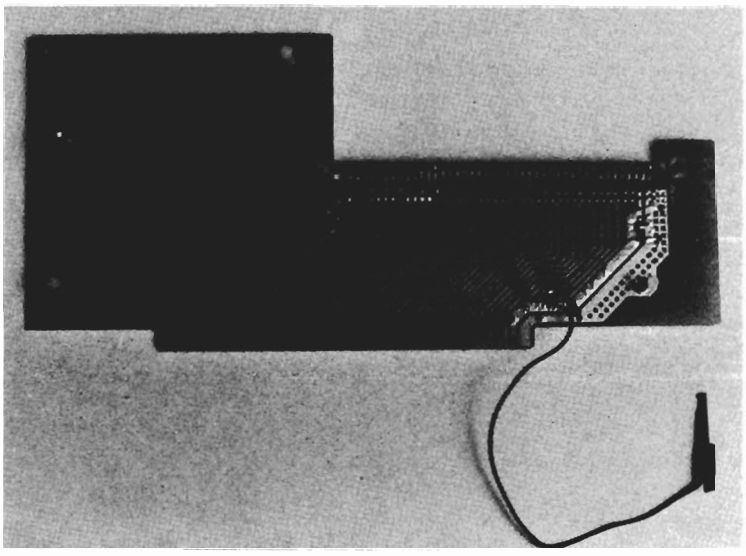
The Starboard SCSI module plugs into the pre-socketed board

SCSI board (continued from previous page)

way of expanding the Amiga 1000, and now offers an upgrade path to the Amiga 2000.

What is a SCSI?

SCSI is an acronym that is thrown about the Amiga community with the assumption that everyone understands what it is. To spell it out, SCSI (pronounced "scuzzy") is a Small Computer System Interface. It is a published format for two or more computers or peripherals to exchange data quickly. It is implemented as either a 25 or 50 wire interconnection between devices. The difference in the number of wires comes from the use of separate or common ground wires. SCSI is a standard, or at least as close to one as possible in the computer industry.



An adapter is available from Microbotics which allows you to use your Starboard within an A2000

Apple Computer was one of the first of the large companies to adopt SCSI as their standard interface. The Amiga does not have a "standard" hard drive interface since Commodore supports both SCSI and ST 506 interfaces in their hard disk controller, and they depend on third party manufacturers for supporting the Amiga 500 and 1000. IBM adopted the ST 506 interface for their PC. As a result, the ST 506 drives are plentiful and less expensive than their SCSI counterparts from the same manufacturers. SCSI drives, however, have some advantages that ST 506 do not. For one, SCSI devices, either disk drive or other devices, have identification numbers associated with them. The identification numbers run from 0 through 7, and a single controller can support up to seven devices. The controller usually has one of the numbers reserved for itself. An St 506 interface card can support only one or two drives at a time and is much slower, seldom exceeding 400K per second.

SCSI supports two way asynchronous or synchronous serial data transfer at rates up to 15 megabytes per second. Asynchronous data is sent as it becomes available or as needed, like a modem does. Synchronous data is sent with timing controls that link the two systems for faster data transfer. Serial data means that the bits that make up a data word are sent one after the other down the same wire. Parallel data uses one wire per bit of the data word, greatly adding to the complexity of the wiring, but making for faster transfer rates. Because SCSI is not computer specific, the number of bits is an unknown.

SCSI also has applications outside hard disk controllers. One such application is the use of the SCSI ports of several computers as a networking tool. C-Ltd. has a version that allows two or more Amigas to share one hard disk. CD ROM and WORM drives are other types of devices which commonly use SCSI to interface to IBM and Apple products. The flexibility of the SCSI approach requires Amiga software to support it. Currently, there is nothing stopping the use of commercial CD ROM encyclopedias and other software with various Amiga SCSI controllers, except an appropriate software driver! Practical full-featured multi-user Amiga networks can also be based on the SCSI standard.

Starboard SCSI module
$129.95

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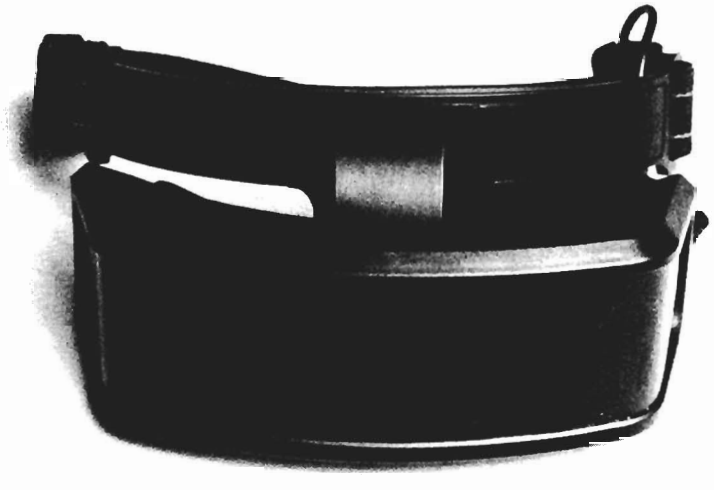
X-Specs 3D

Add new dimension to your Amiga viewing

by Glenn M. Heck, Jr.

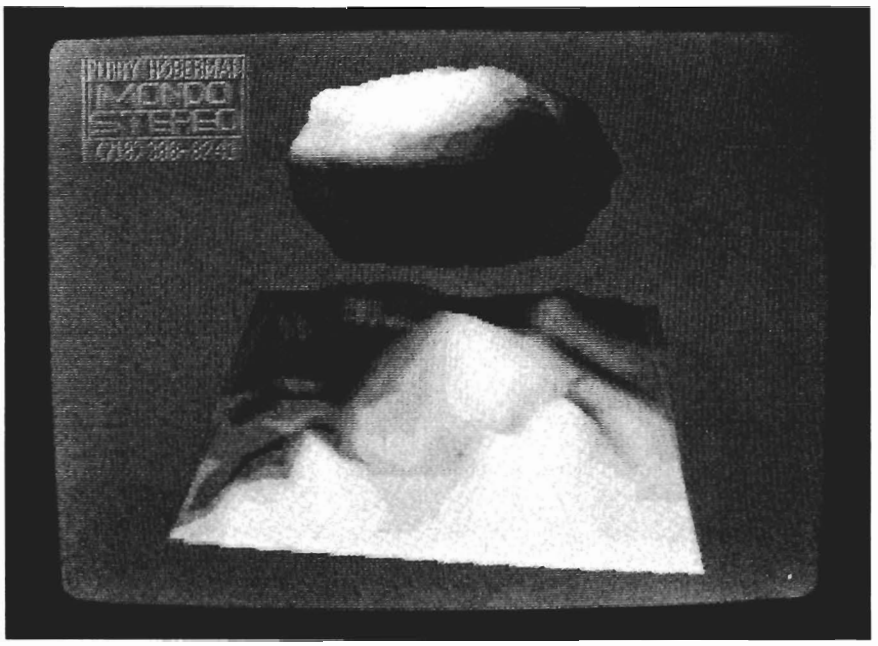
What? 3D glasses? You've got to be kidding. Now what would an adult computer user want with 3D Glasses? Infocom includes a pair of red/blue 3D glasses and a red/blue, 1930s style comic book with their bawdy space thriller, Leather Goddesses of Phoebos. Andy Warhol's film Young Frankenstein was released in 3D with a pair of polarized glasses creating the 3D effects. The Kodak exhibit at Disney World's Epcot Center uses polarized 3D glasses for their beautiful color film. I've even seen a public domain version of 3D brickout for the Amiga using the red/blue system. So why is Haitex (Acquisition, X-Cad, HaiCalc) concentrating their efforts on the release of X-Specs 3D? Good question. It seems that they and over 60 software developers think there is a future in these things.

Looking like an accesory right out of a "B" sci-fi movie, the X-Specs use LCD shutters which rapidly oscillate under software control



Human vision is a complex process including the eyes, optic nerves, and the vision center of the brain. When you look at a distant object you are actually perceiving two separate images, one for each eye. The two images are slightly offset by the few degrees distance between your two eyes. Try this: Hold your finger out at arms length. Now close one eye and line your finger up with the corner of the room. Without moving your finger close your eye and open the opposite eye. You will see your finger apparently jump sideways along the wall. The farther away the corner is, the bigger jump your finger will make. It is the distance between your eyes that makes this happen. So why don't we always see double images of everything we view? Well, we do. It is the vision center of the brain that combines the two images into one and, depending on the difference between them, determines distance. This interpretation of double images as

perception of distance is called parallax. It is the basis of military range finders and is used in measurements of astronomical distances. Traditional 3D glasses use this property of vision to create the illusion of three dimensions. Two images are carefully created; each object in the images is offset according to its intended distance. One of the image is printed in blue ink, the other is superimposed on the first in red. When viewed through glasses with one red filter and one blue filter the resulting image appears to have depth. It is also monochromatic, a major drawback.



On Screen, the system uses a double image

Haitex's liquid crystal imaging process is not unique. Nineteendo and other game companies have similar goggles, but it is a great improvement over the monochrome images of red/blue filters. The black plastic goggles fit around your head with a thick, comfortable elastic band. The glasses themselves do not touch your face but are held about one-half inch from your eyes. Skin contact is made only on your forehead with a soft rubber suction pad. This solution has two advantages. X-Specs 3D do not interfere with prescription glasses and the open design does not become hot and sweaty. A strong cable runs from the goggles, plugging into a small interface box which is plugged into joystick port 2. The interface box has ports for two pair of goggles and multiple boxes can be daisy chained to allow many boxes to be used simultaneously. A software program, script file, and the interface box work together to create the illusion of three dimensions in full color in any screen resolution. Of course the images being viewed have to be specially designed to allow this illusion.

Technically, X-Specs 3D create three dimensions by using rapidly flickering liquid crystal eyepieces and screen images to simulate parallax. The software, using a Copper hardware interrupt, causes the two offset images to be quickly buffered from screen to ram to screen at 60 cycles per second. In careful sync with this 60 cps flicker, the interface box causes liquid crystals in the eyepieces to alternately become opaque, left offset image displayed, left eyepiece clear, right offset image displayed, right eyepiece clear. Your left eye sees only the left image and your right eye sees only the right image. Your brain merges the images just as it would in real vision and you perceive three dimensions. The software also uses ram buffering to create 3D animations. Supposedly the 60 cps flicker is too fast for you to perceive but I notice severe background flicker from the interaction between X-Specs 3D and the 60 cps of electric lights. These goggles are much more comfortable to use in a dark room.

Haitex will be releasing X-Specs 3D around the end of July along with a 3D game called Space Spuds which will be included with the package. Space Spuds is a shoot 'em up action game involving a headlong race through space avoiding fat glo-

(continued on next page)

X-Specs 3D (continued from previous page)

bules, gobbling heads of lettuce, and shooting potatoes, and whatever else flies out of the screen at you. The 3D effects in the my version are fantastic; these vegetables are really coming at you, threatening to make you a human compost pile. But action games are only the beginning. The next release of the 3D drawing and animation program, Forms In Flight, by Micro Magic will automatically create offset images for X-Specs, as will Seven Seas Software's, 1.2 version of Doug's Math Aquarium Dwight Blubaugh of the University of Cincinatti has developed a 3D molecular modelling program which also creates offset images. Medical imaging, a paint program, flight simulator, and arcade style games are also in the works by third party developers. Exciting stuff!

X-Specs 3D may help the Amiga find a place in some specialized fields. The development of 3D molecular modelling viewed rotating in three dimensions, and 3D math and medical imaging are exciting, unexplored areas. The quality of design and construction of X-Specs 3D cannot be faulted (although I would add terrycloth to the forehead pad). Visually the system works well with a solid, multicolored, apparently 3D screen image and a barely perceptible peripheral flicker. The ability to use many goggles simultaneously offers hope for their use in chemistry, math, architecture and medical classrooms. At a list price of $124.95 including controlling software and the game Space Spuds, I cannot recommend X-Specs 3D for the casual hobbyist, but they could be useful in specialized situations. If you are a gaming enthusiast or enjoy hours flying a flight simulator, I would recommend waiting until these products actually come to market before considering X-Specs 3D.

X-Specs 3D $124.95

Haitex Resources
208 Carrolton Park, Suite 1207
Carrolton, TX 75006

(214) 241-8030

Homebuilders Cad

Amiga Home Improvement

Paul R. Miller

HomeBuilders_CAD is a design and estimating system for residential construction (both new construction and additions). You draw the plans from menu choices for standard components, then HomeBuilders_CAD draws the elevations and calculates the materials and costs. HomeBuilders is targeted for the home owner and small contractor, but it may very well find an audience with architects and developers who specialize in residential work. While it is true that you could use this program as a design tool, the primary purpose and value of HomeBuilders_CAD is estimating. By limiting its scope to wood frame residential construction, HomeBuilders_CAD provides a quick and easy way to develop costs and material and labor breakdowns through relatively simple drawing methods.

For those not versed in construction who are considering a new house or an addition to an existing house, the program offers a way to determine costs at a much greater level of detail than cost per square foot. You also get a method to develop and test alternatives without resort to extensive alterations of drawings and schedules of materials. HomeBuilders provides all this with a set of drawing tools specific to house construction that eliminates the need for drafting skills or detailed knowledge of construction components and methods. For a builder or anyone who deals day-to-day with residential design, here is a tool for developing estimates that is a good deal quicker and far less tedious than the usual methods.

HomeBuilders_CAD is packaged in a utilitarian spiral binder complete with fold in flap for marking your place (why aren't all programs done this way?). The manual is complete and well written, with a tutorial to get you

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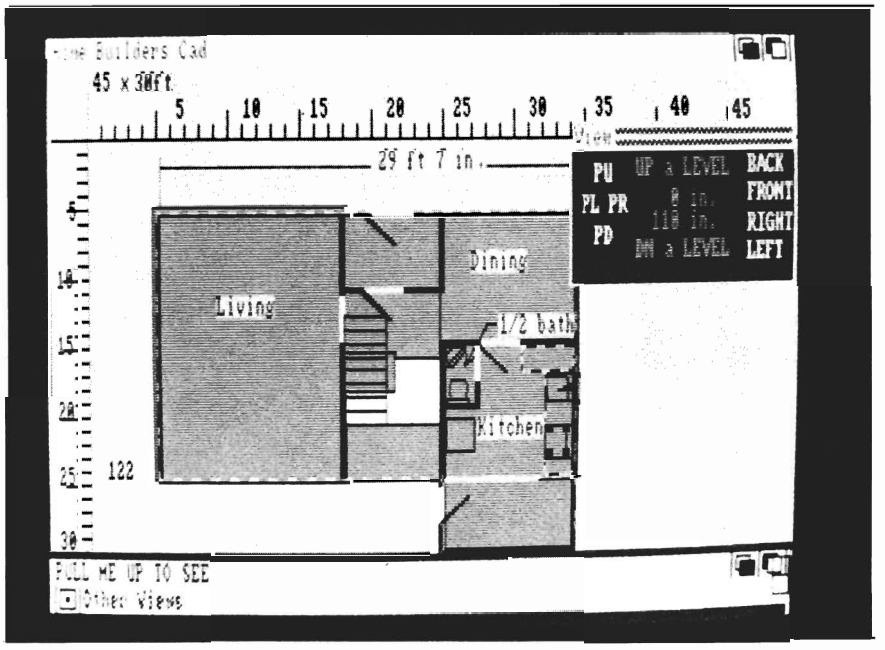
You can switch levels within your project simply by clicking on the appropriate icon in the View window



Homebuilders_Cad

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started, an overview section, and detailed reference section. Also included are advanced topics, clear instructions for transferring ASCII cost data to word processor, data base, or spreadsheet files, and hard disk installation procedures. The instructions are profusely illustrated with screen shots, so learning to use it is a breeze. A pleasant surprise is the inclusion of 4 disks for this 2-disk program, master disks AND ready made working copies. Minimum system requirements are 1 meg of RAM, an external drive, and a dot matrix printer for screen dumps of drawings and text printout of costs. If you have 2 megs of memory, EaseWare will supply you with a free "Contractors Upgrade" disk that allows you to calculate bigger projects (1000 vs. 100 text entries, 2000 vs. 450 "parts", and 8-acre vs. 2-acre site topological calculations). Also included are a list of things the program won't do, a questionnaire card soliciting your preferences for additional features (more on these items later), and a phone number for support (yes, they answer both the phone and your questions!).

When you boot HomeBuilders-CAD the program presents you with two icons: the internal drive workbench, the external program icon, "Click_Here_To_Start", and a New CLI window entitled *Directory*. Since Home_CAD's file requesters only permit file name entry, you'll need the CLI window and the directory command to check the contents of your disk files. You don't spend much of your time loading and saving in this program, so this isn't too much of an inconvenience. The external disk contains both the Home_CAD program icon and "Editparts", a part cost editor that allows you to alter values for material, labor, overhead, and (in future versions) units per day produced by a standard work crew.

In a sense, "Editparts" reveals the heart of Home_CAD: a line item listing of building component "parts", their description and unit of measure, the material cost, the labor cost to install or erect, overhead costs associated with the item, and total cost. To create an estimate, all you need is a

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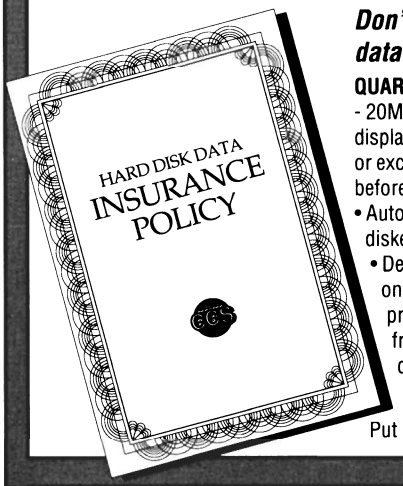

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Homebuilders_Cad

(continued from page 22)

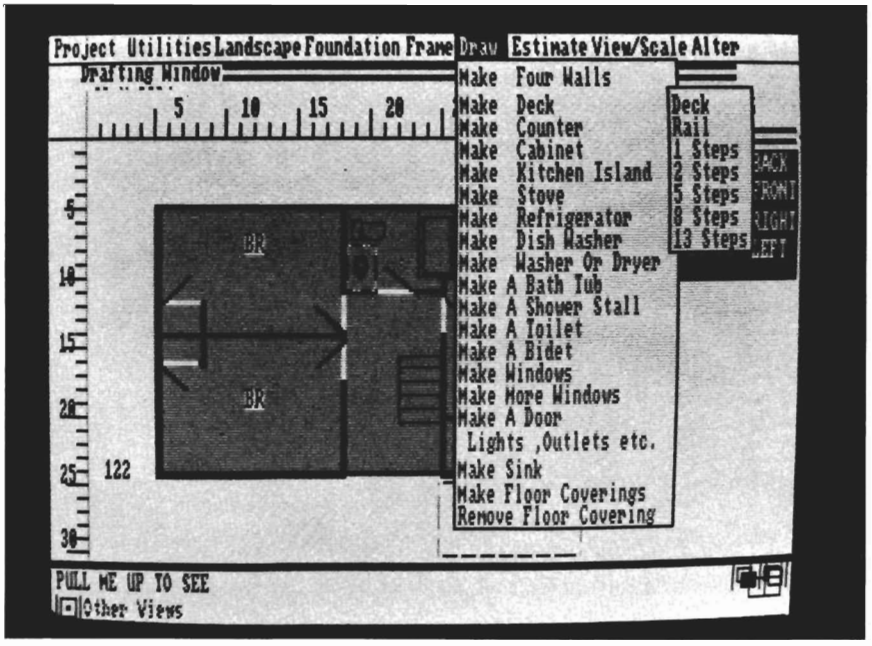
set of plans, an understanding of the components and methods of construction, a detailed take-off of materials, a source of material, labor and overhead costs, and lots of hours of tedious calculation. As an architect who has done his share of estimating, I can assure you that it's one of my least favorite pastimes. The power of Home_CAD reduces the task to just drawing a set of simple plans.

When you begin Home_CAD your screen contains 3 windows: the main work drawing window, a small view selector, and a pull up window for elevation views and cost figures. The view gadget allows you to scroll, pick front, back and side elevation views, and select your current working level or layer within your building plan. The main screen offers 9 basic menu selections: PROJECT, UTILITIES, LANDSCAPE, FOUNDATION, FRAME, DRAW, ESTIMATE, VIEW/SCALE and ALTER with a set of submenu options totaling 84.

PROJECT offers the usual: NEW, OPEN, PRINT (screen dump), SAVE, DELETE, QUIT, and COPYRIGHT.

UTILITIES lets you EDIT PART COST (runs the Editparts program), SET CEILING HEIGHT (determine the height of walls), SET PAN Z INCREMENT (the elevation increment for the up/down working levels gadget), SET CURRENT HEIGHT (your current working level), ADD TEXT; SET ROOF PITCH; DRAW/FREEFORM, ADD DIMENSIONS (automatically calculates distance), SHOW DIMENSIONS, HIDE DIMENSIONS, CROSS HAIRS ON; CROSS HAIRS OFF; SHOW CURRENT LEVEL; CURRENT AND BELOW; SHOW ALL LEVELS, and more to show or hide plumbing and electric in various permutations.

Many macro-like operations have been provided to make the creation process as painless as possible

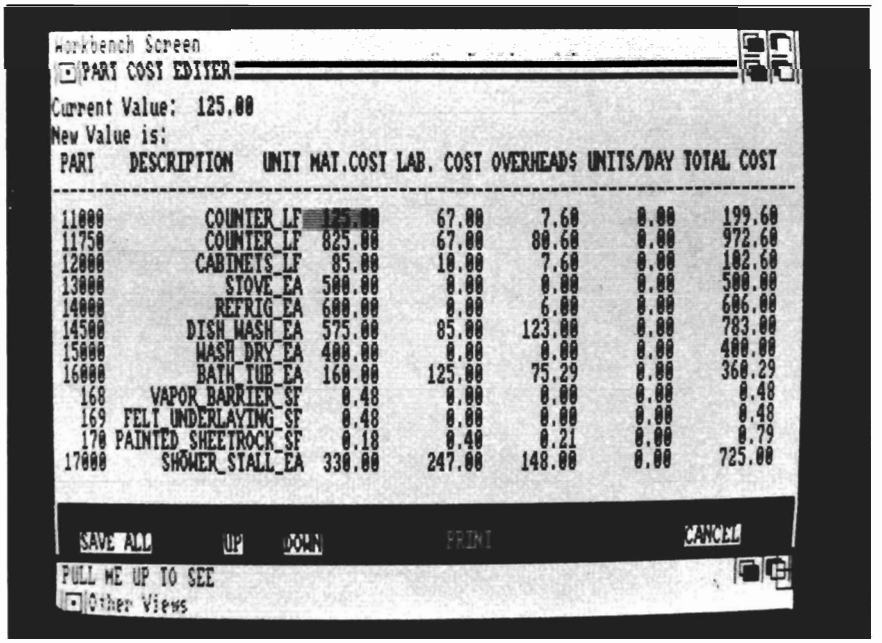


DRAW is the biggest menu, with MAKE options for: 4 WALLS (a convenience), DECK (with options for rails and steps), COUNTERS, CABINETS, KITCHEN ISLAND, STOVE, REFRIGERATOR, DISHWASHER,

FOUNDATION provides for 8" or 12" thick foundation walls with footings. The walls are definable as poured concrete, concrete block, or concrete block with brick skirt). The concrete pads (slabs) can be rectangular or freeform and of definable thickness.

FRAME menu options give you wood stud walls of 3-1/2" (2 by 4's) or 6" (2 by 6's), Floors (2 by 12 joists), Roofs (gabled or half gabled, 2 by 10 rafters), Skylights, Insulation, Steps (stairs of 1, 5, 8, and 13 treads), and Wallcovering options (Brick, Clapboard, Shingles, and Siding for the exterior, Painted or Papered Plaster or Drywall and 2 grades of Paneling for the interior).

WASHER/DRYER, BATH TUB, SHOWER, BIDET, WINDOWS and MORE WINDOWS (20 sizes each of casement and double-hung), DOORS (Exterior and Interior hinged, 3 sizes each, 4 sizes of French, 3 of Sliding Glass, 3 of Patio, and 2 of Garage), LIGHTS, OUTLETS (receptacles, switches, cheap and expensive lighting fixtures, and breaker box, and a submenu to draw wiring), SINK (Kitchen, Bathroom, Corner, Basin, Meter, Heater, and a further submenu to draw supply and drain piping), FLOOR COVERINGS (Make and Remove for Hardwood, Ceramic Tile, Cheap and Expensive Vinyl, and Carpet).



Within the Parts Cost window you can adjust the individual component prices to more accurately reflect costs in your geographic area

Home_CAD gives you the option to draw or not to draw the electrical wires and plumbing lines. If you choose not to draw them, the program automatically calculates costs based on lengths of run from breaker panel and water meters!

The ESTIMATE menu is the payoff of Home_CAD. From here you can display COST SUM. This is the total lump project costs for materials, labor and overhead. ITEM COST gives a breakdown of any part you select. AREA COST gives the breakdown of any floor area you drag and box, including all the parts therein. Area Cost is particularly useful for testing different scenarios, and revealing the incremental cost of extra spaces. Depending on the complexity of your project, the calculations can take from seconds to several minutes to complete. You can also elect to PRINT Sum, Item and Area Costs (they are printed from ASCII format and use your built-in printer font, so they print quickly). PRINT offers two more levels of detail that I especially appreciate. PRINT COST DETAIL gives you a line item printout for the project that lists each part (there are about 150 different parts available in this version) by part number. Part description and unit of measure, line item totals for quantity, material, labor, overhead and total cost are printed for each item. A step further is AUDIT TRAIL which doesn't combine like parts but prints each item separately. This is a useful list for checking the completeness of your drawing and allaying doubts. For further manipulation of data, you can transfer both Audit and Detail Costs, along with the Cost File List (from Editparts) to a spreadsheet program.

Rounding out the menus are VIEW/SCALE and ALTER. SCALE encompasses screen sizes from 900 by 600 feet down to 9 by 6 inches, and facilitates "panning home" to the drawing origin points as well as defining "zoom to" points. ALTER adds choices to Copy, Delete, or Move parts ("items") or areas of your drawing, along with Rotation of parts. Alteration commands apply only to those layers that are active according to the choices made in the Utility options.

Developing a plan and estimate is about as easy as I can imagine. A typical complete sequence would involve Survey functions

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Homebuilders_Cad

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to plot the lay of your land, creation of Foundations (walls, footings and slabs), framing of walls, floors and roof, application of surface finishes, addition of doors, windows, kitchen and bathroom fixtures, and plumbing and electrical components. The process involves straightforward menu selections and standard Amiga drawing motions (with on screen-prompts). You jump up and down on different drawing levels as you proceed. As you build up from grade, you can turn on underlying levels to aid in alignment, and pull up elevation views to verify your work. The process is so simple, you will be tempted to forge ahead without reading the reference parts of the manual. Take a little time to do so and you'll avoid some learning curve mistakes. By using the enlarged scale and the Copy, Move and Rotate commands you can fine tune and refine to your heart's content. However, I like the fact that you can be fairly sloppy and quick in your drawing and still get a good estimate. You can always take some time to add notes, dimensions, and other niceties with the free draw mode (none of this matters in your cost calculations). With these additions its easy to produce a reasonably good looking drawing which you can print from Home_CAD or transfer to a paint program for further enhancement. Take note, however, that the CAD in Home_CAD produces graphics that are simple and have a cartoon character compared to dedicated CAD programs. This is a function of the limited (and therefore easy-to-use) catalogue of parts, and the limitations of medium-res screen dumps. EaseWare is considering plotter support in future versions. As nice as such support would be, I consider the real usefulness of this program to be quick and easy estimating, and don't feel the lack.

Despite the screen filling menu options, Home_CAD can't do everything, and to their credit, EaseWare is explicit about its limits. For starters, you are warned that the program is not a substitute for construction expertise, particularly in matters of structural integrity and code compliance. Home_CAD is limited to continuous footing foundations (although you can enter a spread footing) and floor and roof framing of 2 by 12's and 2 by 10's respectively. If you are exceeding the allowable spans for floor construction, or require steel or wood columns and beams, you will need to supplement your estimate. Other items not included are ceiling materials, deck supports, mouldings, fireplaces and chimneys, and hardware. Heating, Ventilating and Air Conditioning are also not addressed. EaseWare is working on upgrades to provide more parts and options, and solicits user input in their registration questionnaire. I'd vote for more flexible building parameters (more framing options), activating the units per day feature of the estimate tables in order to create construction schedules, some base and ceiling moulds, site prep, creation of custom parts, a limited vocabulary of steel framing members, and an undo feature.

Given the target audience, I find the shortcomings of HomeCAD's part inventory to be relatively minor compared to its usefulness. It is, after all, intended for use with normal residential construction, and for this it serves admirably well at a low cost (compared to about $60 for just a reference book of unit costs, or many thousands for the not-so-friendly commercial estimating software packages available). For the present you can use Editparts to customize your unit prices to accommodate unusual conditions, and create a library of disks for different project conditions. Custom parts would be the best of all, and I hope EaseWare concentrates on this for the first upgrade.

HomeBuilders_CAD ought to find an appreciative market in the residential market. My only regret is that I generally don't design such projects and will have to resort to the tedious old ways....

HomeBuilders_CAD
$199.00

EaseWare
25 Belair Road
Wellesley, MA 02181

(617) 237-2148

Mimetics' Frame Buffer

Amiga Graphics in Sixteen Million Colors!

By Rod Molina

It was first seen at the October 1987 AmiExpo in New York. The Mimetics Frame Buffer is an Amiga 2000 compatible expansion board which allows the capture and display of NTSC RS170a video. The software included with the Frame Buffer also supports the conversion of images to and from RGB and various other formats, including the Amiga IFF standard.

The Frame Buffer has two basic uses. First, it allows the capture, processing, and display of full fidelity, 16.7 million color, video stills and motion. A video signal can be accepted from a camera or VCR. Moving, real-time video is created through the rapid display of 30 successive still frames for each second of time (30 frames per second). At any moment, the Frame Buffer can "grab" a particular frame to display a still image. It accomplishes this by converting the analog signal into digital data which is stored in its own 1 megabyte of on-board memory.

The second use of the Frame Buffer allows IFF images created on the Amiga to be placed into the Frame Buffer's memory where they can be displayed from the video output. The significance of this is that the image is actually processed by the board through filtering. This removes a majority of the pixelation and interlace flicker, which is normally present with some images on the Amiga. The extra color capabilities of the board also help to produce smoother coloring of the image to lessen the "jaggies" even more. In effect, the Frame Buffer board can convert an Amiga HAM image with a 4096 color palette to an image with a 24 bit-plane, 16.7 million color palette. The resulting image can be output as a true color, NTSC RS-170a video signal. These capabilities make it possible to use the Amiga for unique visual effects, including image manipulation, painting

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The Frame Buffer board comes with
1 meg of on-board RAM for image storage and display

and animation using programs which are capable of generating RGB or IFF files. Programs such as Byte-by-Bytes' Sculpt-3D ray tracing package can render directly to the Frame Buffer for images that come amazingly close to true-life.

Installation of the board is a painless task. As an Amiga 2000 Zorro expansion card, it automatically configures itself into the system. It can be placed in any of the 5 expansion slots, and multiple cards can be installed. The only problems I experienced while installing the card resulted from the length of the BNC connectors which come out of the end of the card. These connectors must first be inserted into the slot on the back of the Amiga before the rest of the card can be lowered into the slot.

Two jumpers on the card help to configure the board for specific environments. One jumper selects whether the video input is terminated with the internal 75 ohm load (with the jumper installed, the input is terminated). If the video is to be run to more than one card, or to another external video source, the jumper should be removed. On the other hand, if it is not, the resulting video output will be dark. If the jumper is left off with no other loading, the video output is bright, smeared, and washed out. The second jumper selects which time base to use for the video digitizing. With the jumper inserted in one position, the board uses its own on-board crystal oscillator. With the jumper in the alternate position, it uses the Amiga as the time base. In the latter position however, any variances in the Amiga time base cause color changes or color loss in the video from the Frame Buffer (this position is meant to be used with future peripherals).

Although the Frame Buffer was designed to provide a professional quality image interface at a very affordable price, a few tradeoffs are apparent. First, all loading and saving of Frame Buffer images occur when the image is not being displayed. The disadvantage of this is that paint systems cannot be used to work directly on the Frame Buffer image. However, images can be converted to IFF format which can be modified with standard Amiga paint programs. The modifed image can then be reloaded back to the Frame Buffer. Another tradeoff is that the board relies heavily on software to interface to the various file formats. This means that the processing and data transfer speeds directly influence how fast images can be loaded and stored. Although the Frame Buffer will work with a standard Amiga 2000, but I noticed a tremendous increase in speed when using a 68020/68881 CPU board with 1.5 Megabytes of 32-bit wide RAM along with a hard-drive running under the new AmigaDos 1.3 Fast File System. Finally, the board actually captures 1/15th of a second of video (2 frames). As a result the captured images "shake" as the display alternates between frames. This shake is only a visual disadvantage since the jitter can be eliminated through software by storing the data of only one of the frames. The following are some of the commands available in the current software that comes with the unit:

Thru - sets the Frame Buffer in "thru" mode. Any video input to the card is routed through to the output. The output video signal is slightly lower level than the input video, but this is corrected when the image is processed by the software.

Freeze - causes the Frame Buffer to capture the video present when the command is given.

tbCorrect - the sampling of the video is done to a fixed time base. If the image came from a tape recorder, or any other video source, it may not have a stable time base. This command is used to correct for these time base errors. Most of the other commands also do time base correction in their operation, but this specifies that only this function is to be performed.

Load - loads the ".0" and ".1" format image files into the Frame Buffer from disk. These images include all 4 frames of video in their most compressed format.

Save - saves the present four fields as ".0" and ".1" format files allowing for the most compact storage of the images.

R/W - are two commands which allow loading and storage of the raw video image. This format saves the present image verbatim

to disk. These images are saved with a ".vid" suffix and are about one megabyte in size.

Blank - removes the video output from the Frame Buffer. In this mode no video information is present on the output connector.

Unblank - undos the blank command. Whatever image is present in the buffer is displayed.

Encodergb - encodes a 24-bit RGB image into the Frame Buffer. Presently it supports 640x400 files. These images are stored as three files with ".red", ".grn", and ".blu" suffixes. The files store the pixels as bytes of each color in sequence from the upper left corner of the screen, across horizontally, and down to the bottom right corner.

Decodergb - this creates the three RGB files to represent the image presently on the screen. It only decodes the first frame of video, so the "shaking" of the image is greatly reduced when an image is decoded and encoded back again.

Nofiltencode - identical to the Encode command except that the image does not have the interpolation done to remove the jittering that occurs with interlaced pictures.

Iffld - this option loads any format IFF image into the Frame Buffer with filtering which removes much of the pixelation and interlace flicker normally seen with an RGB image. The extra colors are also used to produce smoother coloring of the image removing the "computer" artifacts.

RGB216 - converts the RGB image in the board to a 16-color Hi-res image which can be edited in any of the standard Amiga paint programs.

The cost of the board (approximately $800; depending on the current price of ram!) in relation to its features and capabilities, is a bargain. The Mimetics Frame Buffer is a product that should help people to realize that the Amiga is a serious video tool. Compared to our own Alta Centaurus, a Broadcast quality digital effects and still store system which costs over $15,000, the Frame Buffer's performance is respectable. As long as companies such as Mimetics continue to provide products like the Frame Buffer, the Amiga will continue to break new ground as THE desktop video computer.

Frame Buffer
Approximately $800.00 *(dependent on the price of RAM chips)*
Mimetics
P.O. Box 1560
Cupertino, Ca 95015
(408) 741-0117

Lights! Camera! Action!

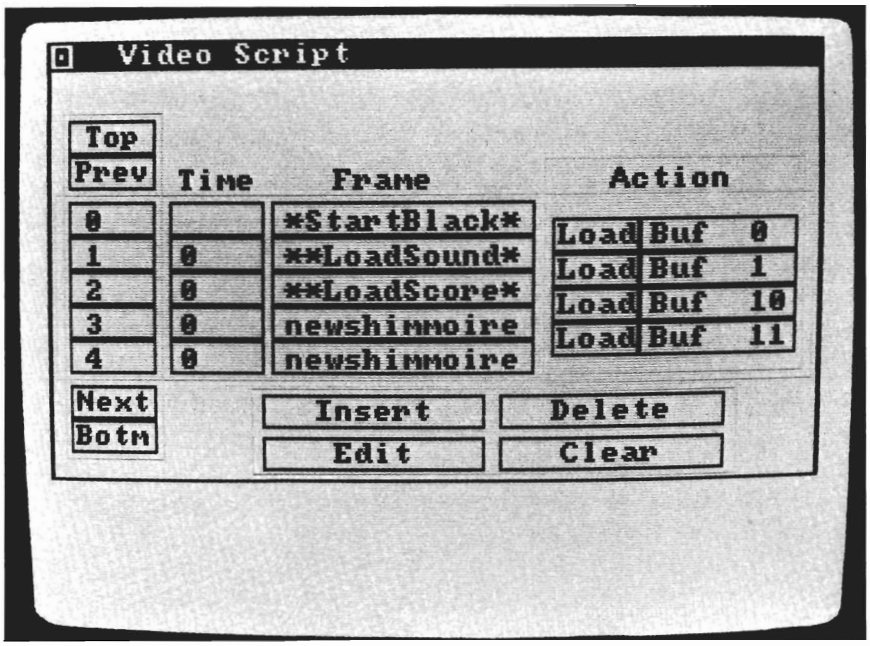
Aegis' new Animation and Sound integration program

by Tom Reed

Lights, Camera, Action! - the familiar call of a director in charge of a production. On a set the director is the person with the power and authority to make things happen. Lights illuminate the set, cameras roll, and actors spring into life! This is just the type of control and power Aegis would like to give you with their new program Lights! Camera! Action! LCA is a desktop audio-visual presentation program from Aegis that is designed for anyone who wants to put together presentations involving pictures, animations, sounds and music.

The program works in conjunction with other programs which you use to create the visuals and music. Lights! Camera! Action! then provides you with a way to easily combine elements from separate programs into a finished presentation. The scripting and sequence of your presentation is accomplished with your mouse. No programming language is needed with this easy and user-friendly interface. When you have created a masterpiece you will want to share it with your friends. Aegis has included a presentation module called ShowLCA which allows you to put your presentations on a disk and show them without the Lights! Camera! Action! program. Another alternative is to record your presentations onto video tape for distribution without lugging an Amiga around for playback. Whichever method you use to share your creations Lights! Camera! Action! deserves your scrutiny.

With LCA, you lay out your audio/video production in the form of a "Video Script"



Desktop Presentations

We live in a visual society. Most of the information which we gather comes to us visually. Television is our number one source of information (a frightening thought!). Before Guttenberg's invention of moveable type most information was trans-

mitted orally. The use of moveable type in printing increased literacy and print became a primary medium for information transmission. Today we live in a very visually literate society. We thrive on the sophisticated visuals and sounds of television and film. Change in communication is still in progress. The world of powerful visuals is being taken out of the hands of a few individuals with big bucks and expensive graphic machines. The Amiga is a sophisticated graphics machine although not expensive considering its abilities. The Amiga brings graphics power back to the individual. You and I can now design and execute persuasive presentations with our personal computers. Thus, the desktop video and presentation aspect of the personal computer is both important and significant. This audio-visual potential makes the Amiga an increasingly important tool for many people today. The ability of the Amiga to handle these crucial communication elements makes this computer unique. Programs which offer audio and visual elements have become a necessity and should combine ease of use and flexibility which facilitates the transition of the user's ideas into the final presentation.

Key Features

Some of the key features of Lights! Camera! Action! include:

Support for the Aegis/Sparta ANIM format: This means that any animation in the ANIM format can be included in your presentation (ANIM is becoming the animation file format standard for the Amiga).

Multiple resolutions with overscan: Any Amiga display resolution with overscan may be used. The program also supports interlace in any resolution.

Scene transitions: Over 40 different transitions are available to go from one image or animation to the next.

Sound and music: Sound effects, music and sampled sound may be used in the presentation (the SMUS format is used).

Color cycling: The color cycling function, available on many paint programs, may be used during the display of an image.

HAM and half bright color modes are supported.

Lights! Camera! Action! is designed to work with any Amiga computer that has 1MB of memory (RAM) and two disk drives. If you plan on using higher resolutions and complex animations 2MB of memory is desirable.

A Quick Tour

When you begin the Lights! Camera! Action! program you are presented with a blank screen and an About message. Underneath the About message is a display of the free memory available. Lights! Camera! Action! starts in low resolution "overscan" mode. Because the program begins in the "overscan" mode, the title bar cannot be seen until you hold down the Menu (right) mouse button. Once the Menu bar is visible you have Project, Video and Display pull down menus to choose from.

The Project menu contains commands for loading and saving scripts. This menu also contains commands to bring up the About message to display the available free memory, the Sleep command for use when multi-tasking with other programs and the Quit function. The Video menu contains play options and the editing functions necessary for assembling and modifying presentation scripts. The Display menu allows you to choose display parameters including screen resolution and whether it has interlace, half-bright or color cycling.

Scripting

Scripting a program begins long before you sit down with Lights! Camera! Action!. The three word title Lights! Camera! Action! divides nicely into the three major production phases: preproduction, production, and post production. "Lights" could correspond to the preproduction phase in which the planning and creative work takes place. You know, where the proverbial light goes on and grand and noble ideas being to flow. If possible, you should sit down with a pencil and paper and jot down or draw out your ideas for the presenta-

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tion you are planning to make. I like to draw a series of rectangular boxes to represent my monitor screen. In these I sketch or write down information about the image that is to appear in that frame. Under the frame I write additional notes. These notes include music or sound elements and the type of transition I would like from this frame to the next. With this outline to guide me, I proceed to create the graphics, visuals and sound components for the production. With this rough storyboard of the show, I proceed to the production phase and create and record the graphic screens and sound elements I will need using a variety of compatible programs.

The post production phase is when you use a script to combine your animations, pictures, sounds and music into a desktop presentation. The Lights! Camera! Action! script works very much like a movie script. The script contains information on the type of image, how long it will be on the screen, what sounds or music (if any) are to be included and the type of transition you would like when changing from one image or animation to the next. Scripts are built with the Video Script requestor reached by choosing the Edit command in the Video menu. The requestor is divided into two basic areas: a frame list and the buttons for controlling the list. Four columns starting with the frame numbers on the left are: Time - this shows how long the picture will be displayed in seconds; Frame is the filename of the picture or ANIM being displayed and can also contain other script commands; Action describes the action or transition which will occur between frames. The four buttons at the bottom of the screen enable you to Insert frames, Delete frames, Clear an entire script or Edit a particular frame and transition. The Edit button brings you to the "Frame Specs" requestor. Here you enter additional information such as time, action, transition, and frame name. All of the instructions to build a sequence are entered in the Frame Specs requestor. The Frame Specs requestor uses "pop-up" menus to help with the selection process. For instance, the Blank button has the following choices in its "pop-up" menu:

Blank - displays color zero for the amount of time specified in the Time field.

Color Bars - places vertical color bars on the screen.

Load Buff - loads an IFF picture or an Animation into memory for playback later in the show.

Append Buff - supports large multi-file animations. This option combines files into one large, continuous animation.

Form Buffer - pictures are normally stored in a compressed form to conserve memory. Form Buff decompresses a file before it is to be shown.

Clear Buff - erases the contents of the specified buffer and frees the memory for use.

Load Score - adds a musical soundtrack.

Load Sound - sampled sounds are loaded into the program.

Show Still - displays an IFF picture for the amount of time in the Time field.

Play ANIM - plays an animation file.

Play Score/Sound - plays a previously loaded score or sound.

Pause - causes the show to stop until the left mouse button is pressed.

Loop Point - works in conjunction with the Play Loop play mode. It specifies the point in the show where the program returns after it reaches the end of the script.

Sound Event - plays a sound during an ANIM style animation.

SG Event - gives you control of the SperGen genlock unit during the playing of ANIMS.

Clear Events - causes all ongoing events to stop.

Selecting any of these options will enter the action into the script. This gives you some idea of the many selections that are available. And speaking of selections, there are over forty Transitions for you to choose from. All of the transitions except Fade and Flip perform a gradual blend from the first color palette to the next. Fade performs a fade to black, changes the palette, and then fades into the next picture. Flip jumps between pictures and changes the palette instantly. Dissolve performs a pixel-by-pixel fade from one picture to the next. A pattern wipe of diagonals and diamonds occurs throughout the screen during transition. The Wipe sub-menu has nine choices. Imagine that your screen is a

py disk operations (see chart at end of article). One thing that these tests do prove is that the Fast File System in 1.3 works!! Keep in mind that these tests are very relative. Each controller has a different brand of hard drive. I am trying to compare the standard configurations as purchased. Almost any of these controllers would be faster with the Quantum drive.

The "winner" of these tests is not one of the drives, it is the end user. Each of these combinations has some distinct advantages. (See the review of the Microbotics SCSI controller for a comparison). For the Amiga 2000, the choice is between one of the GVP boards, or the Commodore 2090. The GVP boards have the advantage of sockets for autoboot ROMS, and the added feature of either RAM expansion or free drive bays. The Commodore A2090 has the advantages of being able to use the cheap but slower ST506 drives and is almost sure to work with any Commodore accessory since it follows all the system standards. Supra and C-Ltd are both working on DMA hard disk controllers.

I must admit that the design and function of the GVP appeals to me. There is a certain elegance of its design and harmonious function in the multitasking environment. Owners of the Bridge card will benefit from having the 5 1/4 inch drive bay free for the "A:" drive under MS-DOS and the second smaller drive bay free for another floppy or hard drive. GVP has demonstrated a great deal of user support as well. In response to many peoples' complaints of the difficulty in using an AmigaDOS hard drive with the Bridge Board, they have included an ICON driven program for near foolproof installation of the linked drive, at least from the Amiga side.

As usual, I can still think of a couple things I would like to see changed. After studying the board, I concluded that a 64K cache was part of the original design but dropped because of the cost and availability problems with RAM chips. Too bad, since the larger cache would have improved performance during heavy CPU loading. The manual is better than the first GVP manual that I reviewed, but it lacks some tips for the more advanced users who will alter the size and number of the partitions themselves. Improved formatting and partitioning software would be another plus and is currently in the works at GVP.

This is a very good, solid product that makes for easy installation and leaves plenty of room for more expansion. One area remains for improvement that does not depend upon GVP, but rests on Commodore. In our tests, we uses the Gamma 7 version of Workbench 1.3 for the Fast File System. Gamma 7 is not the newest version available, but it is a place to begin the comparison. The Fast File System is a fantastic improvement in speed of disk operations by changes in software, but it is not up to the speed that the SCSI devices are capable of. I hope that Commodore continues to improve the file system in either the release version of 1.3, or later under 1.4, and extends some of the improvement to the floppys as well. The use of 1.3 in this test enabled us to see the difference a faster disk drive and good controller can make

Impact A2000-HC/20
$599.00
Impact A2000-HC/45
$850

Great Valley Products
225 Plank Road
Paoli, Pa 19301
(215) 889-9411

How they stack up:

Drive Performance Factor:	
C-Ltd (Amiga 1000)	2.1
Commodore 2090	4
A2090 under 1.3	12
GVP Hard Card 80	4
Hard Card 80 under 1.3	13
Starboard II SCSI	1.2
Supra 20	2.1
MS-DOS 3.1 single task	7
MS-DOS multitask	N/A

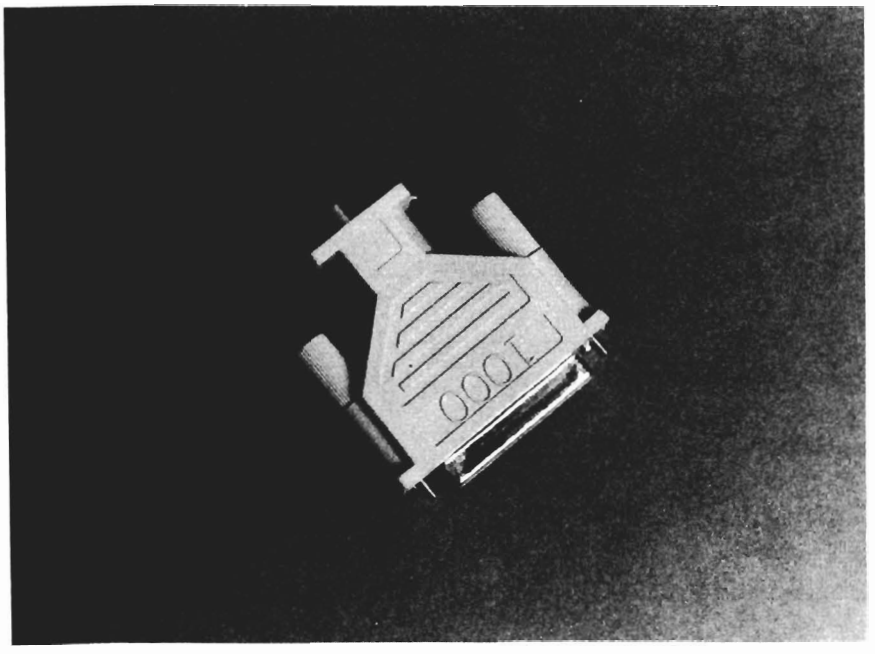
Access 64

Use your C-64 peripherals with your Amiga

by Steve Dock

Back in 1985, Commodore's marketing plan for the Amiga ignored the 5 million C64 owners and attempted to sell the new computer to IBM and Apple buyers. This strategy flew in the face of a basic marketing concept: your best buyers for a new product are your satisfied customers. Despite Commodore's neglect, many of the first Amiga buyers were 64 owners including me. We loved our new system but longed for the vast quantities of software and hardware available for the 64. In fall of 1987 Commodore rediscovered a potential market and aimed to sell the new A500 to 64 owners. This campaign was very successful and along with the lower price of the A500 brought many more 64 owners to the Amiga.

The Access 64 module plugs into the parallel port and provides the circular pinout for connection to your peripherals



The growing trend of C64/Amiga owners did not go unnoticed by third party vendors. In late 1987 two C64 emulators appeared for the waiting masses. These software packages raised expectations of fast-action-filled games running on the superior monitor of the Amiga and easy access to the Basic programs, word processing files, and databases on our 5.25 inch disks. Alas, the reality of software emulation soon set in; no emulator can be as fast as the hardware it is emulating. Maybe we couldn't get blazing sprites and SID music, but we still need access to our data files. And what about the thousands of 64/Amiga owners who have Commodore 1525 printers? Shouldn't there be a way to use your existing printer with your new Amiga? Enter Access 64 from Progressive Peripherals.

Access 64 is a combination of hardware and software which lets you use a 1541, 1571 or 1581 disk drive and Commodore Serial Bus printer with AmigaDos. It is not a 64 emulator. You can transfer a basic program from a 64 to your Amiga, but you cannot run it. The hardware

large tic tac toe board. A wipe can start from any of the squares. Example: if you choose the upper left corner the wipe moves from the upper left corner of the screen to the lower left. The Block option has a sub-menu of ten descriptive choices. Other transition choices are: collapse, center scroll, bottom scroll, and four MVP (Multiple View Port) transitions!

Once you have saved your work, it is now time to play it back. Your show can be played back from the commands under the Video menu or from CLI. At the CLI prompt, type: ShowLCA "scriptname". The Video menu for playing back scripts includes: Play Manual, Play Once, and Play Loop. When your play back selection is made sit back and enjoy your efforts.

I found only two features that I wished were included. The first would be a preview mode. This would have been a very nice and practical feature. When you have such a wide selection of transitions you may not know which one is best for that image. It would be nice to be able to easily view the differences. The other feature is relatively minor. When you have completed entering information on the Frame Specs screen, I would have liked a way to advanced to the next frame. As it is now, you must close the Frame Specs screen which takes you to the Video Script screen, then highlight the frame you would like to work on next and then return to the Frame Specs requestor. Easy enough to do but .... A valuable extra program is included in this package. GrabANIM is a utility which lets you take individual screen images and turn them into animations. It works by waiting in the background while you show or draw images on the screen. The process is simple and direct and may encourage those who would be intimidated by the complexity of various animation programs to consider moving images. Open a CLI and run GrabAnim. You will be prompted for the device which will be used for frame entry. Your choices are Joystick,

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Light! Camera! Action! *(continued from previous page)*

Mouse, KoalaPad and keyboard. Type O to open an ANIM file and specify a device and file name. Now push that CLI in the background and use your favorite paint or display program.

Whenever you want to add the current screen to your growing animation hit the fire button, the left mouse button, or type A. Simple line drawings moved using Dpaint brushes can become a "moving" experience!

I also found the documentation exceptionally clear and informative. The 50-page manual presents the user with a good mix of examples, reference materials and background information. Without a long list of commands to explain, almost any manual would make good reading.

The best thing about LCA is that your efforts are well rewarded. The program is well behaved and predictable. When you make a selection you can be confident of what will happen. This allows you to do successful presentations from the start. Because you are creating your script with the click of a mouse button and not a programing language, the learning curve is relatively short. Being able to start right away allows you to become familiar with the structure of the program and advance to the more sophisticated aspects of Lights! Camera! Action! at your own pace. However, don't mistake ease of use with shallowness. LCA is sophisticated and deep. The wide range of transitions and flexibility of formats offer the advanced user a tool worthy of his best efforts. I can highly recommend LCA as a program that gives you control over the presentation of your work and allows you to take command and call for "Lights, Camera, Action."

Lights! Camera ! Action!

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2210 Wilshire Blvd., Suite 277
Santa Monica, Ca 90403

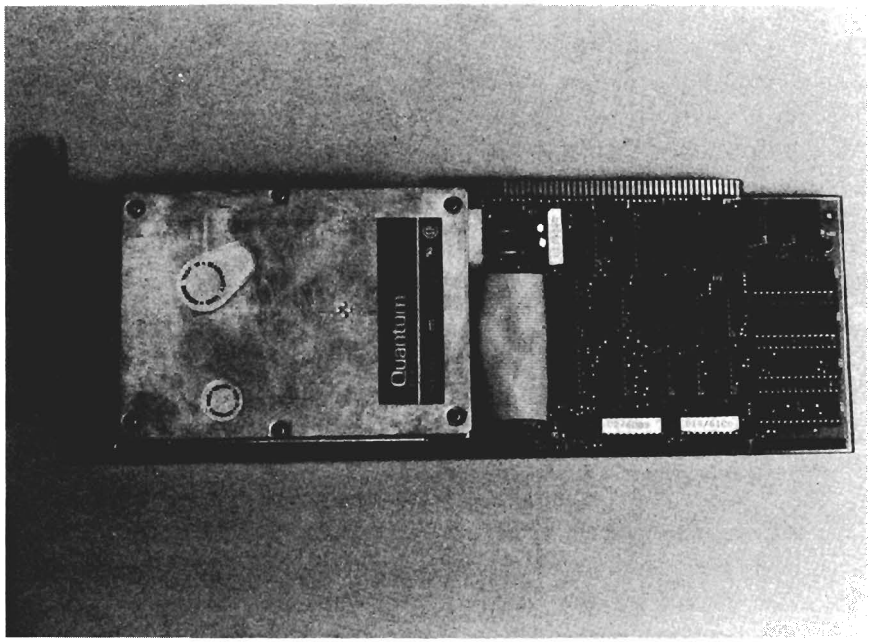
(800) 345-9871

The Impact Hard Card

Great Valley Products introduces their hard drive on a card

by George Rapp

In our May issue, I reviewed a combination hard disk controller and RAM expansion card from a company called Great Valley Products. It worked well enough and had the unique distinction of being the first multifunction card for the Amiga 2000. GVP has not been idle in the intervening months. They have yet another new and unique product for the Amiga 2000, the Impact hard disk card.



Our unit had an 80 meg hard drive installed.
Note the two Eprom sockets for future autobooting capabilities

For those of you who had the misfortune of having to use one of the original IBM PC's, you will understand the reason for a hard card. The IBM PC had two full height floppy disk drives that occupied two full height slots. There was no room for a standard full or half height hard disk drive. The Plus division of Quantum marketed one of the first hard cards. This was a combination of a hard disk and controller that occupies one card slot. GVP realized the limitation of the three disk bays provided on the Amiga and designed their hard disk and controller card to fit in the right most slot of the Amiga 2000 expansion chassis. This leaves the bays free for either floppy drives or other hard disk drives.

Like their original Impact hard disk controller, the hard card is a SCSI controller capable of supporting seven SCSI devices and uses a 16K onboard cache to maximize speed. The card itself occupies one full card slot, but the three and one-half inch hard disk is wide enough that it covers other slots unless it is in the right most position. GVP is planning to offer the hard card in three configurations, 20, 40, and 80 megabyte sizes. The 40 and 80 megabyte drives are manufactured by Quantum. The Quantum drives feature a VERY fast 19-millisecond average seek time and a proprietary 64k byte look ahead disk cache. The Quantum drives can support up to 4 mega-

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Impact Hard Card (*continued from previous page*)

bytes per second data transfer rates which is higher than AmigaDOS can currently handle. The Quantum drives also incorporate an auto park feature on power down, as well as hardware error detection/correction and retry to protect your data. These features enhance the GVP controller's performance.

The model I received for evaluation is the top-end 80 Megabyte drive. Installation is as simple as opening the A2000 and plugging the card in the slot (removing the cover of the Amiga was probably the hardest part of the installation). The hard card slides straight in the guides, although it is best to hold the hard disk itself because of its weight. The newest production models will include a metal brace behind the drive that was not on the sample I had. I would have to characterize the layout of the board as flawless. There are absolutely no extraneous traces or jumpers. The circuit board could be used as an example of how to design PC boards. It also includes the sockets for autoboot under Kickstart 1.3 like the Impact board.

The installation software is about foolproof, although somewhat limited in scope. The 40 and 80 Megabyte models divide the hard disk into two logical drives of 20 and 40 megabytes respectively. I would like more choices in configuring the logical drives, but this system has the advantage of being easy for first-time hard disk owners. It withstood all my attempts to make it fail and even responded in rather miffed tones to my feigned ignorance. Once the installation is complete, the software creates a boot disk for you to use that quickly and simply transfers the boot process to the hard disk for fast startup. A separate file called *AssignHD* in the *GVPScripts* directory of the hard disk contains all the assign commands. This file can be edited to automatically assign logical drive names to directories on the hard disk as you add software.

Now that we have gone over the hardware and installation software, the next question is how well will it perform? The Amiga was designed with multiple DMA channels. DMA stands for Direct Memory Access. This is a fancy way of saying that the Agnus and Paula chips can sometimes take over the bus from the 68000 and move blocks of data from one place to another faster than the 68000 can. The Commodore 2090 hard disk controller card uses the DMA channels and is considered to be one of the fastest controllers available. The GVP hard card does not use the DMA channels and is still fast. Since there are a limited number of DMA channels available, a fast drive that does not use them may cut down chances of conflicts with future accessories. The speed of the GVP hard card comes from the Quantum drive and an on board 16k static RAM cache. The board depends upon the block memory move capabilities to move information from the drive to the proper location in memory. Other tasks that demand CPU time are serviced while the drive is still unloading from the disk into its cache and the cache on the board. I tested the GVP board's use of CPU time by simultaneously downloading a file at 2400 baud, and ARCing a 100k binary file. Neither the download nor the ARC slowed. There was also a noticeable lack of the thrashing of the drive that I am used to hearing on other interrupt-driven boards like the C-Ltd or Supra drives for the Amiga 1000.

This time in evaluating the GVP board/disk combination, I developed a series of tests to try to compare different makes with a typical hard disk/controller configuration. I then scaled the results using the speed of the same operations on a standard floppy disk drive. Lastly, I used a weighted average of the tests performed to try to match the typical demands that I place on my system in a multitasking environment. A definitive test of disk speed is extremely difficult because of the variety of applications and demands placed upon the Amiga. Different programs can use up system resources like DMA channels, CPU clock cycles, and interrupts. In each test I tried to run several tasks concurrently with the tests. The tests covered file copying, reading, writing, byte by byte reads, and simultaneous reads, writes and calculations. All tests were run under AmigaDos 1.2 except as noted. Results are scaled to be the number of times faster than flop-

part of Access 64 is a white plug which fits on the Amiga parallel port and ends in a female 6 pin DIN connector for the standard C64 serial cable. The software consists of various drivers, CLI programs and Workbench utilities which come to you on a bootable Workbench 1.2 disk.

Turn off your Amiga and disconnect the 15X1 disk drive from your 64. Now plug the Access 64 adapter into the parallel port and connect the serial cable from the 64 drive. Turn on the Amiga and insert the Access disk when prompted for workbench. You'll notice a CLI window labelled "DiskChange" in the lower left, then the usual WB screen and disk icon appear. Open the WB window and click on the BusUtil Icon. In a few seconds a full screen window opens with gadgets for entering file names, and buttons for clicking on. Place a 64 disk in the drive and click on GET DIR to view the directory of 64 files. Want to copy a great story or letter from EasyScript? Just type the name of the 64 file in the 15xx File Name gadget; type a valid AmigaDos name in the Amiga File Name gadget; and click on DO COPY. Another gadget, COPY TO, controls the direction of the copy; Amiga to 64 or 64 to Amiga. It's as simple as that. You have an easy intuitive way to move text files and program files back and forth between your Commodore systems. The only trick to remember is that BusUtil is case sensitive. The file name of your 64 file must be typed in upper case or "file not found" will result.

"Just a minute. What about PetAscii?" you say. I may have forgotten but Dynamic Software Technologies, the authors of Access 64, didn't. The C64 and PET machines did not use industry standard ASCII character codes internally or when storing to disk. A straight copy from 64 to Amiga will result in your letter being full of the special graphics characters used on the 64 keyboard. What's needed here is a filter to convert the 64 PetAcsii to standard ASCII codes and back as needed. Sure enough, there is a gadget on the BusUtil screen called ASCII FLT. A single click and legibility is restored. The other gadgets on this all purpose screen let you format a 1541 or 1571 disk for 64 use and change device numbers if you have more than one 64 disk drive attached. Access 64 and AmigaDos work together through the use of a DST.Device and entries in the Amiga mountlist for DF8:, DF9:, etc. The exceptional flexibility of AmigaDos makes this feat possible. With Access 64 started and a 1541 drive connected, you can even format a 5.25 inch diskette as an AmigaDos device. BusUtil is not used when formatting a 1541 disk for AmigaDos. Just use the regular Amiga Format command on drive DF8: or the SYSTEM:Initialize Icon. If you do format an Amiga disk in your 1541, you'll even get an Icon for the disk and be able to use standard Intuition operations on any

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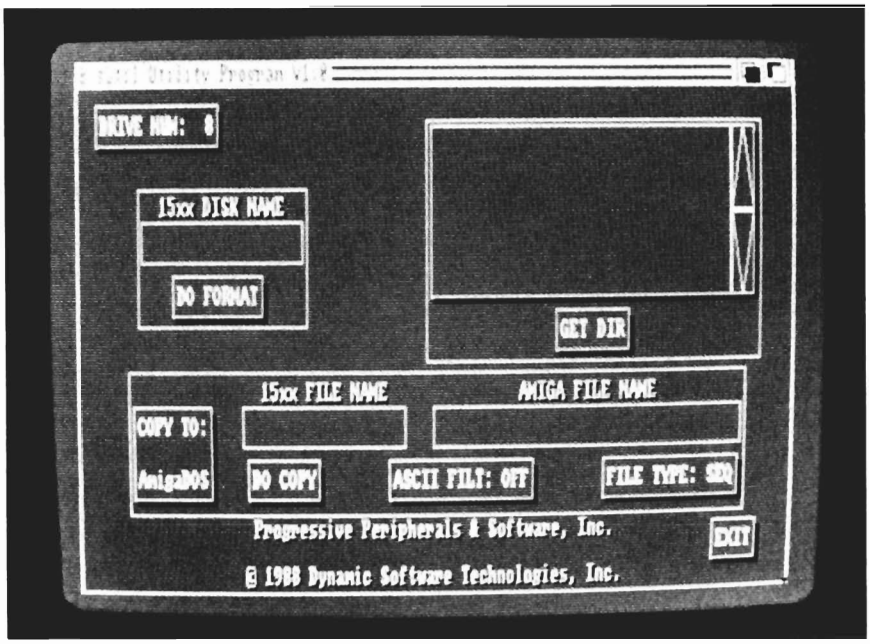
files you place there. Sure, it will only have 30 cylinders and be much slower than your 3.5 inch drives but you may have some use for this "feature".

In addition to BusUtil, there are four CLI commands for use with Access 64. DSDir, DSCopy, DSFilter, and DSFormat perform the same functions as BusUtil for those who prefer typing to mouse clicks. The other major use for Access 64 is support for Commodore serial printers. You can connect a 1525 printer directly to the Access 64 adapter or to the serial port on the 15X1 disk drive. Once connected, you can print with any Amiga program which uses the PRT: device. This includes Scribble!, Analyze!, and redirection commands; eg. Dir >PRT:. Access 64 will take care of converting characters so your printout won't be full of graphic squiggles. At first I was excited by this capability. However, a large limitation soon became obvious. The parallel.device supplied by Dynamic Software doesn't support graphic printing. That means no bit-mapped fonts, screen dumps, or printing from DPaint. The printer is capable of graphic printing, but the software to drive it in graphics mode is missing. I feel strongly that this limitation must be addressed. If Access 64 offers 64/Amiga owners an alternative to purchasing a new printer, then it should be a complete alternative. No Amiga owner can settle for text only printing on a dot-matrix printer. The documentation for Access 64 is a twenty-three page booklet which is organized in reference format. The booklet is complete and includes instructions for installing the needed software on another disk, or harddrive. There are no screen illustrations so you should load the software to follow along with the text.



The BusUtil program allows you to transfer text files between Amiga 3 1/2" and 15XX drives

The BusUtil and CLI functions of Access 64 worked well and gave ready access to my 64 files and printer. I don't see much reason for using a 15X1 disk drive for storing Amiga files, so my use of that feature was limited. Now that I've had Access 64 for a while, I've transferred all the files I'll need for some time. Of course, I transferred a couple of documents to the Amiga using modems and a bulletin board as an intermediate stop when I first bought the Amiga. Many new Amiga/64 owners could use the same process. That leaves use of the 1525 printer as the main function of Access 64. As mentioned above, until graphic printing is implemented this is a severely limited capability. Hopefully Progressive Peripherals will develop a new printer. device which supports the C64 serial port. You'll have to decide if you need continuous back and forth Access to your 64. My guess is that once a new Amiga owner moves a batch of files and masters the new word processing, database, etc. programs, the need for this type of access will be pretty limited.

Access 64 $79.95

Progressive Peripherals
464 Kalamath Street
Denver, CO 80204

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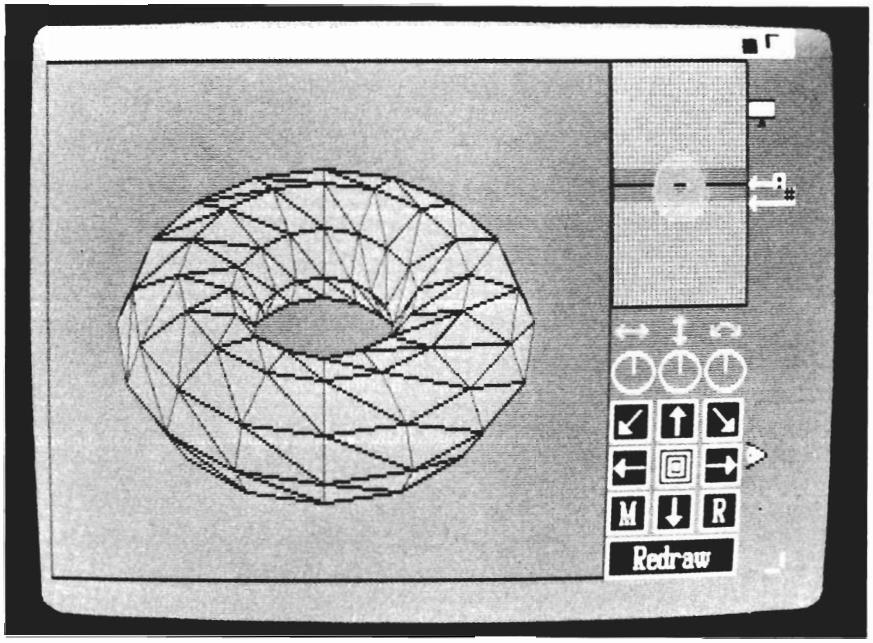
3-Demon

Mimetics delivers a better method for object creation

By Steve Dock

If you have been trying to keep up with the latest in Amiga 3D animation you know that Videoscape, Forms in Flight, Animator's Apprentice, Silver, and Sculpt 3D each provide a variety of capabilities with its own set of strengths. These packages offer object design, rendering, animation, and playback functions. That's a lot to pack into one program and has left room for someone to invent a general purpose 3 dimensional object editor with better and easier functions than the all-purpose animation systems.



Your newly created object can be rotated to the angle you wish it to appear simply by clicking on the appropriate directional icon

If you have not delved into 3D Amiga animation programs, you are probably wondering, "what's so tough? The process shouldn't be much different than working with Dpaint brushes, should it?" As the enjoyable and well written 3-Demon manual states: "objects are defined not by what they are in the real world, but by what their outer surface looks like." It took 1400 years for western artists to learn how to give paint on canvas a third dimension. It might take a budding Amiga artist many hours to do the same on the monitor screen. The existing 3D object editors design in either two dimensions with three simultaneous views, or attempt to represent all three dimensions in one view. In neither case do you see your object begin to take substance until you choose "draw" or "render" from the menus. This makes creation of complex objects a dark art at best. These programs also vary in the number of colors, surface types, light sources and polygons they support. It sure would be great if you could combine the best object creating features of each into one easy to use object editor.....

Enter 3-Demon. Mimetics has invented an appropriate name to go along with its new program.

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3-Demon (continued from previous page)

In many respects 3-Demon is devilishly clever. By concentrating on the process of 3D object design and leaving the rendering to others, many more features have been packed into a smooth working user interface. In this program, Mimetics has chosen to use triangles to make polygons rather than providing a set of predefined solids or surfaces to build with.

Clicking on the Demon's Head Icon starts the program. Keep the 140 page manual handy as you'll be asked to type in a word from the manual to successfully boot the program. When the disk stops spinning, you'll see two-thirds of the screen empty, a menu bar, and some strange looking gadgets on the right third. Pressing the right mouse button will reveal the Project menu which offers the expected loading and saving options, including Print and Save IFF. The Object menu has more substance to it. Here you can open, save, move, combine, delete, select, transform and otherwise manipulate 3D objects. The tutorial pages urge you to start by loading one of the sample objects provided on the program disk, and I concur.

Select Open and operate the file requester until a list of objects appears. Click on load and watch a small man lifting a dumbbell as the object is loaded into memory. The cylinder, cone, hemisphere, etc. will be centered in the main screen and will be drawn using lines and colored polygons. Turn your attention to the gadgets in the lower right and you'll find that you can move the object quickly and smoothly by using the arrows in the boxes, and arrows under the circles. Click on the up arrow and the object will be rotated 45 degrees on the Z axis (it will seem like you are walking under it). Click on the left pointing arrow to spin the view to the left by 45 degrees. There are also arrows for clockwise, counterclockwise, and right rotation. Other gadgets are used to simulate the depth of the view, the position of the viewer, and the location of the projection screen or lens. Slide the little eye up and down, for example, and you will affect how close or far the object looks.

To create your own object, select the New option from the Object menu. Now use the left mouse button to indicate three points and a triangle will be drawn. Continue clicking sets of three to build up the object. You'll soon want to use the rotation gadgets to turn your work so you can add to other planes (if you try drawing outside the active depth of the display, your mouse clicks will not result in the small boxes used to represent points). 3-Demon uses a slider on the left of the screen to set the depth of your points and another slider to set the area which is active in the Z dimension. Between these two sliders a small representation of your object appears. When you move the range slider, a field of dots moves over the object to show the section which is active for editing. This is a handy feature for limiting the layer you are working with.

From your first triangle on, 3-Demon will provide solid colors to help you visualize the object. These colored areas are bounded with solid lines. The onscreen representation is not intended to compete with the final ray traced or rendered version, but to help during the process of design. A View menu gives several options effecting the look of your object. You can have edges, points and triangles turned on or off. You can also replace the colors of the triangles with grey-scale shading, which I highly recommend. The shade option gives a much better sense of the volume and mass of your object.

The Edit menu lets you move, divide, quantize, flip, combine, and most importantly, add lines, triangles, and polygons to your object. When you are using polygon mode, 3-Demon will connect an arbitrary number of points into a series of polygons in the same plane. My favorite options here are Spun and Sliced. If you add a new object using Spun, the result will be similar to using a lathe. A requester will ask how many points you will be using, then use the mouse to draw a line segment. Now click on one of your points and a pop-up menu will appear. Highlight Spin-It and the line segment will be rotated through space and filled in with triangles to produce a solid object. Sliced works with outlines you draw and adds depth with

identical shaped slices. These are powerful tools and the use of grey-scale shading or solid colors helps judge the success of the result quickly.

If you need finer detail on one portion of your object, you will want to divide it into more triangles. That's what the divide option is for. Simply select and click. Now you have more points to move or surfaces to color. Speaking of moving, this is a well implemented feature. You can move a point or a group of points by choosing from the menu. A requester will ask how much "magnetism" you want to use. The stronger the magnetism, the more nearby points will be affected. Click on OK, and the pointer changes to a small magnet. As you move near points they will be attracted along with their line segments towards the magnet. When you have stretched a surface to a new location, click with the left button and the line drawing will be replaced with a revised solid area. Again you probably will want to rotate your view while changing the shape of the object. This is a big plus with 3-Demon. You can use the rotation gadgets while any tool is active. Turn and click, then turn some more. Very much like carving, the analogy used by the authors.

One disadvantage of a mouse driven interface is the lack of precision. It takes a very steady hand to draw every line exactly where you intend. 3-Demon recognized that numbers can complement onscreen drawing. You can turn on mouse coordinates for starters and see the x and y coordinate of each point in the top left of the screen. The view menu gives several numerical entry options for controlling the depth, view and scale with precision. You can add a grid to your object editing surface and use it to for precise alignment. There is even a two dimensional "Flat View" available. When selected, you have grid lines and manipulating capabilities similar to a drafting program. The Quantizing function is like a grid-snap and will move parts or all of your object into straight line alignment. A transformation window also provides for numeric precision when scaling, rotating or moving objects (if you are creating objects whose motions will be linked, there are options for Hierarchical connections on the edit menu).

Well, I've touched on many of the drawing tools, but neglected the shading and surface effects. These are added to triangles, surfaces or the entire object at your preference. A separate window allows you to define many named surfaces with unique colors, reflective properties, transparency, and lighting. Click on one of your surfaces and use the paint brush to apply its characteristics to an object. Again, these effects will not be show in 3-Demon, but must await your use of a rendering program. There are many options of color and surface representation that will not apply in all the rendering programs, but the 3-Demon file format will retain all the detail for future editing. Here is another area where Mimetics has performed some wizzardry. 3-Demon lets you save objects for use by the most popular programs; VideoScape, Sculpt 3D, Silver, and Forms in Flight. You can even use 3-Demon to edit and translate objects from Sculpt and Videoscape (the only major omission here is support for Animator's Apprentice). 3-Demon knows that it supports many more colors per object that Videoscape, so saving in this format will automatically reduce the palette to eight colors. Sculpt 3D objects will have the suffix .scene added, and Forms in Flight objects will have both the .mma and .mmo files created for them.

I was impressed with the object editing capabilities of 3-Demon. More than that, I found the user interface capable and very well behaved. It multitasked easily and never crashed. The objects which I transferred to Videoscape and Sculpt-3D did so without a glitch. The only complaints I can make relate to the lack of keyboard equivalents, and support for Animator's Apprentice. Both of these can be remedied in a future release. Until we get a look at 3D Modeler from Aegis, 3-Demon looks like the most capable 3D object editor available.

3-Demon $99.95
Mimetics
P.O. Box 1560
Cupertino, CA 95015
(408) 741-0117

Warlock

Haunting text/graphic adventure from Incognito Software

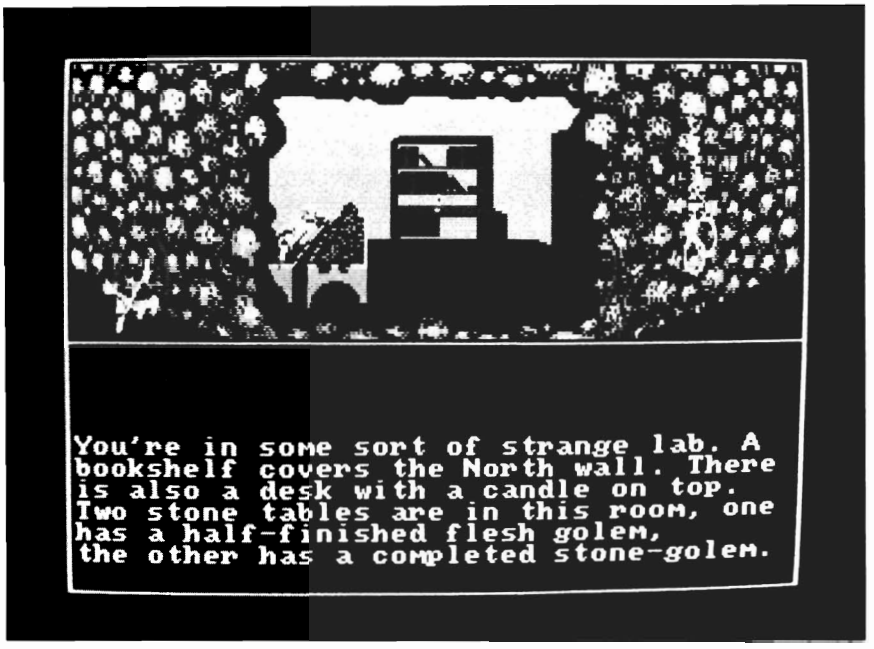
by Anthony Bevivino

Exits- East
Items- Golem

You're in some sort of strange lab. A bookshelf covers the North wall. There is also a desk with a candle on top. Two stone tables are in this room, one has a half-finished flesh golem, the other has a completed stone golem. Now What?

The above is an excerpt from Warlock, a new graphics-text adventure from Incognito Software. The goal of the adventure is to rescue a group of Elders from the evil Warlock who has captured them, using only your wits and any items you may happen to find on your quest. While this may seem like the "standard fare" for adventure games, Incognito Software has added a new element to Warlock that separates it from most. Just what is this secret ingredient? Believe it or not, Warlock is a TRUE CHALLENGE!!

The lab where you begin your journey into Warlock



As all veteran adventure gamers know, after a few hours of map making and note taking, you usually have the answer. When I read "aimed at veteran adventurers" in the Warlock Documentation, I of course laughed heartily at this gross overexaggeration. My laughter soon died away as I was immediately stumped by the very first room!!

While the extremely challenging level of play is a major plus for Warlock, there are many other things that I like about this game. Imagine my delight when upon booting up, "Play Warlock from RAM: (Y/N)" appeared in front of my disbelieving eyes! Yes, it's true, someone has finally realized that Amiga users have more than 512K and would like to be able to use it. It takes close to 5 minutes to load into RAM:, but the increase in speed of play is enormous. I am not sure exactly how much RAM: is needed, but considering the

game consists of only one disk, it is safe to assume a megabyte would be sufficient.

Another fine feature is the use of pull-down mouse menus for the commonly used commands. Just hold down the right mouse button and commands such as "examine", "take", "attack", etc. are at your fingertips. One handy feature I've used in other adventure games, but not present in Warlock, is the extensive use of the function keys. The F1 key does, however, repeat the previous command. It would be nice to see more of this in future releases.

One small, but greatly appreciated, feature is the use of a clear font for the text. The font used is large, slightly archaic (adds to the atmosphere of the game) and is a pleasure to read. The colors used are also excellent, and consequently, long hours of game play won't result in a massive headache. While I would like to be able to pick my own fonts and colors, the ones used in Warlock are quite sufficient.

Since Warlock is a graphic-text adventure, it is logical to assume that graphics and text are a major part of the game. The graphics in Warlock are plentiful with many different objects and locations. The images are sufficient to give the general idea of where you are, but do not have any real interaction capabilities within the game play. The descriptions in Warlock, however, are very well done. When first entering a room, a brief and clear description is presented. There are no two-page room descriptions to confuse you with sheer volume and frustrate you with sheer stupidity in this game! Throughout the game I felt that I was being presented with the information I needed to solve the quest and this is all I, and many other veteran adventure gamers, ever really desire.

As a qualifying veteran game player my first objection involves the parser used in Warlock. It accepts only two words at a time and has a limited capacity for understanding. It is frustrating to think that some of the first adventure games, like the classic Zork, had a more extensive one. I feel that if this game is aimed at veteran players, then a top-notch parser is a must. If the graphics are not essential to the game, than cut back on the quantity of pictures and give outstanding quality for a parser. It makes a game of this level of difficulty even harder when your ability to communicate with the game is limited in this way.

Another personal point is the heavy copy protection used on this program. I cringe every boot up when my drive does gymnastics. The strange noises and jolts my drive emits discourage me from booting up unless I plan to play for a long period of time. A password type of copy protection would be more favorable. The game is saved on the master disk, which means it must be write enabled. With the constant amount of saving and re-loading used in most adventure games, a hard error is an ever threatening possibility.

Warlock would be much enhanced with the addition of sound; whether it was the sound of a creaking door, or the inclusion of some creepy music. Because of the eerie theme of Warlock, it would benefit from this more so than many other games.

All in all, Warlock is a good game for a specific type of game player, the veteran adventure gamer. Within this group the game will be much appreciated. It offers a great challenge in a simple and effective manner.

Apparently this game was designed for the $25 price bracket, and consequently, you don't get alot of the perks that you do with the higher priced spread. Game play is the emphasis of this program. The parser does take away from the game, but it can be accepted. At $25, I feel the program is worth it for a challenging graphics-text adventure.

Warlock $24.95

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Shakespeare 1.1

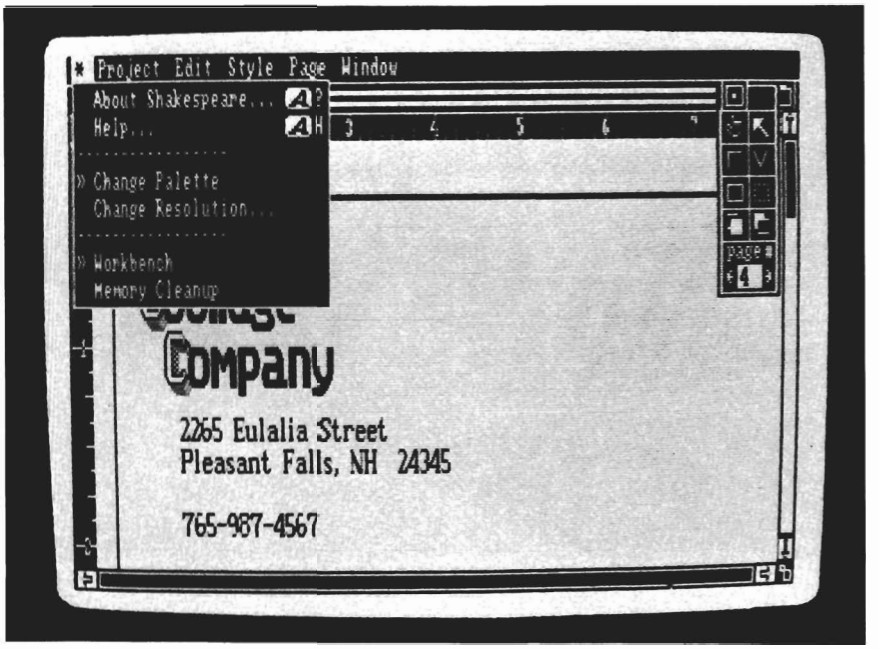
This latest version corrects some bugs and adds some enhancements

By William Barker

Just a few issues ago the Sentry reviewed Shakespeare, the Color Desktop Publishing Program from Infinity Software. In the previous review my colleague Walter Steuber and I felt that the program had missed the mark. The Amiga needed a respectable full-featured desktop publishing program, not a limited version dedicated to color. Well version 1.1 of this program was recently sent to us for an updated review.

Shakespeare has been upgraded with several important enhancements. As reported in our earlier review, the program uses the Workbench V1.3 versions of the printer drivers and printer.device. Although these are not the final release, Shakespeare v1.1 includes the latest "Gamma" drivers, an improved printer.device, and several new printer drivers. The increase in graphics print speed is significant. The new V1.3 Preferences allows the user to set various graphic density modes for each printer. Now you can set the graphic resolution of your printer to its maximum if it is a 1.3 supported printer. You may also choose from one of three types of dithering for graphic output to suit your needs.

One of the new menu selections, "Memory Cleanup" helps in the much needed conservation of chip RAM



Memory management has been improved to take full advantage of expansion RAM. While Shakespeare will work on a 512K Amiga, Infinity recommends 1 MByte of RAM. In my own experience, even 2.5 MByte of RAM was often not enough to prevent visits from the guru. Some of the newly instituted memory management routines try to reserve 100 KBytes of chip RAM available for other programs to use in multitasking, as well as 20 KBytes for menus and requesters.

The program will also attempt to swap all articles not on the current page to fast RAM. Also, when chip memory is low,

Shakespeare will attempt to close Workbench to make more chip RAM available.

There is a new Memory Cleanup selection on the Boing menu, as well as information on available chip and fast RAM in the Abouts selection. Memory Cleanup forces the program to swap as much of the current project to fast RAM as possible. However, I wished there was a keyboard or function key equivalent for this selection since I found myself using this feature more than I wished.

Other operating enhancements include use of the SetMap command to recognize international character sets and the alternate character set. When loading text files for use in the program, you now have the option of having carriage returns stripped or not, a useful feature similar to, but not as varied, as that in City Desk.

One of the most useful new features is alignment guides for use when placing a graphic on the page or moving a text frame. This feature allows for very accurate placement of various articles on the page. The guides consist of four lines which line up with the four corners of the object and extend all the way to the rulers at the top and left sides of the page. The rulers now have markings to one-eighth inch. Although the alignment markers are very useful, Shakespeare still needs a better means of rough placement of borders and frames on a page. As it functions now, you can only work on a portion of the entire page. The full page display option shows the entire page for reference only, and cannot be used for editing or placement.

Support for multiple columns is another new feature that I really found useful. To create multiple columns, simply select the Create Columns option from the Page menu and fill in the number of columns, gutters, margins, etc. Shakespeare's columns can be changed at any time, even after text has been flowed into them. Trying to create identical columns with even gutter spacing was a nightmare in the original version. I am glad to have this desktop publishing necessity added.

Another handy but standard desktop publishing feature is an easy method for deleting pieces of your "issue". Frames or borders may now be deleted by double clicking on the desired frame using the right mouse button. I found that I had to do this more than I wanted because of the method of placing frames on the page with the Frame or Border tools, which is a click and drag operation. Often, I could not get the left side of the frame aligned. (In this area, I have a suggestion for the programmers at Infinity: offer the option to place a text frame on the page using the mouse for the top left point of the frame, and allow the cursor keys to be used for movement to the right and down). The move tool now allows you to scroll a page by dragging on the page, but still offers its original functions of moving frames or borders and cropping graphics. Although this is an improvement, page scrolling using the cursor keys, perhaps in combination with the shift key, would add even more. One of my biggest gripes with the program is that when entering text into a frame from the keyboard, the screen does not scroll with the text if the frame extends past the view of the screen. It is a pain to constantly move the screen to expose a new area of a frame into view.

I had hoped for the addition of text hyphenation with 1.1. This is a necessity for a full-featured desktop publishing program. Alas, Shakespeare still lacks this feature and suffers from some of the same problems as other DTP programs for the Amiga. Text can take on a blotched appearance, with too much white space showing on the printed page. Hopefully, the program will include this in the near future, along with a means of spell checking.

With these additions, Shakespeare is a much improved product. However, to successfully use the program, you will have to do some planning. Prepare by placing all your text files, graphics, and fonts on a separate data disk. Next select which of the four resolutions you wish to work with and the number of colors you wish to use. (2 to 32 depending on resolution. I found

(continued on next page)

Shakespeare 1.1 *(continued from previous page)*

that 640X 400 or 640X 200 gave me the best results with my printers). Then, set the page size.

Since Shakespeare prints each pixel on the screen in direct correspondence to the printer, the manual suggests that you set the Page Setup option to one-half the X an Y values for your printer or to set the page size to one-half its size (4 by 5). It is important to experiment until you find the right combination for your printer. To create graphic output for high resolution printers consumes tremendous amounts of chip RAM. For the HP_DeskJet, which has a resolution of 300 dpi in its highest graphics mode, I used 150 by 150 dpi in the X and Y resolutions. (The HP_PaintJet uses 180 by 180 dpi).

A sample printout from Shakespeare 1.1 using the HP DeskJet printer at 300 dpi

Now you can choose the Chart selection from the menu and load all the text and graphics items you wish to work with in memory. You then decide which fonts to use in your current issue. Creating your page layout takes the most time. Placing various frames and borders on the page for text and graphics is a trial and error process. I would like to see an easier means of placing text in frames, especially when a mistake is made. Currently you must highlight, cut, and paste the text into the frames or select the chart requester and the place text selection each time.

A welcome addition with version 1.1 is the inclusion of several templates on the Clip Art disk. These include newsletters, business cards, and letterheads. By loading one and replacing the text and graphics with your own, you can avoid the trouble of designing an attractive layout from scratch.

Since this program is designed with color desktop publishing in mind, you can also select text and border colors for each article on the page. Colors can be used as gels behind text, or overlayed as needed. Color images which are included in your issue will keep their individual palettes. This is a unique aspect of Shakespeare and means that every IFF image is kept in memory in full detail, while rendered on screen in a common palette. The entire palette is used when printing to produce an exceptional quality color output. Finally, it is important that you save the entire Issue (the current project) to disk before printing (Shakespeare uses some unique terminology; eg. Chart and Issue to refer to text and project so don't let this

confuse you). I often encountered system crashes when attempting to print directly, even after using the Memory Cleanup to free chip RAM.

When you have completed your page layout and select the print option, you will see that 2:1 print has been selected. This feature is new to Shakespeare and requires some experimentation on the users part. The manual also explains that you must scale any graphics on the screen using the rulers as guides since the program is WYSIWYG to the extreme. Therefore a 100 dpi printer will print a 640X400 graphic as 6.4 inches wide, while a 200 dpi printer will print the same graphic as 3.2 in width. Fonts will also appear different on various dpi printer settings.

The final object of Desktop Publishing is the printed document. I have some good news to report in this context, namely the high quality output which can be obtained with 24 pin dot-matrix printers and the HP_DeskJet inkjet printer. All the page and printer setup may be painstaking and less than obvious, but the quality of the final product is excellent. The color output on both the 72 DPI Canon PJ1080 and 180 DPI HP_PaintJet were excellent, which is what Shakespeare's designers set out to do.

However, it is a fact that most desktop publishing is designed for reproduction, and that, in most cases, means black and white. The mass of Amiga owners may enjoy 4096 colors on the screen, but relatively few can expect to distribute top of the line hard copy versions. Although color is the unique focus of Shakespeare, the black and white results can be superior. The program yields good to excellent output for 24 pin printers. I found that I got mixed results from my Epson LQ-850 because of an uneveness of shade. The NEC_Pinwriter, which is capable of 360X360 dpi, should yield exceptional results with Shakespeare, rivaling the output of laser printers (Shakespeare 1.1 has also improved its support for PostScript output with excellent 16 shade gray scale renderings of graphic images). I found that I got the best results by selecting the highest graphic mode for a printer in Preferences, then selecting one of the three modes for dithering, and finally choosing gray-scale 1 from the graphics 1 gadget. For the HP_DeskJet this is density 4.

At last I've found a program which does justice to my Hp_Deskjet 300 DPI inkjet printer. Printouts take on the average of 15 minutes per page, but the results are as good as the output from an HP_LaserJet. The sixteen shade gray-scale rendition of graphic images is the best I have seen in Amiga Desktop publishing programs using dot matrix printers. The graphics output was even more outstanding on the DeskJet, since inkjet printers produce an even intensity of dots (unlike dot matrix printers).

(continued on page 62)

World Tour Golf

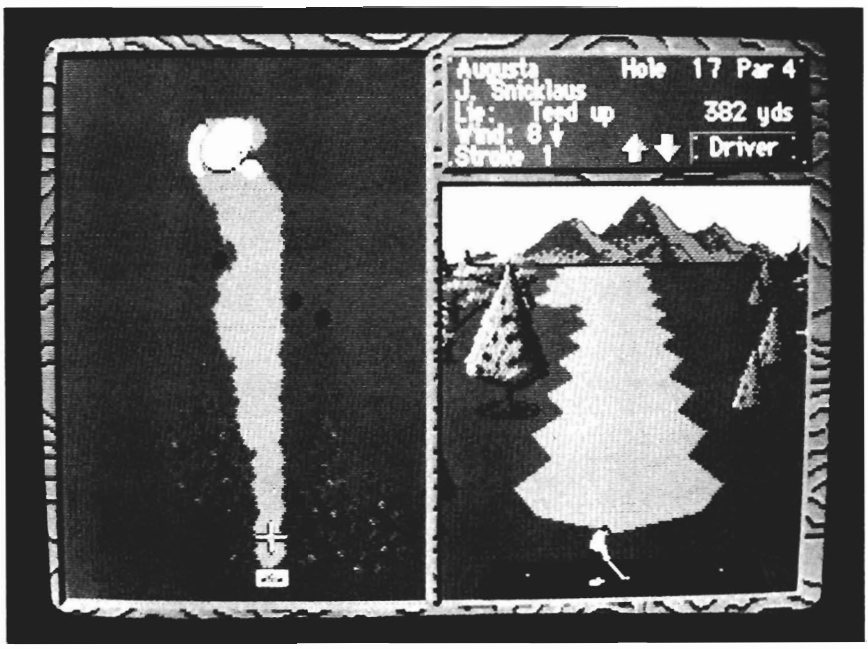
E.A.'s answer to Golf Simulators

by George Rapp

In one of his books, the famous golfer Arnold Palmer states that what he likes best about golf is the outdoors. I must agree with him that on many occasions, playing golf was mainly an excuse to get outdoors and have a nice walk around the parklike fairways and greens. Playing golf on a computer can not capture these outdoor pleasures, but it can reproduce much of the strategy of the game and some of the skills required to play well. World Tour Golf from Electronic Arts even does a fair job of reproducing the outdoors.

There are already several Amiga golf simulators on the market that have sold well. Most try to reproduce a game of golf in much the same way. In these and in World Tour, you control a shot by breaking the normal golf swing into components. You use the mouse or keyboard to control the timing of the each component part of a swing. A good golfer will pay attention to his backswing, downswing, and impact with the ball. Lengthening the backswing will increase the power, but also the chance for error. The downswing terminates when the club strikes the ball. The impact ideally should be at the nadir of the swing for a flat, straight flight of the golf ball. The best golfers will shift the point of impact either slightly ahead of the lowest point which will cause the ball to curve away from the golfer, or after the lowest point which will make the ball curve towards the side that the golfer is standing on. When these curves occur unexpectedly they are called the dreaded slice and hook respectively.

World Tour Golf features simultaneous multiple views with quickly drawn, detailed scenery



World Tour Golf gives the unique opportunity to select characteristics of the golfer that will represent you. You can vary his strength as a golfer, his accuracy in hitting shots, tendency to hook or slice, and his ability to get out of trouble from bad lies.

You can give each golfer a name and even save them to disk for later recall.

You control the on screen golfer using the space bar to vary his swing timing. Clicking over the part of the screen with the player pops up a clock-like gauge. The gauge is marked with several major divisions and a couple regions of color. The marks represent percentage of a full swing in ten percent increments. It is possible to go past 100% which depicts "overswing" or extra effort in swinging. This way, the gauge matches the path that the golf club takes in a typical swing. To hit a straight shot, you must tap the space bar once to start the backswing, then wait till the gauge winds up to the percent of a full swing you want and tap the space bar again. Once you have indicated the top of the swing, the downswing starts immediately. You click once more at the bottom of the swing to place where in the swing the club impacts the ball. The very bottom is straight, the 7 o'clock side is a hook and the 5 o'clock side is a slice. Terrain occasionally dictates a deliberate use of the hook or slice to avoid obstacles.

Obstacles abound in World Tour Golf. You have a nice selection of courses to choose from, all filled with trees, hills, bunkers, and water hazards waiting to catch your ball. The screen is divided into three windows. One is a view from just behind the golfer, another is an overhead view, and the last is a status box at the top left of the screen. You always have a clear view as to where you are and where you want to go. You aim a shot with a set of cross-hairs in the overhead view window. The cross-hairs are always positioned for you directly at the hole. This is usually not desirable since it carries your shot over many hazards or is just too far away. Change the aim by clicking in the overhead view.

This was the first area of difficulty that I encountered. Aiming with the cross-hairs is too coarse and you must depend upon precision shot making to reach the green or fairway. World Tour does offer a shortcut for making good straight shots through the use of the number keys. Each number between 1 and 5 produces a perfect shot at 20% times the number typed of a full swing. I found myself using this short cut all too often since the power gauge that pops up on the screen is too small to be resolute at anything above 60% to be of much use. This would be a much better game and a more realistic simulation if the aim was finer and the gauge bigger. It could conceivably be a full screen gauge since the golfer on screen swings after you are done with the gauge.

Putting on the greens is also affected by the same undersized gauge. The greens have contours and slopes that are shown as arrows or braces depending upon the severity of the hills. Putting differs from normal swings in that one less mouse click is needed. World Tour assumes that you won't be hooking or slicing a putt, so a click to start the backswing and downswing are all that is needed. Both the play from the tee and on the green improve with practice and you have the option for using the practice green and driving range to hone your skills. You can also select any hole from the stored courses as a practice hole.

World Tour unquestionably provides the best graphics of any Amiga golf game. All objects are in fine detail, both at a distance and up close. Colors are well chosen and convey the idea of different types of trees and grass. Wind and weather are also a factor, and show an effort towards realism.

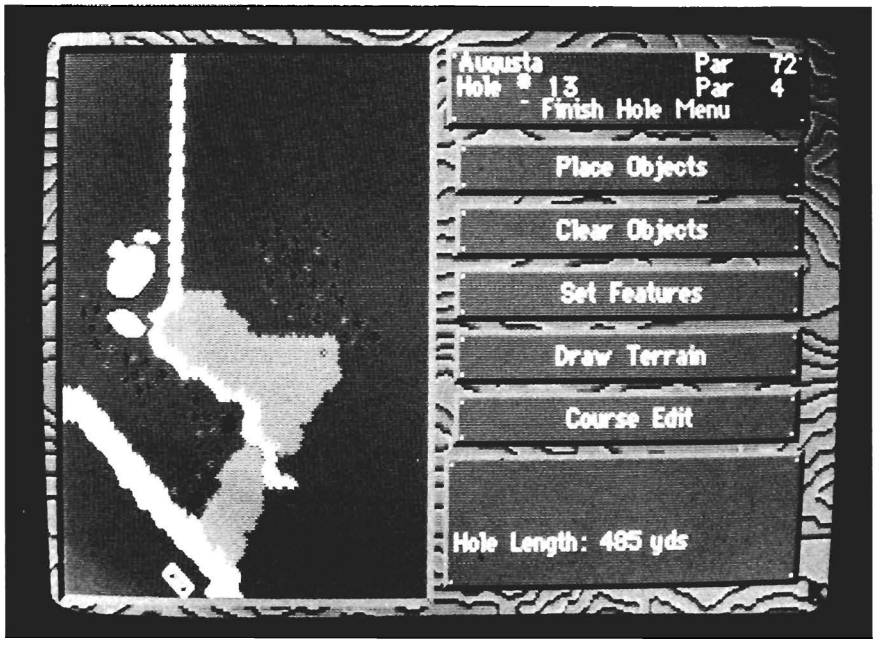
World Tour is already a complete golf package, but the authors did not stop there. A full course editor is included that will allow you to change any hole of any course stored on the disk, or to make whole new courses. Creating a course is much like using Deluxe Paint. You select colors and hazards from a palette and drop them on the hole with a click of the mouse button. Keyboard strokes are included as an alternative to using the mouse. One nice feature that I have not seen elsewhere is the option to play the hole that you just created. This makes for much easier course construction. The construction process is slightly slow since the objects are placed first, then smoothly rendered later.

(continued on next page)

World Tour Golf *(continued from previous page)*

This makes the layout process more difficult, but the results are worth the trouble.

My idea of a good golf simulator is one that challenges the player in strategy of play and requires a degree of physical coordination similiar to that of the real game. World Tour is a very good golf game, but it is not a great one. Its major lack is the type of fine control possible on Accolade's Mean 18. Mean 18 uses the same kind of clicks to control the swing, but its gauge is linear and easier to see. A finer aim of the golf shot is critical. If it were possible to aim more precisely, I could use the keyboard perfect shot maker more often and avoid the undersized gauge.



A nice feature of WTG is the Course Construction option with which you can create original holes, or edit the attributes of existing ones

In my opinion, Mean 18 is the major competition for World Tour, at least in so far as playability is concerned. It offers the added feature of being able to take courses from the MS-DOS version. These include many courses of special interest that are available for Mean 18 in the public domain. Mean 18 does, however, use lower resolution graphics which give a "blockier" appearance to objects on the screen. It also lacks the ability to create different golfers, instead using only a beginner and expert setting. These lacks are overcome by the control of the club. Mean 18 is probably a better choice for groups and occasional players. World Tour is preferable for a single person playing or a perfectionist in game play. It is definitely the best at showing the graphic superiority of the Amiga. I was surprised to see the graphics on the package are screen shots from the Commodore 64 or IBM. This doesn't make sense in light of the fact that is has become standard practice for software developers to use Amiga screen shots on their packaging. from a marketing standpoint. I also want to point out the copy protection that Electronic Arts continues to use. The program puts up a small image of a golf hole from a famous course on the screen and asks you to identify it. You have to flip through the 17 page manual to find the matching picture. Now this might seem like a small thing to ask, but it all depends on what you are trying to match up these in screen images with. In this case, the depiction of these courses in the manual are actually 1" high laser dumps. Besides many of these courses looking similar on the printed page, the reproduction quality is not the greatest either. It takes much of the enjoyment out of a game if I have to play "Concentration" before I can start.

It would only take a few changes in club control to make World Tour golf a hands down winner. You are not going to go very wrong if you choose World Tour Golf, but without these needed refinements, I would say that it is not up to *par* with what it could be.

World Tour Golf $39.95
Electronic Arts
1820 Gateway Drive
San Mateo CA. 94404
(415) 571-7171

Sound Oasis

Digital Sampling for the Amiga grows up

by Tom Bucklin

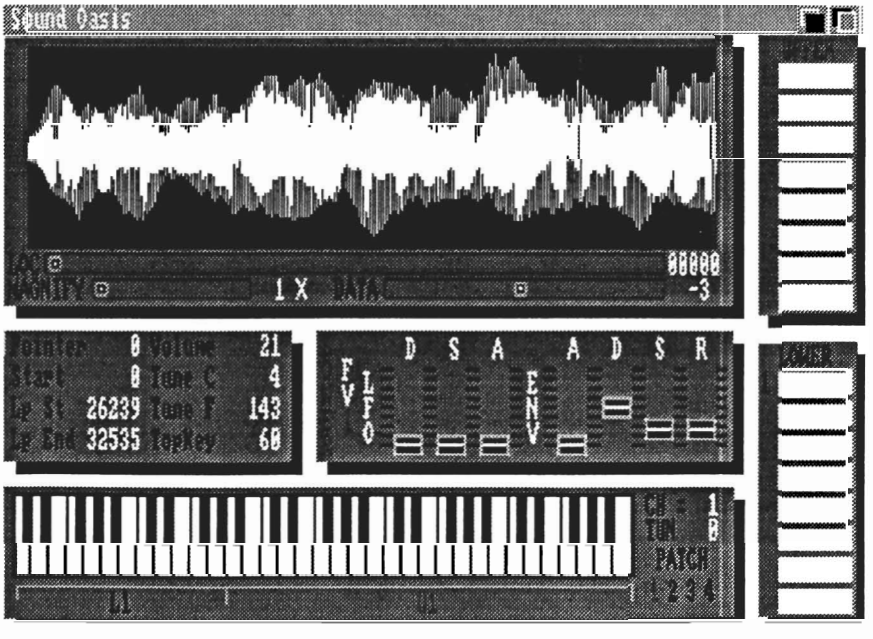
Ever since the instrument sounds from pre-release versions of MusicCraft were heard, musically inclined Amiga users have been mumbling words like "samples" with a bit of frustration.

Granted, part of this frustration arises out of the fact that the Amiga, as a musical instrument, does not internally provide the kind of A-D (analog to digital) rate that you will find in today's modern sampling synths. This factor affects the realism of your sample, and sounds produced at very low A-D rates suffer from noise.

It is this fact that brings home the importance of starting with a well produced sample that has low noise. Many who have sought to produce their own samples with Amiga peripherals have come up with some very impressive results. However, there are inherent problems with this approach as well, not the least of which is the discovery that if you want to make a sample of a certain instrument, you have to have access to such an instrument. Although this sounds simplistic, it still can involve considerable time and effort on the part of the "sampler" to achieve a relatively noise free sound.

Enter New Wave's *Sound Oasis* to the rescue! With this innovative approach, the Amiga user now has access to a myriad of pre-sampled, performance quality sounds. Sound Oasis achieves this breakthrough by enabling you to read library disks from Ensoniq's popular Mirage Sampling Keyboard with your Amiga disk drive! Sounds incredible, right? It is! Although Ensoniq is reported to have past Commodore personnel involved in the design process of their products, putting Mirage disk into your Amiga drive is like trying put a square peg in a round hole. Suffice it to say, it probably took some late nights on the part of programmer Chris Moulios to produce a product that could interpret the Mirage "language".

The Sound Oasis work screen



Sound Oasis (*continued from previous page*)

Mirage - trendsetting sampling

When the Mirage was introduced, it broke new ground in both pricing and sampling quality. Boasting a built in 3 1/2" disk drive, banks of samples could be loaded and stored with ease. The initial sound collection as provided by Ensoniq has now grown to literally thousands available through a variety of vendors....thousands of sounds that we now have access to, thanks to New Wave.

Sound Oasis consists of a single disk and a mere 14 page manual. For being small in size, the manual finds space to convey the necessary elements of program operation, as well as providing informative sections on the science of digital sampling and Mirage attributes. Certainly, part of the reason that New Wave can get away with a manual of this size for a product of this type is due to the intuitive layout and operation of Sound Oasis. Being a true Amiga enthusiast, I worked for some time with the program before pausing to read even this modest manual and was able to discover most of the program's features and operational functions in short order.

The first thing to do in your sample gathering process is to make a backup of your program diskette. As is policy with other New Wave products, Sound Oasis is not copy protected in way, relying instead on the integrity of the user. Let's not disappoint them. Unprotected music software is a welcome commodity to the MIDI user. Soon after booting, you'll find yourself within the program's main work screen. With the variety of adjustable numeric ranges present here, one could easily feel overwhelmed. The cure for this, however, lies in a basic understanding of the way the Mirage handles its sounds. The Mirage disks hold three sets of upper and lower sounds (in relation to a keyboard). The upper and lower portions can be variations of the same sample, or they can be completely different ones, such as piano on the left hand with strings on the right. The latter is accomplished by the ability to assign certain "splits" to given samples. This is absolutely essential in the case of an instrument such as the piano. A single piano sample played at various pitches would no longer sound like a piano. Therefore, it is typical in the case of a piano to take several samples at different pitches, which can be assigned to keyboard regions best representing the original sound.

To begin your sample collection, you choose the *Load Mirage Disk* option from the Project menu. You will be presented with a new window which allows you to selectively choose which sound banks you wish to load: Upper, Lower, or both of the keyboard sections for any of the three sounds on the Mirage disk. Your choice will result in the *immediate* execution of the program's loading procedure. That brings up an important point. When reading the manual to walk yourself through this particular procedure, a request to insert your Mirage disk is never actually given. On first trials, I assumed that, having chosen your Mirage load parameters, a requestor of some sort would come up to ask you to "Insert Mirage Disk." You find out fast that this is not the case, receiving instead the guru requestor....to reboot. This is easily remedied by making sure that the Mirage disk is in DF0: *before* you make your selection from the setup window.

Although it can take up to 4 minutes for Sound Oasis to read and interpret a Mirage disk, the ability for the Amiga to load in these sounds in any period of time is quite impressive. In my work with the program, I found that I could typically load in a bank of Upper and Lower sounds in less than 4 minutes. Once loaded, the indicated sound's waveform is displayed in the Waveform Window. However, this is not just a static display of air disturbance characteristics. The Magnification slider below the window zooms you in or out for close-up analysis. With the Location slider, you can scroll through different locations in the wave on a horizontal plane. By clicking directly on a given location along the waveform, you set a marker that may be used for Start, Loop Start, and Loop End functions.

There is one more slider located below the Waveform Window named, "Data." Movement of the Data slider affects the data that is contained at the place within the sound bank pointed to by the

pointer value. This can provide some useful, although not easily accomplished, editing abilities.

With your Mirage sounds loaded into memory, activating the appropriate selections under the Preference menu will allow you to select your input device and *audition* your sound. You can hear the sounds by using either the Amiga keyboard, an outboard MIDI keyboard, or by clicking on the representation of the piano-style keyboard located at the bottom of your screen. There is also an option to turn off the audio filter in the Amiga 500 and 2000s, a move which, in most cases, is highly recommended.

When using an external MIDI device for control, the program provides for receiving the MIDI note information on channels 1 through 16. Selection of the channel is accomplished by clicking on either the right or left side of the CH= icon located to the right of the keyboard. With this capability, you can turn on your synthesizer's local voice and play simultaneously with the Amiga sample. In order to facilitate this usage, there is a provision for tuning the pitch of the Amiga sample to match that of your synthesizer.

Now it is no accident that you are able to *audition* these sounds, because here is where the work begins. The author indicates that what you have transferred to the Amiga is what he calls, "the raw sample with no processing." What this means is that certain crucial elements of the sound are lacking. The decay of a piano note and the vibrato of a violin are noted examples of missing characteristics of the recently obtained sounds. The facility for restoring these vital elements allows adjustment of both the Low Frequency Oscillator and Envelope of the sound. The first (LFO) is used most commonly to create vibrato effects. With its independent Delay, Speed, and Amount sliders, the LFO has a full range of adjustment parameters.

The Envelope adjusters are used to alter the Attack, Decay, Sustain, and Release of a given sound. These attributes describe the volume level of a sound over a given period of time. In practical usage, however, the manual gives an all too brief explanation of the effect of these aspects for the uninitiated. It suggests, instead, observation through participation. In other words, start tweaking those sliders and pay attention to the variances obtained at different settings. Several highly impressive sound examples have been included on the Oasis disk to aid you in this endeavor. Even though I am a great supporter of short manuals, I do, however, feel that this program would benefit greatly from a tutorial focused on getting the most out of these controls.

Once you're satisfied with your sounds, you have a choice of ways to save your information, and each one of them leads to some exciting possibilities. The first option, "Save Oasis File" will create a file that contains all your information as it appears in your Sound Oasis window. This selection will allow you to recall your sounds at another time for further tweaking. Equally important to this option is the news that New Wave has released version 1.21 of Dynamic Studio which has full support for their Oasis file format. With the added menu options you can import the sounds, which can be played by Dynamic Studio's sequencer.

The second save option, "Save IFF Instrument" converts your Sound Oasis file into an IFF instrument that is usable with a variety Amiga programs.

A variation on the second option, the "Save IFF One Shot " selection is useful for creating sound files that can be used with programs such as Dynamic Drums or the Drum Machine in Dynamic Studio.

My conclusions about Sound Oasis are extremely favorable. The ability to have access to the Mirage library of sounds is impressive, and New Wave has carried it out with style. Although they require some initial fine tuning, the resulting quality of these sounds can be nothing short of exceptional. They can make your Amiga an active participant rather than a casual observer of your music making.

Sound Oasis $99.95

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The Art of Chess

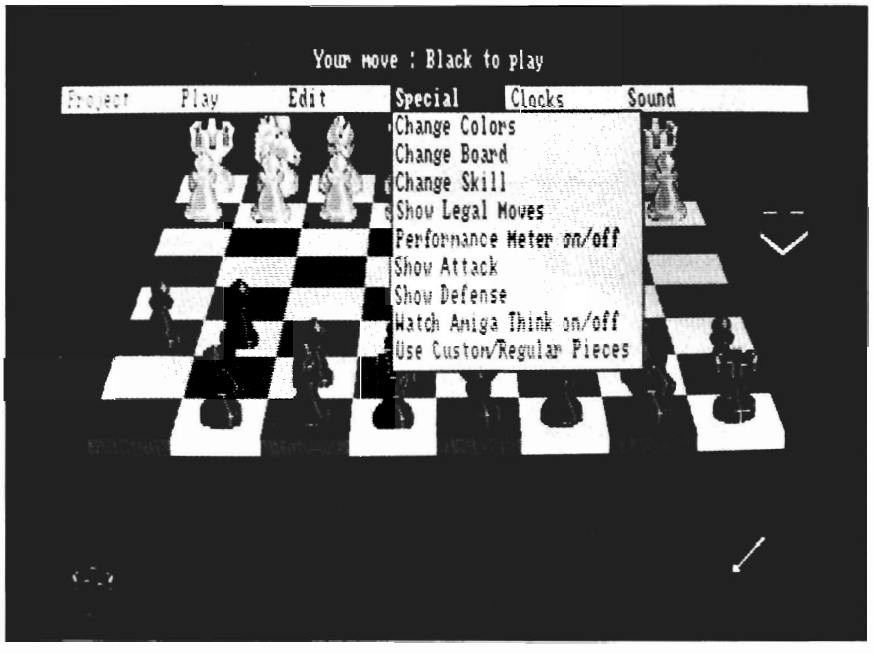
The newest chess simulator entry

by Walter Steuber

Chess has an intense fascination for some of us Amiga users. When a new chess program comes on the market, we bubble over with questions about it. Is it challenging? Is it FUN? How imaginative is it? How fast does it respond? What are its special features? How will it do against others in head-on competition? Uninfected users may think it's just a game, but we know better. A chess program is a living personality; sometimes timid, sometimes quirky, sometimes boring and sometimes brilliant.

The Art of Chess is the new personality on the block. Chessmate was the first really good chess game for the Amiga, and it furnished many of us with long hours of diversion. However, Chessmaster 2000 plays with such flair, skill and inventiveness that it clearly is the present king of the mountain and the one Art of Chess will have to beat. After all, Chess is war. Just as there is only one victor in a tournament of the grandmasters, there is room for only one program at the top of Amiga chess.

Art of Chess has well rendered chess pieces along with multiple modes of play



The Art of Chess comes on a single, self-booting disk that cannot be backed up. It plays fine on a 512K machine, but it plays even better, they say, on a machine with additional self-configuring memory. Naturally, it plays a legal, sensible game, observing all the little niceties of capturing en passant, automatically moving the rook in a castling, or resigning in a hopeless situation. It does everything we have come to expect of a chess program and it tosses in a few surprising additional features, too. Just as Chessmaster does, it draws from a library of openings and it randomizes its moves so that every game is different.

The extra features are called in by clicking on pull-down menus, with no use of the keyboard whatever. They include a full

selection of options such as choice of going first or second, choice of perspective from which the board is viewed, choice of timing rules and clock displays, means to start from any arrangement of the pieces, many levels of time to be taken per play, a slider to set the degree of aggressiveness, suggestions for play, how much randomness gets introduced into choice of move, and a dozen others of less importance.

When I play against a computer, I like to cheat, so I'm glad to see that Art of Chess makes it convenient to take back a move, to diddle the clock or to rearrange the pieces a little bit. Of course, it won't accept an outright illegal move, but it will let you rush the computer or to trade sides in the middle of the play.

The disk contains, among other things, 30 famous games from the past. You can, for instance, replay the game in which Korchnoi beat Karpov in Bagvio City in 1979 and at any place in the game you can take over and show Karpov where he went wrong. Mouseclicks move the game forward or backward in a very convenient way, making it delightful to play and to ponder. You can also store your own games or chess problems to play and replay. This is one place where the screen representation is preferable to a real board with real pieces. It is so much quicker and pleasanter to snap on a configuration than laboriously to set up real pieces. One drawback is that Art of Chess does not recognize any disk other than its original one. Any games or configurations that you want to store for later rumination must be written to the main disk. Not only is its space limited, but its write-protection must, of course, be disabled to store the data, opening up the chance of a virus or something clobbering this irreplaceable disk.

One of the stored games is the one in which 13-year-old Bobby Fischer gave away his Queen in the middle of a game against International Master Donald Byrne, resulting in a win 42 half-moves later. Students of the game have been replaying those moves ever since. Art of Chess makes it very easy and pleasant to replay the game and try to see what Bobby saw. It seems impossible for any human mind to see that far ahead in the game, but Bobby's mind clearly must have. After Byrne took the Queen, his position slowly and steadily deteriorated. Using Art of Chess to move backward and forward through the game, trying to see something Byrne could have done, gives one the feeling of a bug caught in a spider-web, with every move leading to a little more entanglement.

How does Art of Chess compare with Chessmaster 2000? The extra features are, for the most part, identical in the two programs, but there are some differences. Master has more sophisticated, better-looking graphics, but Art gets around this by letting the user make his own chess pieces with DPaint if he objects to the crude images that come with Art. An important difference is that only Master allows you to backup your disk or to store games on an auxiliary disk. Art's best advantage is keeping a "time travel" gadget always on the screen, making it easy to browse back and forth through a game. Master has keyboard equivalents for a few of the most used menu options, whereas Art ignores this convenience. An interesting exclusive of Art is its slider to specify the degree of aggressiveness it shows in choosing its moves! Both programs use the mouse to move the chessmen, but Master has a slightly smoother, quicker response than Art. Master has a library of 100 classical games, against Art's 30.

Both programs come with a manual that outlines the bare moves and rules of chess and each contains an article on the history of computer chess, with Master's having somewhat more content and appealing to me more. Both manuals give a very shallow treatment of the game, but direct the reader to selected items in the huge literature on the subject.

Both programs seem so sophisticated and are so hard for an ordinary player to beat that it's easy to forget how low on the computer chess totem pole they really are. BLITZ, the world champ for a few years, runs on an immense four-processor Cray X-MP/48

(continued on next page)

The Art of Chess

(continued from previous page)

computer and is enormously bigger and stronger than either of these Amiga programs. Yet BLITZ gets beaten every once in a while and is only one of about 22 programs that compete in regular chess tournaments. If the programs competing in computer chess tournaments are likened to the Lakers, Pistons, or Celtics, then our Amiga programs are like schoolyard pickup teams. But that's all right. Schoolyard basketball is a lot of fun.

Art of Chess more or less matches Chessmaster in special features, but how does it compare in game play? Two A1000 Amigas with 512K of memory were set up side-by-side with the Chessmaster running in one and Art of Chess in the other. Each move was relayed to the other machine by my hand. Since each program was willing to play either color, they were played against each other for eight games, alternating which would go first. This tournament used only default settings, except for a few different choices of how much time was to be taken per move. Both programs had clocks, so time taken to transfer moves from one machine to the other was not counted.

During the opening stage of the games, the two stayed about equal. The moves on both sides were beautifully varied and gave a strong impression that smart human beings were doing the playing. In the midgame, Master often pulled slightly ahead, but not seriously. It played a subtle game that often trapped Art into losing a piece or into a weak position. In every endgame, however, things were no longer nip and tuck. Art simply collapsed. Its endgame moves were so dumb and erratic that it had no chance and none of the games were even close. This might be taken as a plus for the casual player who can be assured of beating Art if he can only last through the midgame. Otherwise, Art of Chess is not nearly so interesting an opponent as Chessmaster.

The time that Art of Chess uses to decide on a move is too long to be fun to play against. Tournament play permits long times between moves, of course, but the fun way to play against a computer is to take plenty of time to decide on a move and then to expect the machine to make its response immediately. At its quickest, Art took about three times as long to move as Chessmaster, and then it made a poorer move.

My criteria for computer chess are strength of game play and ease of use. Although Art of Chess offers many features, and exceptional ease of use, I will be loyally sticking with Chessmaster, at least until a stronger opponent comes along.

A Special menu allows adjustment of colors and layout

Art Of Chess $34.95

Anco Software, Inc.
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Burgettstown, PA 15021

(412) 947-3922

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Book Reviews:

Amiga Tricks & Tips
Amiga Machine Language

The latest offering from Abacus' library of Amiga know-how

by Walter Steuber

Remember the early days of the Amiga, when it was so hard to get any technical information on the machine? Dealers who had a set of manuals wouldn't let them out of the store. The few books that were rushed into print were gobbled up as fast as they appeared, despite inadequate coverage and incomprehensible language. About the only people who could really explore the innards of the machine and write programs to enhance its operation were a small band of geniuses who didn't have to read about computers but were able to hack around and seemed to know about them instinctively. The rest of us who wanted to get into the system had to wait a long time until detailed, clearly written descriptions became available. Happily, they are now appearing on the bookshelves in good numbers. There's almost TOO much to read, in fact, so the days of grabbing anything with the name Amiga on it are drawing to a close. One of the really important sources of technical information on the Amiga is the Abacus series. This is a continuing series of books written by Data Becker, a big software house over in Germany. A few years ago they won my admiration with "The Anatomy of the Commodore C64" and "The Anatomy of the 1541 Disk Drive". Now they are concentrating on the much bigger job of explaining the Amiga to non-geniuses who want to develop a decent fundamental understanding of this marvelous machine and its operating system. The project is so big that they have broken it down into a number of separate volumes. Each volume has a different set of authors and is as independent of the other volumes as it can be, considering how intertwined all the subjects are. They are paperbacks that won't lie flat or withstand much handling, but they are properly typeset and are supplemented with optional disks that contain their numerous program listings.

"Amiga Machine Language," (AML) by Stefan Dittrich, is Volume 4 in the Abacus series. It is a guide to learning 68000 Assembly language, addressed to readers who are conversant with AmigaBASIC programming but don't necessarily know any other programming language. The reader is expected to have (and know how to use) the AssemPro assembler package. Although you can get by with one of the more familiar assemblers, such as Metacomco or Manx, the examples and explanations are highly slanted towards AssemPro. The reader is also expected to have some external source for details of the 68000 instructions such as, for instance, "Programming the 68000", by Steve Williams, published by Sybex. It's too bad, in a way, that AML is not more comprehensive, but it is big enough without including these two auxiliaries. It already contains 250 pages of explanatory text and sample exercises.

AssemPro, for those unfamiliar with this trade name, is a Data Becker product, too. It is a combination of editor, assembler, and debugger that was described by Dave Haynie in the March issue of Amiga SENTRY. AssemPro helps a lot in understanding AML just as AML

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Books

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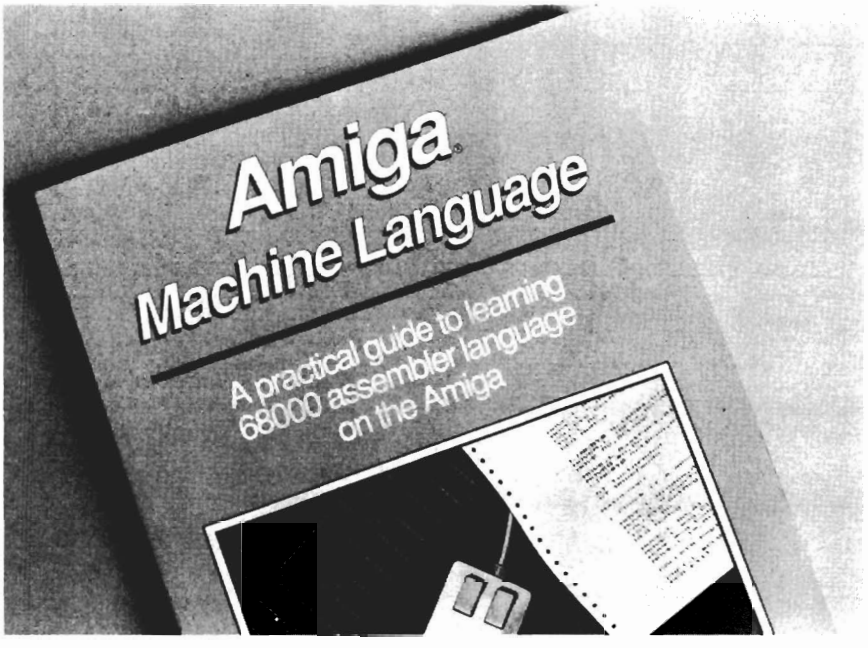


helps a lot in understanding AssemPro. The two are written as parts of the same package and consequently are best read as a package. If you want to learn assembly programming without AssemPro, you'd probably do better with Compute's "Amiga Machine Language Programmers Guide." Isn't it nice to have a choice of competitive textbooks covering the same subject in slightly different ways?

AML spends its first 60 pages on machine hardware, 68000 CPU architecture and operation of an assembler. The amount of explanation of these subjects will be just right for some readers, but it will be too skimpy for others and will have to be augmented by additional preparatory reading. The remainder of the book consists of many illustrative programs along with well-written text explaining them. The reader is asked to type in each program, assemble it, and then step through its execution with the aid of the debugger in AssemPro. This naturally takes a lot of time and concentration, but it surely is the best way to develop a feeling for what is going on.

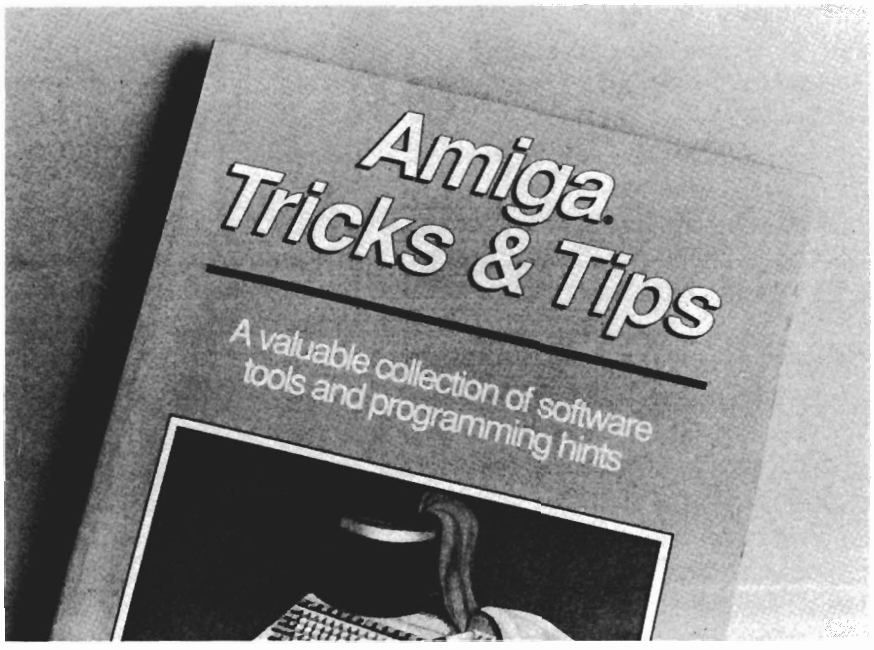
The very first sample program is ten lines of code that sets up a table of data values, adds them up and stores the sum in register D0. Each assembly instruction is particularly simple in this first example, so stepping through the code with the debugger gives an undistracted picture of how values are stored in memory, moved around and added in a register. The next program is the same as the first, except that it introduces a better, but more complicated, way of addressing the memory. Many, many, more programs follow, each gently adding a new instruction or programming principle. The tutorials move ever upward to cover text input and output, checking for special keys, opening devices, using libraries, menu programming, speech and other sound, gadgets, windows, requesters, disk operation, events and interrupts. The explanatory text is well prepared and clearly written, even though it is a translation with a few small Germanisms remaining. There are no light touches or jokes in the text, but just steady digging deeper and deeper. Even so, "Amiga Machine Language" is only an introduction to the subject. There are many aspects of the Amiga and its operating system that are not mentioned at all. We all know that learning assembly language is a big job, made much harder by multi-tasking and other special Amiga features, but the Abacus people make the process as painless as possible.

* * * * * * * * * * * * * * * *

"Amiga Tricks & Tips", by Bleek, Maelger and Weltner, is Volume 5 in the Abacus series. It is a collection of software tools and operating procedures addressed to people who already have done some programming in AmigaBASIC and are ready to get into things like using the CLI and the system libraries. It picks up BASIC programming where Volume 2 leaves off. (Volume 2, "AmigaBASIC--Inside and Out", was reviewed in the April '88 issue of Amiga SENTRY). There are 342 pages of sample programs and discussion of miscellaneous topics that explore the special character of the Amiga. The

first 34 pages of "Amiga Tricks & Tips" (AT&T) are devoted to explaining the CLI and showing how it can be used to make the machine do things that you might never have thought of. After going over the simple elements of the CLI and its use in the startup sequence, AT&T lists nine examples of specialized startup sequences. They do things like open a special window, establish a printer spooler, set up resident commands or sort, amend and search a mailing list. Of course, these are only illustrations, but they clearly show how to tell your machine what you want it to do when you turn it on. Anyone who does not personalize his startup sequence is missing much of fun and the power of his machine.

The main part of AT&T is devoted to writing AmigaBASIC programs that interact with deep levels of the Amiga system. The very first example, for instance, does something you don't ordinarily do in BASIC. It calls in a Kernel routine from graphics.library to set the drawing mode, SetDrMd(RastPort, Mode), and then it uses it to emphasize a text display. This tricky procedure of writing in BASIC but using built-in Kernel functions is carefully explained in the text that accompanies this program. The use of many other functions from the graphics library as well as the use of four other libraries (exec, intuition, dos and diskfont) is illustrated with a profusion of examples. The hundreds of functions available in these libraries are listed by name but only a couple dozen are described in useful detail. In order to be able to use them all, one must go to some other reference such as Mortimore's "Amiga Programmer's Handbook."



Some of the names of AmigaBASIC tutorial programs that use system library functions are Changing Typestyles, Fast IFF Transfer, IFF Brushes as Objects, Borderless Windows, Monocolor Workbench, HAM Halfbrite, Fade-In, Vector Graphics, 3d-Graphics, Fast Print, Multitasking Input, Sliders, Scrolling Tables, Rubberbanding, Dual BitMap, SetComment, CheckFile, Protect Files, Get Directory, GetTree, Bmap Decoder, CLI from Basic, and a few others. Complete listings and good explanations come with each of these programs. Some of them are well over a hundred lines long and, of course, they have to be studied line-by-line to really understand them.

A 57-page chapter on internals of the AmigaBASIC language itself explores its file structure, tokens, numbering system and general organization. This is illustrated by eight more long programs that go in and modify or manipulate the language itself! Examining and running these programs gives one a much deeper appreciation of what is going on when a line of BASIC gets interpreted. There is so much typing required to enter these programs that you might want to forego the learning experience of typing and instead to buy the disk that has them all, guaranteed ready to run. As you might expect, these programs show some principles that are unknown or, at least, unappreciated in the writing of most BASIC programs. AT&T treats several other arcane

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Books

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parts of Amiga programming in considerable detail. These miscellaneous topics are too numerous to do more than mention the outstanding ones:

a) Icon discussion, with a table of icon types and their structure. The mystery of icons is pretty much cleared up and good directions are given for making your own with the assistance of a large AmigaBASIC program.
b) Error trapping. This essential, but often neglected, part of programming is discussed with several illustrative programs.
c) Specialized benchmarks for measuring program speed and efficiency are described and illustrated.
d) A section on reorganizing system libraries to reduce memory usage by making them contain only what is needed.
e) Loading and running machine language subroutines from AmigaBASIC.
f) Direct disk access, using AmigaBASIC to call the trackdisk.device commands.
g) Memory handling. Allocating memory the way you would in a C program, but doing it in AmigaBASIC.

You will have to be really serious about programming to make the effort needed to digest either of these two Abacus books. If you are, though, they offer a valuable opportunity to profit from the experience of a group of professional programmers who know what they are doing and are reasonably good at explaining it. The authors naturally concentrate on subjects that particularly interest them, so not everything gets fully covered, but there is enough good material here to keep anyone interested and occupied for a long, long time.

Amiga Tips & Tricks
Amiga Machine Language
$19.95 each
Abacus
5370 52nd St SE
Grand Rapids, MI 49508

(616) 698-0330

Shakespeare

(continued from page 49)

Needless to say, I was speechless when I got my first output. Clear, sharp, graphics and fonts that had no disturbing jaggies (This was not the case when I used other screen resolutions of 320X200 or 320X400).

Despite my pleasure with the printed results, this was a relatively difficult desktop publishing program to master. The manual is extremely well written and provides excellent tutorials, but the interaction of screen and printer resolution required more than 20 hours of trial and error to arrive at an optimal setting. Further improvements in the area of memory management are still needed. The advantage of storing full color palettes is lost with a visit of the guru. At one point, I found the system crashing often after creating a single page with several graphics. This, of course, could have even greater implications on multipage documents. And, as always, further speedup in printout would be appreciated.

If you are involved in advertising layout, or other commercial art which depends on colored text and lots of color images, Shakespeare is aimed at your needs. Otherwise, I think the market for color desktop publishing is limited until there are higher resolution color printers on the market at affordable prices. The HP_Paintjet and the Xerox 4020 are the best "consumer" priced color systems available, and they cost $1300 and up! For black and white desktop publishing using a dot matrix printer, Shakespeare can be a challenge, but mastering it will reward you with high quality printing.

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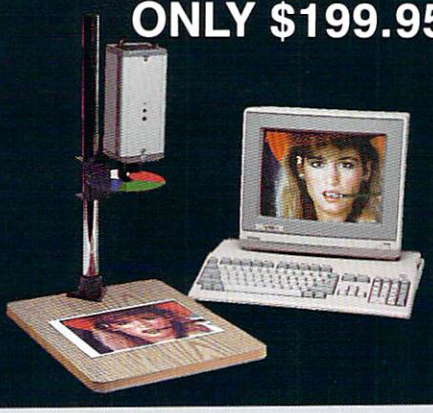

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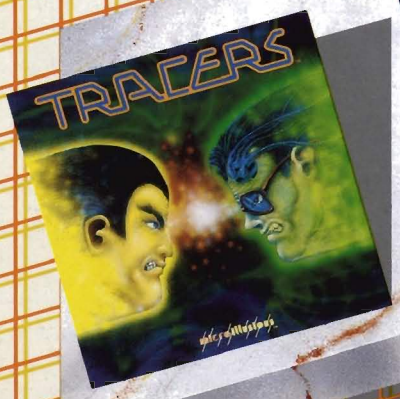
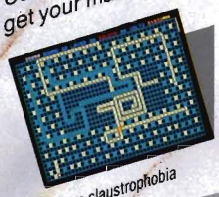


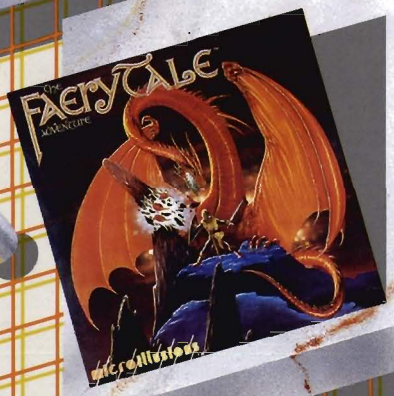
Excitement and danger await your induction to tracer duty! As a tracer, you must rid the computer networks of slimy, criminal data thieves. They are tricky and the action gets tough, so watch out! Utilizing all your skills, you'll either get your man or you'll get burned!



Beware claustrophobia

Don't get burned

FaeryTale



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