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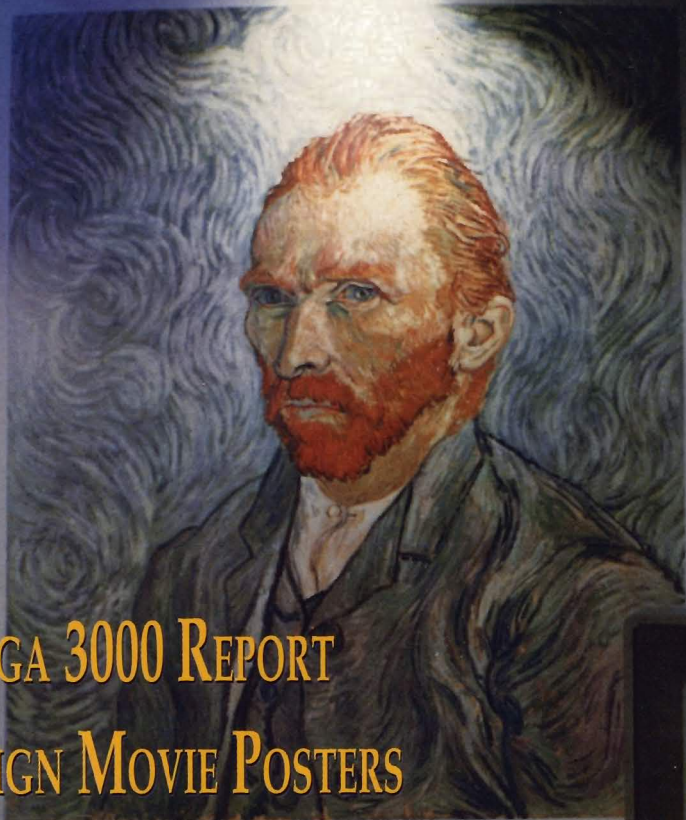
AMIGA THE ELECTRONIC CANVAS

AMIGA 3000 REPORT

DESIGN MOVIE POSTERS

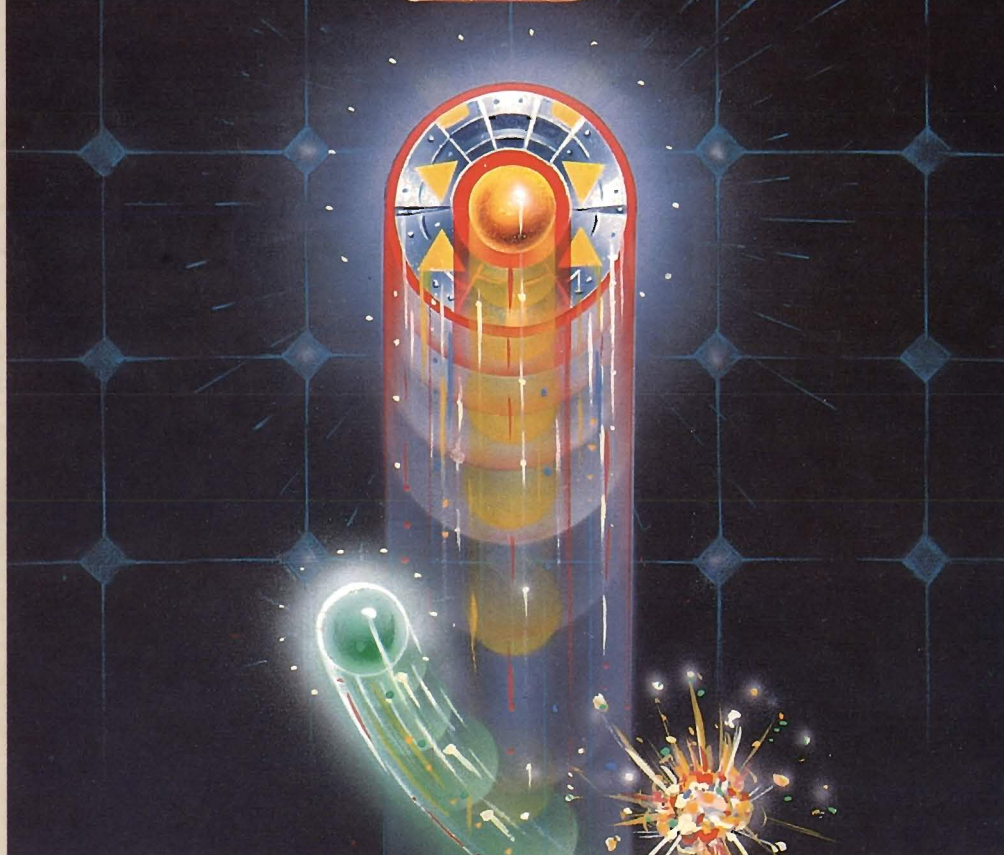
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Managing-Editor Eyo Sama

Marketing Director Lisa Sama

Art Director Olusegun Olaniyan

Data Manager Ernest N. Nagy

Assistant Editor Michael Hermann

Music Editor Serge Boucher

Circulation Coordinator Ansa Sama

Circulation Manager Alex Ribeiro

Photography Robert St.Marseille

Contributing Authors Serge Boucher
Michel Giroux
Michael Hermann
Gerald Hull
Christopher Kohler
Harv Laser
Louis Markoya
Ernest N. Nagy
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Nick Poliwko
Alex Ribeiro
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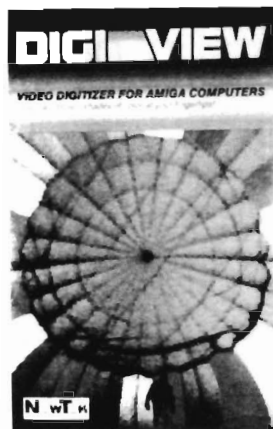
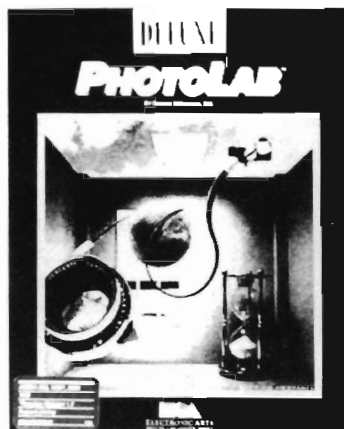
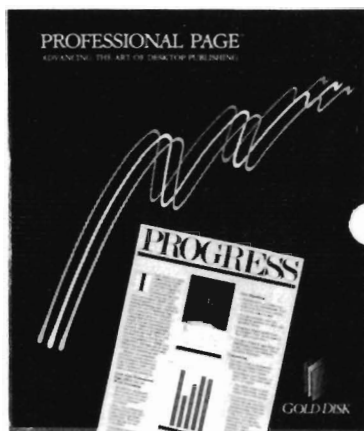
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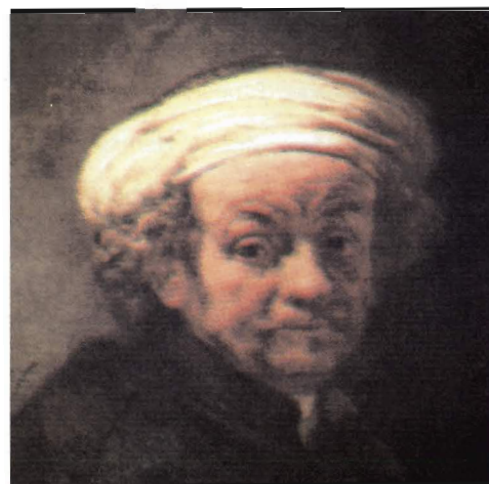
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AmigoTimes issue 1.3 was created entirely on Commodore Amiga computers with the aid of the following tools:



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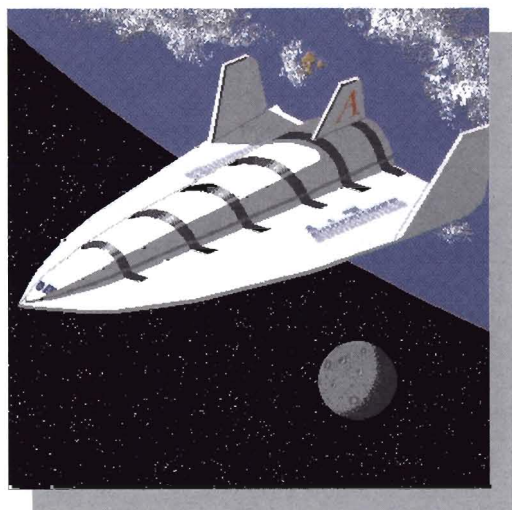
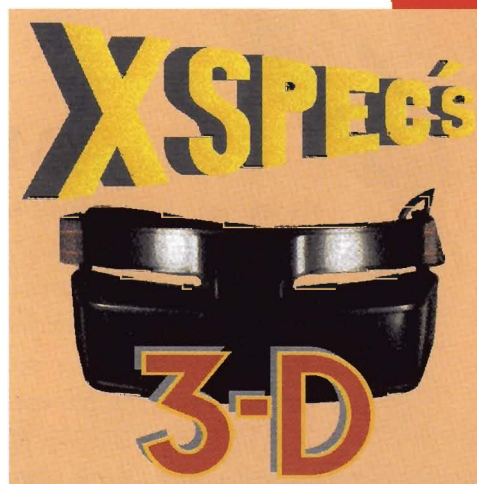
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For the latest Amiga tricks and tips see page 10.



The Editor's Corner

AMIGA...The Electronic Canvas

As you may have noticed from the cover, the theme of this month's issue is "Graphic Arts on the Amiga". The Amiga has slowly, but surely, built itself a name in the world of the Graphic Artist as being the most versatile, user-friendly, and cost-effective personal Electronic Canvas available. We have included several feature articles on the subject, ranging from what products are available, to a story on the design of a Eurythmics movie poster. While the Amiga has not been able to successfully penetrate the business market, it has made quite an impact in the graphic art and video production world. It is not that the Amiga is incapable of being used as a business machine, it just hasn't had much business software developed for it. Anyway, I personally think the Amiga's power and capabilities would be wasted if it was just used to print invoices. At AmigoTimes we do use the Amiga for business, but that is only one of the functions our machines have to perform.

As far as graphic arts on the Amiga is concerned, there really is an abundance of software and hardware that can be used. There are several powerful HAM paint programs which make it easy to edit digitized images or to draw pictures using a palette of 4096 colors. With the introduction of Deluxe PhotoLab, from EA, we have finally broken the CHIP RAM barrier (even though the PhotoLab:Paint interface is a CHIP memory hog, we are able to draw HAM images with resolutions greater than 1000x1000). To manipulate BitMapped images there are products such as PixMate, Butcher, and PhotoLab:Colors, which can change attributes such as the number of colors or the resolution of your pictures. If you do not like using the mouse for drawing you can use the Easyl drawing tablet (from Anakin Research) which allows you to use a pen or pencil on a pressure sensitive pad. To intermix artwork with live images it is best to use the Digi-View digitizer, the FrameGrabber, or now the ASDG/SHARP color scanner combination. The serious artist will usually use several different products depending on their different strengths and features. We will regularly feature Amiga artwork in our "Amiga Art Gallery", which was replaced this month by the image contest results. I was really impressed by the quality of the images sent in for the contest, it was hard to pick winners and even harder not to print several more entries.

I have a hot tip for all hard disk owners; just before we completed this issue, my hard-drive suffered a read/write error from which it did not recover. On re-booting I was faced by a requester telling me that unit 1 was not a dos disk. PANIC TIME!!! I do make regular back-ups, but I had not done so for three days, and around here three days (at 12 hours a day) is a lot of work to lose. Anyway, I used DiskDoctor to salvage my files and then proceeded to back-up the files with a commercial program whose name I shall not mention here. After six tries I finally gave up, it takes about 50 disks to back-up a 40MB hard-drive, this program crashed after 20 to 30 disks. At 6 am I searched through my rack of software and finally found a slick CD case containing a hard disk back-up program called "LV Backup" written by Michael Sinz. Desperate to save my drive, I gave the program a try; it worked first time and backed-up, and restored, my hard drive. Thanks Michael, your program saved the day.

The theme of next month's issue is "Entertainment Software", just in time for Christmas shopping; games seem to sell best around this time of the year. On the AmigoTimes disk v1.4 (i.e. in the next issue) you can look forward to a stunning demo of a as yet un-released game which has kept me up for several nights, and it looks like it will be another night as soon as I finish this sentence....

Eyo Sama
Managing Editor

AMIGOTIMES LETTERS

Dear Mr. Sama:

Many thanks for sending us a copy of the AmigoTimes and we wish to offer our congratulations on a fine issue.

We appreciate having your support of the Amiga and wish you every success with your magazine.

Yours truly,
COMMODORE INTERNATIONAL LIMITED,
Chairman of the board.
Irving Gould.

AT: *That compliment is greatly appreciated. Our drive is to show everyone that the Amiga is a very powerful Desktop Publishing machine.*

AMIGOTIMES LETTERS

We were very happy to see (amigo-times letters issue #2) that the interest is growing for the use of the amiga in research. Being involved in experimental

research ourselves, we'd like to encourage this trend. So if anyone would like to share new ideas for the scientific application of the Amiga then please, feel free to write us:

Julien Tremblay (or Jean-Pierre Moreau)
Département de Physique
Pavillon Vachon
Université Laval, Ste-Foy
Quebec, G1K 7P4, CANADA

Also we'd like to congratulate you for review, it's very fun to read it.

Julien Tremblay, Ste-Foy.

Dear AmigoTimes,

I would first like to commend you on a job well done. Your premiere issue was a real looker. It is nice to see a well planned magazine come out for the Amiga.

I am writing as an inquiry more than anything else. You see, for the last few months i have been working (on&off)

on a bunch of subroutines for Amiga basic that allow you to use the kernels power. I was wondering if this, as well as an accompanying article would be of interest to your magazine.

Robert Salesas, Montreal.

AT: *We are always interested in article submissions, an authors guideline is available from the address below.* □

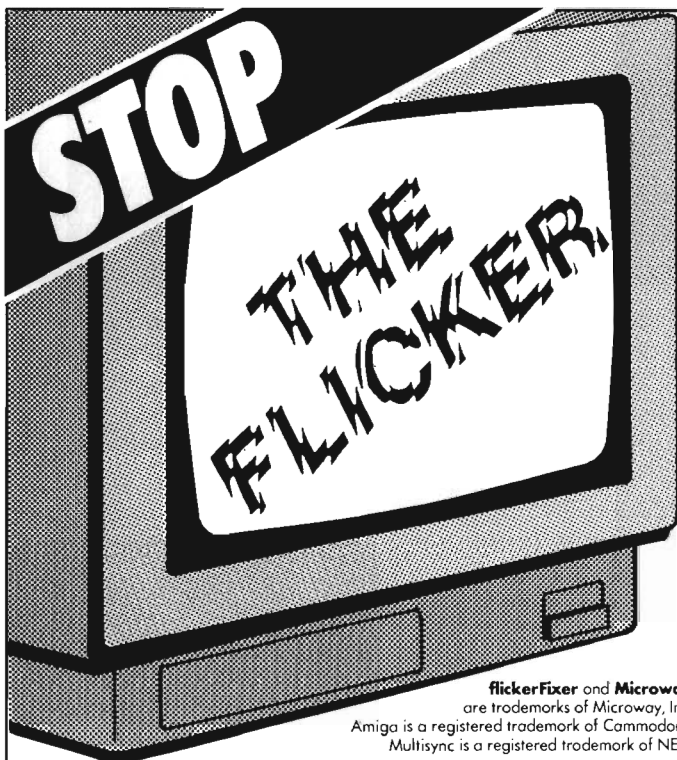
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Rembrandt's Transformations

A New Amiga Art-Form.....

The Amiga has served as the platform for many new roles in the world of "home" computers. Many of them connected with its great ability in the graphics area. In this article and with its accompanying pictures I will introduce an exciting new artform made possible by the abilities of this system and products available for it.

It is standard practice to digitize and then "touch up" pictures on a computer graphics system. The Amiga is ideal for doing such work with inexpensive tools available like Digi-View and Digi-Paint, both from NewTek. Any picture can be digitized, colorized, changed, distorted and completely made over. What has been largely ignored in this practice is that every picture has inherent properties. The underlying geometry of the picture, the palette, and of course the subject matter all play important roles in the picture.

These can be exaggerated by several means to form a different look at the subject. Through my art studies and more recently through life itself, I have been taught to "look" at pictures, and things, in a number of different ways, some of which consider the above picture qualities. By doing this one gains a better understanding of the artist's, or object's meaning, intention or simply, a better understanding of what that object might mean to you and what you might associate with it. The associations can



This is the original 1661 self-portrait of Rembrandt as the Apostle Paul. It has been digitized with Digi-View, the NewTek video digitizer.

make the object more endeared to you, or be entirely surrealistic, as in this case.

For a long time I have been intrigued by the 1661 self-portrait of Rembrandt as the Apostle Paul. The darkness of the picture, the geometry and the subject's face were all things I have wondered about. As seen in the original digitized work, the general morphology of Rembrandt's face seems to have been exaggerated, which upon viewing allowed me to "see" different

objects in and made by these features.

I used Digi-View 3.0 to digitize the portrait from an art book. To get the proper image, a correction was made to the aspect ratio through the software (the horizontal to vertical ratio), as the face constantly came out fatter (wide in x) than the actual picture. Once captured, the image was color corrected a bit again by using the Digi-View software.

With the image stored, I was then able to start the changes with Digi-

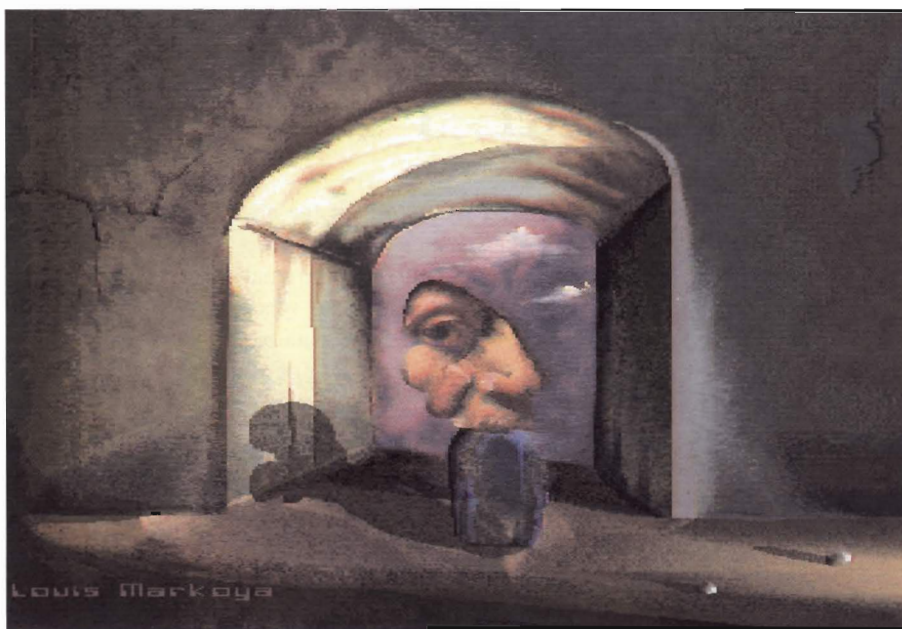
By Louis Markoya

Paint. I started with Rembrandt's hat which I decided to transform into a skull. Using the Tint and Shade options in Digi-Paint, I filled the areas of the eyes and nostrils, and then added the skull's teeth. Making it all look as if it belongs is the easy part using the Amiga. Digi-Paint and other HAM paint programs allow for you to choose the color you would like from the screen, allowing for perfect matches to the existing picture.

From there, I noticed the line the left shoulder makes forms the perfect perspective of a wall receding behind the head. Again with the shade option I simply chose a dark colour and outlined the wall. Next to come was the outlining of the face to make it a huge "picture within the picture." This was done with the square/rectangle tool and then shaded towards the walls and floor. The nose was outlined to approximate the hat and the moustache was outlined to form the artist's arm. Shadows were cast using the shade tool and the picture completed. I named the picture "Rembrandt painting his own Macrocosmic Portrait under the Specter of Death."

The second picture, named "Madonna and Child in front of an arch which forms the perceptible, but Invisible Portrait of Rembrandt," was painted with similar techniques. The colour of the hat was chosen and the sides of the archway were drawn in solid. The texture and shading was added with the Shade option and different dithering. The eye of the portrait always looked like a cloaked woman's head looking down to me so with little enhancements I made it more obvious. The nose and moustache now were shaded to form the arms of the madonna, and the bump in Rembrandt's cheek, the head of the child. The drapery was painted in from the lips to form the skirt and light was added to the right of the picture to give the Madonna some ground to stand on. Depth was added to the picture by drawing in the rocks and extended shadows and then with tint, drawing in the shadow for the Madonna herself. The walls were touched up to give the impression of plaster with the shading tool and cracks added for extra realism.

These two pictures are examples of



"Madonna and Child in front of an arch which forms the perceptible, but Invisible Portrait of Rembrandt"

what can be done with the Amiga and a little imagination. Look at pictures and experiment, have fun and learn. The tools are available to Amiga artists to make outstanding pictures; using them properly will allow for greater knowledge and growth of our machine, which in turn stimulates development of new and more powerful software. I for one can hardly wait.

About the Author

Louis Markoya lives in Shelton, Connecticut and has owned an Amiga system since September '85. He uses an Amiga 2000 with 3 megs of RAM, 20 MB hard drive and a Ronin Research Hurricane Accelerator card. You can contact him via the PLINK BBS as L.Markoya and CompuServe at 75766,504. ☐



"Rembrandt painting his own Macrocosmic Portrait under the Specter of Death"

NATIONAL TYPE FOUNDRY FONTS

Are you constantly searching for new fonts? Well, if the answer is yes, then search no further because new typefaces are now available from The National Type Foundry. National Type Foundry Amiga Fonts are a collection of popular typefaces, many of which are found in the current Letraset catalog. The back cover of each package gives a complete listing of all the fonts as well as point sizes that are available on the enclosed disk. The disk also contains a couple of handy font-related programs and documentation for them.

The manual that accompanies each fonts disk is set up in a rather unconventional manner. This is not a step by step, follow the instructions manual, rather it is set up in a way that is quite appropriate for this product; instructions on the use of the disk are presented in a question and answer format that effectively puts the new Amiga user at ease, and educates some veterans. The most popular questions that might be asked concerning the disk are presented to the user followed by a very detailed and extremely informative response.

National Type Foundry fonts can be used with any program that accepts regular Amiga bit-mapped fonts. Some of the more popular programs that might implement fonts are Deluxe Paint II, Aegis Images, or virtually all bit-mapped paint programs. Word processors such as Prowrite, VizaWrite, Excellence, or Shakespeare. Pagesetter, Publisher 1000, City Desk and other page integration packages. These fonts can be used in a myriad number of applications.

It is clear that the creators of the font disks looked into most of the application programs for their fonts; one major problem that is often encountered with Deluxe Paint II was anticipated, if you try to load too many fonts into Deluxe Paint at one time, it will do many strange things including crashing your system. A solution to this problem is made available to the user; instead of loading all 42 odd fonts at once, several directories with fewer fonts in each of them were created, thereby avoiding the problem.

This collection of fonts can be quite useful to people that work extensively with any or all of the formentioned programs.

National Type Foundry Amiga Fonts:

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Disk #3 Sans-Serifs
National Type Foundry
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USA

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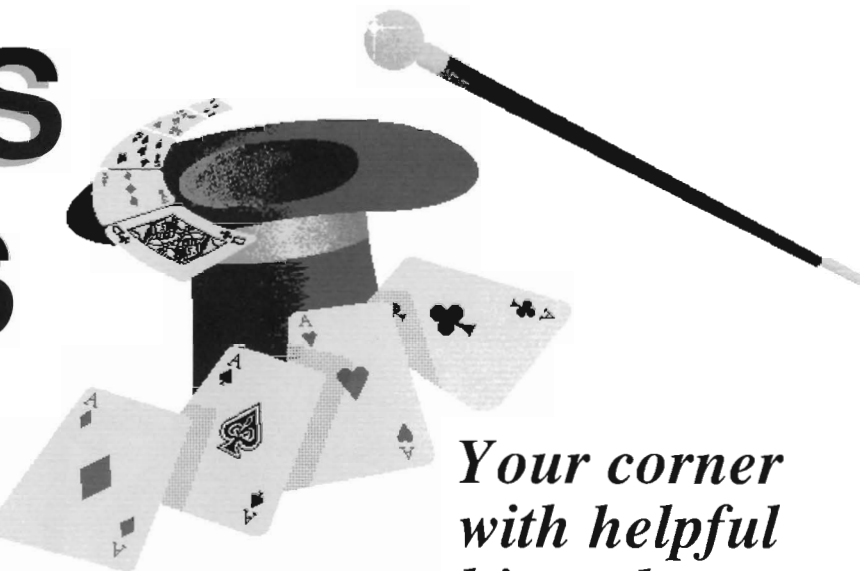
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TRICKS n' TIPS



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FULL-PAGE Displays

Are you tired of waiting for Professional Page to refresh its screen when you want to see a different section of your page. Usually you use the 100% magnification to edit pages on Professional Page, the problem is, at this magnification you only see half of your page, if you need to see the other half you have to use the scrolling gadget. Depending on what is on the page it can take an annoyingly long time to refresh the screen.

You could change the magnification to 50% and thereby see the whole page, but most of the detail on your page will not be seen clearly at this magnification (only very large text can be read) and again you have to wait for it to refresh the screen. There is a simple way around this problem. There is an excellent public domain program called

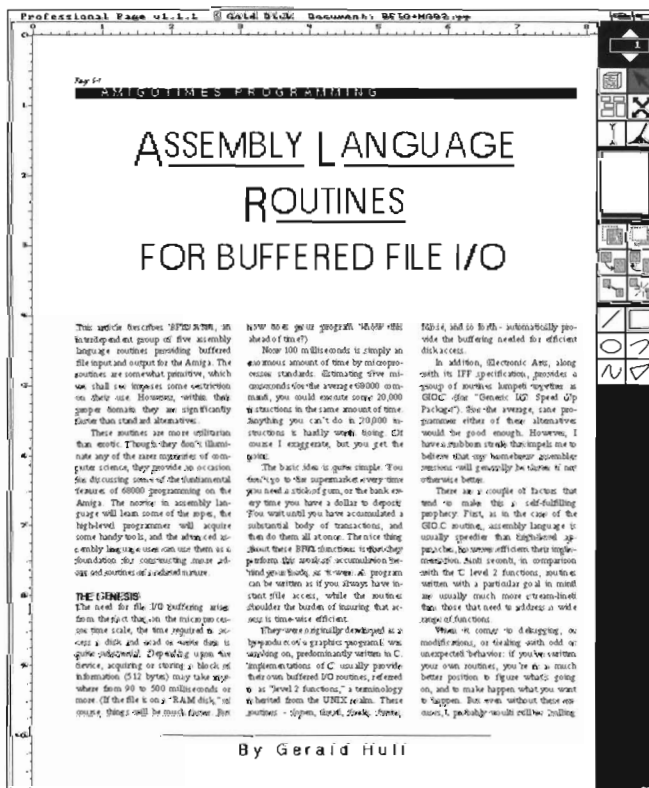
VScreen (written by Davide P. Cervone, and available on the AmigoTimes V1.2 disk) which allows you to use screens which are larger than the physical display area of your monitor. You can set the page size of your Workbench screen (or that of any other screen) to a maximum of 1000x1000, when you move the mouse to the edge of the display the screen scrolls quickly and smoothly to show the hidden parts of your screen.

To solve the problems I mentioned above, I set the size of my Workbench screen to 704x840 using VScreen. All you need to do is type VSCREEN 704 840 in the CLI window. Next I set Profession-

al Page so that it opens up unto the Workbench screen as opposed to creating its own custom screen (this is done by setting the Tool Types in the info file to SCREEN=WORKBENCH). When Professional Page is run it will open to the full 704x840 page size, therefore at the 100% magnification you will be able to view an entire 8.5"x11.0" page without having to wait for it to refresh or by having to change to a different magnification. To view the whole page you just move the mouse to the edges of the display. Until Commodore releases a full-page display monitor this remains the best solution for me, I hope it can be of use to you.

More GRAYS for DTP

Professional Page has 8 pre-set gray tones, often these may not be enough for some page layouts. As you may know, via the define color menu selection you can bring up a requester which allows you to define colors in either RGB or cyan magenta and yellow values. When producing color separations Professional Page uses the black film to represent various gray tones and black of course, so when I tried to create other



By Gerald Hull

This shows Professional Page running at a resolution of 704x840 with the aid of Davide P. Cervone's public domain utility program called VScreen. In my opinion VScreen is a piece of "Programming Art".

grays by selecting equal amounts of Red Green and Blue and noticed that it produced a color which used equal amounts of the cyan magenta and yellow film. I wanted the grays to be created on the Black film only just like the in-built grays so this prompted me to call the Gold Disk tech support line. Happily for me they told me that the color separator automatically creates the gray on the black film when it senses equal amounts of Cyan Magenta and Yellow. This was great news so I defined about 20 different gray tones and saved them as a library of colors which I can load into any document and use when I require. I tried a separation and everything was as Gold Disk had promised, so don't be hesitant to create extra grays if you need them. The only problem you will encounter is some of the grays will look the same, this is because the Amiga can not, unfortunately, display more than 16 shades of gray, no matter what screen mode you are in.

Using DATAPAC Properly

Before you read any further you should

know that DataPac is available only in Canada. If you are a Canadian resident, if at all possible, don't use DataPac. Their rates are higher than either Telenet or Tymnet and DataPac has a problem with X-Modem transfers. The exception to this rule are those modem users who are using Plink (American People Link). If you happen to fall into this category have no fear. The following instructions will allow you to use the X-modem protocol with absolutely no problems, just as easily as before.

INSTRUCTIONS

Instruct your modem to dial your local DataPac number; they vary according to the baud rate you prefer using, check your local white pages. Once you are connected, identify the speed you will be using by typing the specified number of periods followed by a <return> (carriage return).

300 baud type a single period (.) and press <return>

1200 baud type two periods (..) and press <return>

2400 baud type three periods (...) and press <return>

Once you have done this a DataPac network message will appear. At this point just type in the following three lines; I would suggest adding these three lines to your keyboard macros, if you have such a utility, as you will be typing blind.

^PProf 3<return>

^P signifies the control key and P key depressed simultaneously.

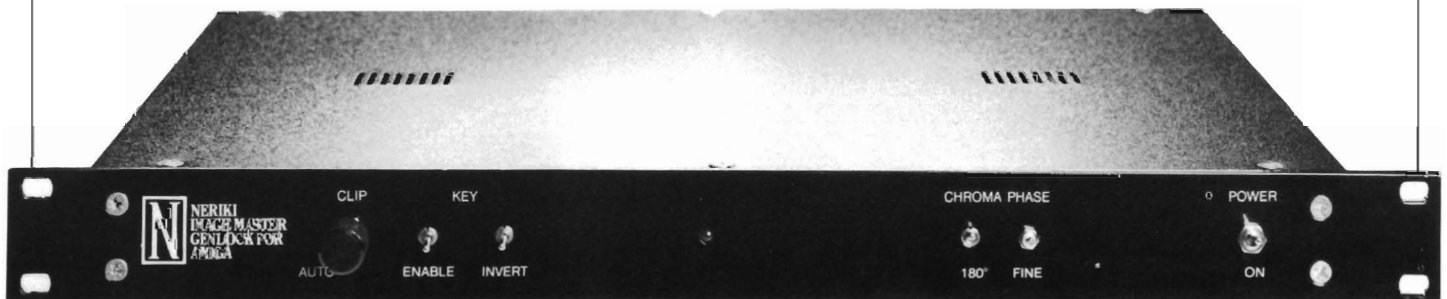
SET 1:0,2:1,4:0<return>

P 1 311031200063<return>

This last command will then connect you to Plink through a Datapac/Telenet connection.

Setting the above DataPac pad parameters allows you to follow Plink procedures exactly as they suggest, without any other deviation. Thanks to Steve Tibbet and Ed Bercovitz for helping us find this out. □

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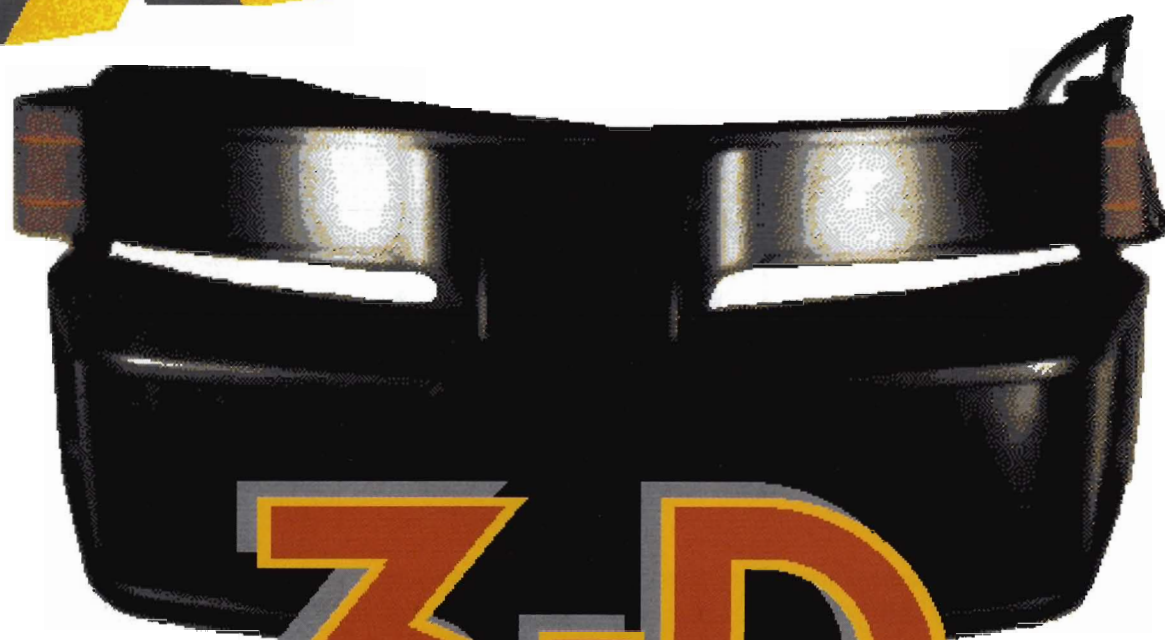
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XSPÉES



3-D

By Michael Hermann

These futuristic-looking glasses have thrust the Amiga computer into the exciting world of 3-D graphics, with applications ranging from simulators to scientific research.

SIMULATED 3-D DISPLAY

The original method of viewing simulated 3-D images involved the use of red and blue filters in glasses. A red image and a blue image were simultaneously projected onto a screen and the red-lens of the glasses filtered out the red image, while the blue-lens filtered out the blue image. The result was a fairly convincing, but monochrome 3-D image. Throughout the years, this format has been used in movies, magazines, posters, etc. However, these images lacked color, a factor which, understandably, limited its popularity.

The red/blue filter method was later followed by polarized lenses which could separate two full-color images. Each filter allows only the light waves that are oriented in the direction of each corresponding lens to pass through "slots" on the lens at a given angle. But this method can cause eyestrain because unwanted light occasionally passes through the wrong lens, which creates unwanted ghost images. A better method, using LCD shutters, has since been devised and is currently being implemented for the X-Specs 3D glasses.

A 3-D picture actually consists of two separate images: what the left eye sees and what the right eye sees. The video output on the Amiga is updated every sixtieth of a second. In order to display a 3-D image, the left image is displayed, and one sixtieth of a second later, the right image, for a maximum of 30 "frames" per second. On every odd sixtieth, the left-eye image is displayed on the screen and the left shutter of the glasses clears while the right shutter darkens. The left eye views an angle of the image that the right eye does not. On every even sixtieth, the right-eye image is displayed on the screen and the

right shutter of the glasses opens while the left shutter darkens. The brain simultaneously combines these left and right images into one 3-D image, giving the illusion of depth.

BUT THEY LOOK STRANGE...

Inside the X-Specs 3D package you will find the X-Specs 3D disk (which includes many example pictures and demo animations), the X-Specs 3D glasses, and the interface that plugs into Joystick port 2. The interface is a small box with two sockets for X-Specs 3D glasses. The second socket enables another pair of X-Specs 3D glasses to use the same computer to view images.

If you wear prescription glasses you should have no problem using the X-Specs glasses because the visor is suspended about an inch away from the face. The X-Specs glasses do not rest on the bridge of the nose but are held on the head by a headband. The design was obviously well-thought out because a rubber strip presses against the forehead making it quite comfortable to wear.

KILLER JUNK FOOD

Space Spuds is an arcade-style game included on the X-Specs disk. In the game, the player pilots a spaceship traveling through space trying to avoid debris left from the accident of an intergalactic junk-food freighter. The object of the game is to use the ship's weapons to destroy as many chunks of fat as possible. Each time the ship collides with the fat, calories and weight are added to the player until he/she eventually explodes.

The game is a good example of how this 3-D effect can be applied to entertainment software. Laser beams look as though they are going off into the hori-

zon, objects heading towards you make you want to move out of the way, etc. The added excitement of the 3-D effect will make you wish all games could be like this.

APPLICATIONS

Among other possible applications, many Amiga users have expressed interest in a 3-D flight simulator program for the Amiga. A major fault with present microcomputer flight simulators is a lack of depth-perception. Theoretically, a 3-D interface, such as X-Specs 3D, could provide images with that third dimension, and greatly enhance the realism of computer-simulated flight. I have seen what can be done with a 3-D race car arcade game that uses the same technology as the X-Specs glasses and I expect that similar games, including a flight simulator, for the Amiga will be forthcoming and quite outstanding to see.

There are countless other fields that the X-Specs 3-D magic can be applied. For example, an architect can design a building with the computer in 3-D and once the left and right offset images have been generated, these pictures could be used to display the finished building in three dimensions to their clients for final approval.

The educational field could especially benefit from the X-Specs glasses. More and more, science professors in higher institutes of learning are using the X-Specs 3D glasses, in tandem with Amiga computers, as an illustrative means of educating their students about subjects such as anatomy, stereochemistry, the demonstration of chemical reactions, biochemistry, and engineering.

Molecule3D is a program, included on the X-Specs 3D disk, that displays

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some example animations of various molecules. Both the chemistry department of the University of Cincinnati in Ohio and Scripps Labs in California are employing Amigas and X-Specs glasses for molecular modeling.

DRAWBACKS

As has always been the case with 3-D glasses in the past, there is a significant problem of eyestrain. Looking at a high-speed alternating screen for extended periods of time may prove difficult for some. Some people may have no problems using the glasses for extended periods of time, however, others may not adjust as quickly to this method of perception. In order to help prevent eyestrain, proper ambient lighting is essential.

FLICKER FIXER

X-Specs will not work with the Flicker Flixer board or long persistence monitors. The Amiga can only display a maximum of 60 images every second so a maximum of 30 frames (one left image and one right image) can be displayed with the X-Specs. In order to display a vertical resolution of 400 lines, the Amiga directs the monitor's raster beam to scan down the screen and draw the odd lines, return to the top and then draw the even lines. When the even lines are being displayed, the odd lines are already fading, causing the interlace flicker. The Flicker Fixer (see review last issue) is a plug-in board that eliminates this problem by buffering the odd lines and displaying them one sixtieth of a second later (simultaneously) with the even lines. Unfortunately, it also makes viewing 3-D images with X-Specs 3D impossible because there are no alternating images every sixtieth of a second.

YOUR OWN PICTURES

There is a program included on the disk called "D3D" which will display 3-D images that you have created. D3D will alternate the left and the right images while the viewer uses the X-Specs 3D glasses to view the stereoscopic picture.

There are a number of ways to create your own stereoscopic images; one way is you could digitize a real-life ob-

ject and move the camera left or right two or three inches for the second image. The process is fairly simple, however, actually capturing both images properly requires a little trial and error. Another method is to create one with a 3-D object editor program and generate both a left and right view of the object. To begin with, you would generate the left view of the object, save that picture and shift your location a little to the right and repeat the process. Once both pictures have been saved (with the suffix ".L" added to the filename of the left image and ".R" added to the right image), you would use D3D to display both images. Wearing your X-Specs 3D glasses, you would then see your image in living 3D!

CONCLUSION

The technology used by X-Specs 3D is also being used in the video game industry. Nintendo uses LCD glasses with some of its cartridge video games, and Taito has an arcade Grand Prix racing game that uses 3-D glasses similar to the X-Specs 3D glasses. It would appear this method of 3-D display is becoming widely accepted throughout the industry.

It would be wonderful to see more software developers incorporate LCD shutter technology in their programs. This 3-D technology could be used in areas such as education, research, mechanical engineering, architecture, and the creative arts. Without a doubt, X-Specs 3-D will (dare I say it) add a new dimension to your pictures and animations. If your sole interest is curiosity, you might find that spending over \$120 (US) is a little steep, after seeing X-Specs 3D however, it just might be worth it. □

X-Specs 3D

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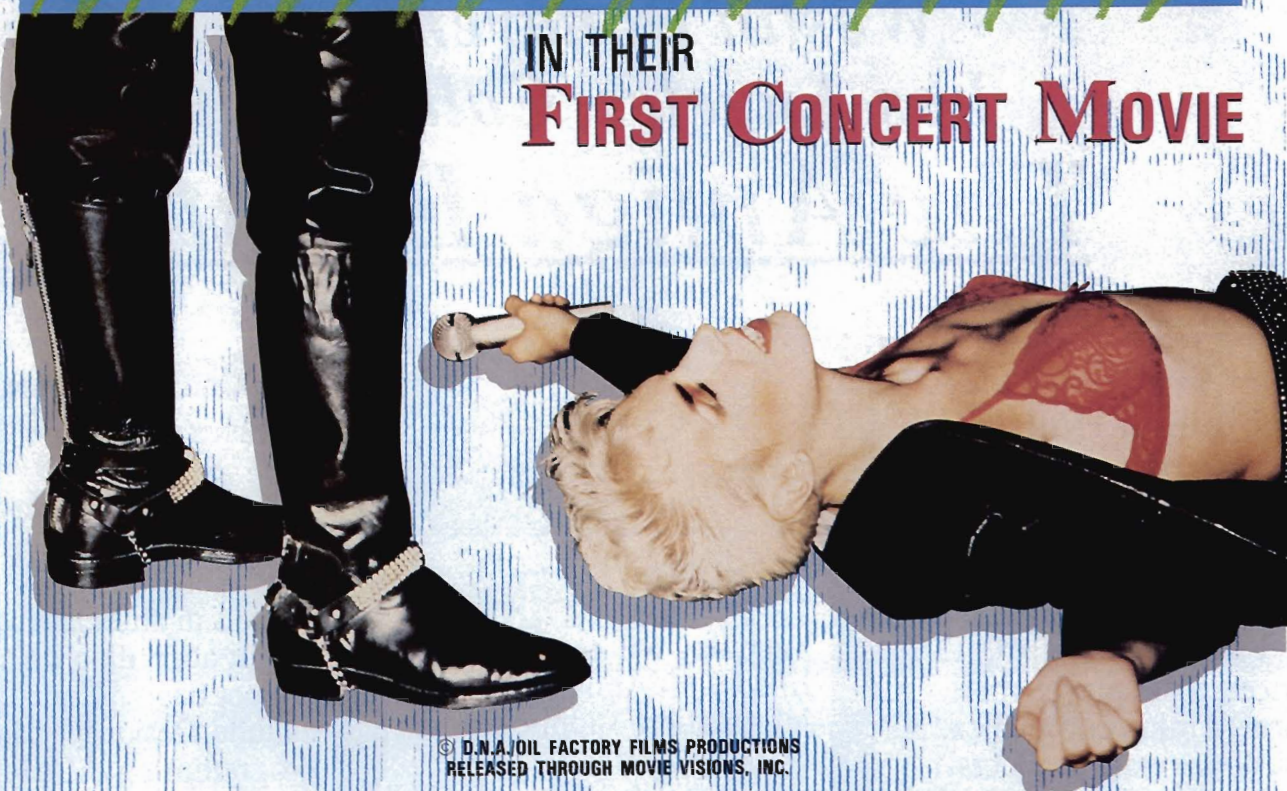
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SWEET DREAMS ARE MADE OF THESE

The Amiga is a very powerful tool in the world of Graphic Arts; even in the design of movie posters.

When I was asked to design and produce a movie poster for the rock band The Eurythmics, I didn't realize that my Amiga would play such an important part. After all, the Amiga is becoming more specialized as a video graphics system than a print media art tool. Sure, we can do great "desktop publishing" these days, but a four-color movie poster is another matter.

Just looking at the poster, you might not even be able to tell quite how the Amiga was used. Yet, the entire poster was designed on the Amiga. This enabled me to do things that might not have been possible otherwise.

THE PROJECT

The Eurythmics is an internationally popular rock band. While on a concert tour, live footage was shot of their stage performance. Later, some additional scenes were done in a studio to provide concept and continuity. This was all assembled and edited into the band's first feature concert movie, "Eurythmics Live."

The making of the poster was the result of a collaboration among several companies, including lead guitarist

David Stewart's own company, Oil Can Productions. People who were involved with the poster were scattered in California, New York, Canada and Europe. This made it difficult to communicate and transfer materials.

Typically, the entertainment industry is driven by looming deadlines. This was no exception. The movie was already being booked into theatres while we were still discussing the details of the poster. Time was running short.

After I worked up some initial design ideas and sketches, we had to arrange a meeting among the key people to present some color renditions and get the approval to go into final production. Once the necessary people were all coordinated and scheduled for this meeting, it turned out that I had to produce color design roughs, literally overnight, for a meeting the following day.

THE DESIGN

The band projects a strong sense of style. I viewed the movie and considered the imagery and dynamics on screen and how they might be used for the poster. However, I did have some constraints to take into consideration

By Christopher Kohler

other than limited time. RCA Records had recently released The Eurythmics' latest album, "Savage," and were stipulating that it appear prominently on the movie poster. This presented an imposing and unusual element which I had to somehow accommodate in the design.

A powerful aspect of movie posters is their sheer size. The impact of the images and the ability to be seen at some distance are prime factors. I didn't want to divide the poster into two different sections any more than what might be necessary.

It was too late in the game to take new photographs, so I had to use shots from the movie. I finally managed to get a photo that the band approved. I liked the drama of the shot, but the background was dark and messy. This meant that I would have to extract just the figures from the photo and get rid of the background. I also felt that the image was too static to do justice to the excitement and action of their performances. I realized that the other elements and treatments in the poster would have to add some vitality.

I decided that I needed a unique background behind all of these visual elements that would not only tie them together, but also add a sense of live performance and serve as a decorative poster element in its own right. Also, since various lines of type would appear on the poster, they had to be legible over the background image.

A crowd scene struck me as the perfect choice. I selected a photo of a crowd that I could alter for my purpose, transforming it into just the kind of graphic element that I required.

And there was the band's logo. Actually, The Eurythmics don't have one actual logotype. In most print pieces they have simply used a variation of a particular kind of typography. I decided to use something along this same line.

Finally, there was the cover of the album. I used a photostat of the cover image, coloring it after I'd digitized it.

These were the images that I had to work with overnight. Enter, the Amiga.

THE AMIGA

It was necessary for me to try all of these elements in several positions and size

relationships. Also, I needed to complete the movie title treatment with the word "Live." Since time was so severely short, I didn't see any other way that I'd be able to accomplish it all other than to use my Amiga. It would allow me to change sizes, colors and positioning at will and to then print out copies, in color, of however many versions I wished.

Many people don't think of the Amiga as a design tool for the planning of printed images. Unfortunately, in many cases, the Amiga's bitmapped images are too crude for four-color print applications. Because of this, I think many of us forsake thinking of the

**A powerful aspect
of movie posters
is their sheer size.
The impact of the
images and the
ability to be seen
at some distance
are prime factors.**

Amiga as a viable tool to use in our work in these realms. Yet, when employed to assist in the designing and planning of these pieces, it certainly can provide a unique and valuable function.

My first step was to digitize all of the separate elements and images using Newtek's Digi-View video digitizer and software. Once I had set up to do this, I proceeded to capture a wide variety of both color and black & white images at different settings. It's usually handy to have more than enough images with which to select and work.

This project demonstrates the importance of using multiple programs in conjunction with one another in order to create and process one composite image. This means that beyond planning the final outcome of a single image, it's

just as important to consider which particular programs one will need to use, and which functions in which order, so that the final results desired may be achieved. In this case, in addition to Digi-View, I used DeluxePaint, Butcher 2.0, PIXmate, and the shareware program ReColor by Stephen Vermeulen. Each program assisted the other in processing the several original images and combining them systematically into one final image.

Most important for me was the ability to alter images to be the same screen format and to have compatible palettes so that they could be combined and merged. In other situations, or when using programs other than these, the specific considerations may vary.

I had digitized all the elements at the highest resolutions but later decided to move them down to a lower resolution. This wasn't so that I could have more colors, although that was on my mind because of the color photography. Rather, I did not want to limit the size of brushes I could use in Deluxe Paint since I needed to do so much positioning (at hi-res, Deluxe Paint can only manage brushes that are a fraction of total screen area.)

Next, I needed to adjust the palettes of all the individual images so that they not only had the same number of colors, but also so that their colors would all be assigned to the same registers. This meant that each image that contained unique colors needed to determine which registers were available for shared or new colors.

I used Butcher 2.0 and PIXmate to alter screen formats and bitplanes. Changing the format was an easy, automated operation. Likewise for changing bitplanes. The palette registers required a bit more work.

First I worked with the image which required the largest number of total colors. In this case, it was the color image of Annie Lennox (although later I used a black & white photo of her for better detail). Then I consolidated colors in the palette as much as was practical, ramping the colors at one "end" of the palette. This allows for the option of shaded dithering, should I want to use it in the image at some point.

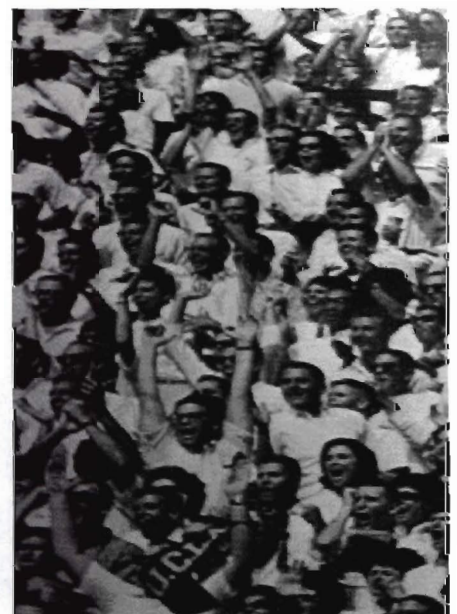
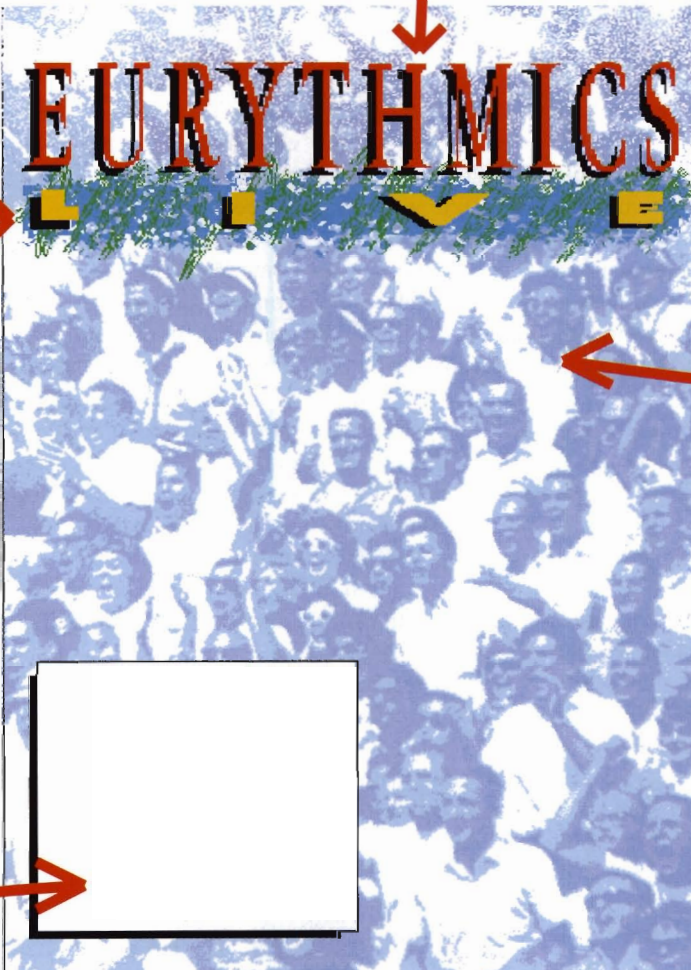
EURHYTHMICS

The different parts of the Eurythmics movie poster were digitized with DigiView from NewTek. The palettes of the pictures were matched using ReColor (a ShareWare program by Stephen Vermeulen) and the images were manipulated with Butcher 2.0 and PixMate. The images were combined and edited with Deluxe Paint.

EURHYTHMICS



L I V E



The final proofs were printed on a Xerox 4020 and were then shown to the band for final approval. In the final poster the background crowd scene was transferred from the Amiga using a Polaroid Palette film recorder and the Liquid light software to drive it.

Finally, I converted the palettes of all the images to conform with the one processed palette, using ReColor. It does a terrific job of automatically adapting the palette of one image to that of another.

The images were then prepared to be called up from within Deluxe Paint and assembled into designs for the poster. I was able to try many different designs and variations once I had saved the elements as brushes.

At this stage, I indulged in some further experimentation. I find that these kinds of projects can be wonderful test grounds which offer unexpected opportunities for exploration. I don't always find the time to try out as many techniques and approaches to imaging as I would like. So, during actual production, I will take advantage of the chance to do some pure research and trial and error.

For instance, I loaded the black & white version of Annie Lennox into DigiPaint and attempted to tint in the colors. I wasn't happy with my results, but even the discarded efforts add useful knowledge of programs.

My last chore of the night was to print out some color hardcopies of the poster designs to show to everyone at the meeting the following morning. I used a Xerox 4020 color ink jet printer, which did quite well.

THE POSTER

We all met at an office in Hollywood. David Stewart and his new wife arrived from a shopping trip on Rodeo Drive in nearby Beverly Hills. I explained my concepts for the poster and showed my Amiga-designed color samples. He looked over the designs, surprised that they were produced with a computer, and quickly gave his approval.

The Amiga had done the job, by both providing me with a way to satisfy my own creative need to work with the combination of images and elements, while also giving me a way to capture the very same work color printouts suitable for showing to others. And it did all of this in a very short period of time.

The poster was prepared for print production using mostly conventional

graphic methods. Using my Amiga designs as guides, I replicated the piece by ordering type, and indicating the positions of the various elements which were photomechanically reproduced for the printing press.

However, the Amiga did provide one more crucial item. I loaded the background photo of the crowd into both Butcher 2.0 and Deluxe Paint for a final session. I gave the entire image a light blue cast, which I adjusted brighter and lighter. Then I "airbrushed" out the top of the crowd, so that there would be less detail to interfere with where the band's name would eventually print.

Unable to resist the temptation, I cut out a picture of myself and a friend from two separate digitized photos, processed them somewhat, and then inserted them into the crowd scene. That's right... I'm now in the crowd on the poster!

Once I was satisfied with my tinkering, I took my disk to a fellow user group member, Kip Hammond, who has a Polaroid Palette film recorder and Liquid Light software to drive it. He allowed me to use his equipment to put the image onto a roll of Ektachrome at a number of bracketed settings. The film was then developed by a nearby photo-processor and mounted into slides in a matter of hours. I chose one, added it to the other prepared materials and sent them to the printer.

The image loses a lot of resolution once it is enlarged from a 35mm transparency to repro film 28"x40". Even the scanlines that were recorded by the Polaroid Palette became visibly decayed after such severe enlarging. But, I had anticipated this kind of crude quality and had designed for it in particular. By using the Amiga in such an unusual way, I was able to get good results. The image was printed on the cyan plate only as line art with a slight screen tinting.

Meanwhile, the promoter had rented a large, well-known building, the Hollywood Palace, for a special Premiere Showing and Opening Party. The press, media representatives and many show business notables were invited to attend this gala screening of the

movie followed by a party. The posters had to be there.

The evening of the opening, the first batch of posters was just coming off the printing press. I quickly tossed them into my car and ran them up into Hollywood to the Palace, arriving as the crowds were lining up outside the building. Definitely a close call!

It might be argued that one could take as long to digitize and process all of the images prior to being able to design with them as it would take to produce the color designs via conventional graphic methods. I doubt it. It's certainly not a precise matter, since we all work in individual ways. But I feel certain that the Amiga was a sure advantage to me with this project.

It's true that I've spent a lot of time with the Amiga over the past couple of years. This allowed me to feel familiar enough with the use of the required programs to call them into service on short notice.

Most of these graphic programs come complete with good documentation and manuals which explain the programs' features and use. Still, we are left to ourselves to discover the details of how to use these programs in combination. I realized early on in my use of graphic programs that I would need to devise some of my own methods, so I began to experiment and practice with uncharted techniques.

Many, if not most, of the applications we see for Amiga graphics are much more overt and showy: beautiful illustrations, ray tracings, animations. A movie poster, one more way that the Amiga delivers to us graphic power and practical application. This kind of background, supporting role is far less glamorous. Yet, it's no less valuable or important. □



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PIONEER PLAGUETM

by
Bill Williams

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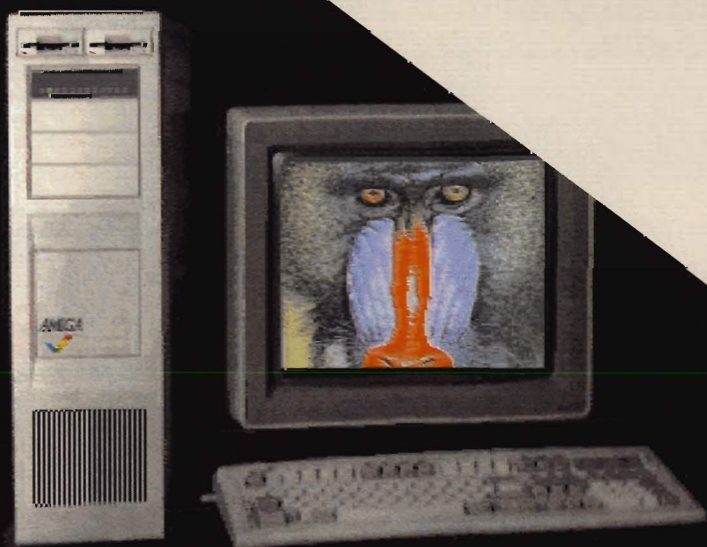
AMIGA 3000

UNVEILED

Could this be the new
Amiga computer
everyone is eagerly
awaiting, or is it
just a twinkle in an
author's eye?

By

Eyo
Sama



Before I start this article I have to warn you that no part of the information on the A3000 in this article is based on facts supplied by Commodore, but is based upon speculation on my part and that of others in the industry, rumors, and on what I would personally like to see in the Amiga 3000.

WE CAN DO BETTER...

In the wake of the new generation of computers from Apple and IBM, there is a need to see the emergence of a new computer from Commodore. Obviously this new computer would have to be more powerful, faster, have more colors and a higher non-interlaced display resolution than the present generation of Amigas, the Mac II, and the PS/2 series. Although the Amiga 2000, with some add-on boards, can be made more powerful than the above mentioned computers, we are still faced with the attitudes of people who will not acknowledge the existence of such boards unless they are made by Commodore. The basic configuration and the spec sheet should clearly exhibit the superiority of the Amiga 3000 over that of the competition.

HARDWARE

The Amiga 3000 WS (workstation) looks quite different when compared with the Amiga 2000. The main unit is an upright tower which can stand on the floor beside (or under) a desk. This new design frees a lot of desk space and gives the system a very professional appearance. The keyboard plugs into the back of the main unit and is compatible with the A2000 keyboard. There are still two joystick ports which are also at the back of the main unit (yes, even workstation users play games). Port 1 is used by the mouse, there is even an optional cordless mouse, controlled by a transmitter situated on the side of the keyboard.

Now we come to the heart of the A3000 where we can find a 25 MHz Motorola 68030 micro-processor which has an inbuilt 68851 MMU (memory management unit) and is accompanied by a 25 MHz 68882 floating-point co-processor. Both chips can be upgraded to the 33 MHz versions when they become available. This combination and the 5 custom chips (which I will describe in a moment) will make the Amiga 3000 the most powerful personal computer available, it will also easily compete with other workstations and mini-computers. The 3000 comes standard with 8MB (mega-bytes) of memory on the motherboard of which 4MBs is CHIP RAM and the remaining 4MBs is FAST RAM. The new custom chips have a 32-bit address space and can therefore address the same amount of memory as the 68030 processor which is 4.29GB (giga-bytes). CHIP RAM can now be expanded as well as FAST RAM, the only limiting factor is that the combination of CHIP and FAST RAM cannot exceed the addressing range of the main CPU. The standard 8 megs of RAM are socketed 1MBit memory chips and can be exchanged for 4MBit or 16MBit chips when they become available, allowing for 32 or 128MBs of RAM on the motherboard. This memory is evenly distributed between CHIP and FAST. There are two 32-bit slots which are specifically for memory expansion, one is for CHIP RAM and the other for FAST RAM, allowing the Amiga 3000 to be expanded to the full 4.29GB address space of the main processor and the custom chips (the total amount of memory in both slots cannot exceed 4.29GB).

There are 14 slots in all: two for memory expansion (one for CHIP and the other for FAST RAM), three 32-bit expansion slots for Amiga 3000 specific hardware, three 16-bit expansion slots (fully compatible with Amiga 2000 hardware boards), four PC/AT slots

(maybe PS/2 Microchannel slots if that system survives) which will hold the Amiga Bridgecard and other PC/AT peripherals, and two video slots (one for framebuffers and one for any other video peripherals).

There is an inbuilt auto-booting hard-disk controller; it has ST506 connectors as well as SCSI connectors. The Amiga 3000 comes standard with either a 40MB or 100MB 12ms internal Hard-Drive. There are four half-height 5.25" slots one of which can be used for the optional 800MB WORM optical disk drive or possibly for a read/write optical disk drive. As far as floppy-drives are concerned, the 3000 comes with two 1.4MB 3.5" drives. These 3.5" drives can read and write the old AmigaDOS format but work with the new AmigaDOS which uses the fast-filing system and is therefore several times faster than the old DOS.

THE 5 CUSTOM CHIPS

Audio support has been removed from the PAULA chip, instead there is a new dedicated CD quality sound chip (the name of this new chip is still unknown ie. a well kept secret). PAULA now only handles I/O and disk read/write. There is a modified DENISE and the FATTEST AGNUS ever. There is now a special graphics support chip which works in conjunction with the FATTEST AGNUS. These new chips are all 32-bit and can therefore address the up to 4.29GBs of Amiga 3000 memory. To preserve the benefits of having FAST RAM, the Amiga will not allow the custom chips to access memory from the FAST RAM slot or the FAST RAM on the motherboard (this is configured on boot-up). There are now four blitters which are dynamically allocated depending on the number of bitplanes being used in a particular display, for example, in an 8-bitplane screen each blitter is in charge of two bitplanes. For even faster blits there are sockets which allow you to attach math co-processors



Workbench 2.0

The Workbench screen has been set to a resolution of 1000x800 with 5 bitplanes, giving 32 available colors from a palette of 16 million. The shadowing can be switched on or off via the Preferences program. The new enhanced CLI includes a vertical proportional gadget which lets you move backwards to view previously scrolled lines.

to the blitters.

The new chips support all the old graphic modes of the original Amiga in addition to supporting 256 colors (from a palette of 16 million colors) in any screen resolution ranging from 320x200 to a maximum of 1280x800 (which requires just over 1MB of CHIP RAM). There is also a special hi-res mode which supports an incredible resolution of 1920x1200 with a maximum of 32 colors from a palette of over 16 million (this mode requires nearly 1.5MB of CHIP RAM). The old HAM mode is now also supported at the higher resolutions. In order to really approach true photographic quality there will be the new SUPER HAM mode which requires 8 bitplanes per screen and therefore allows the use of over 262,000 colors on-screen at one time.

THE NEW MONITORS

There are three new multi-syncing monitors which are available for the Amiga 3000. The A3014 and the A3019 are 14" and 19" color monitors respectively which both support resolutions up to a maximum of 1280x800 and will display over 16 million colors. The third monitor is the A3019 HR, this color monitor has all the features of the other two but also supports resolutions up to

2000x1500. The A3019 HR is intended for the high-end CAD or DTP market and is therefore also priced accordingly (expect to see a five figure price tag). All the monitors also support the old interlace modes.

The Amiga 3000 can also be used with other presently available multi-sync monitors but these may not have the stereo speakers which come standard with the A3014 and the A3019.

As an added feature, there is an optional multi-monitor interface which plugs into the back of the main unit of the Amiga 3000. The multi-monitor interface allows the hook-up of up to three monitors, the new system software can show a different screen on each monitor. For example, imagine a paint program (perhaps DPaint IV) which displays a full image on one monitor and a smaller "zoomed-in" image on another, or a 3D object editor which uses one monitor to constantly display a 3D rendering of an object you are designing on another monitor. These are all practical applications, what I would also like to see is flight simulators which use three monitors to display different views from the cockpit. The mouse pointer can be made to move from monitor to monitor, therefore you can have a different menu and screen on each monitor or you can

create a screen which spreads across 2 or 3 monitors.

SYSTEM SOFTWARE

The system software, Kickstart 2.0, has been greatly enhanced with several additions, in fact there has been a major overhaul, nearly everything is rewritten. The graphics library was rewritten to handle more colors, higher resolutions, the SUPER HAM mode, multiple monitor support, multiple blitters, and several other additions. The new intuition library supports the shadowing of windows through an extension to the NewWindow structure and also supports all the additions to the new graphics library. Another addition to the intuition library is a tear-off-menu feature; by pressing the left mouse button while the mouse pointer is still on the menu bar, you can tear the selected menu from the menu bar and leave it sitting on top of your screen. Several new resident libraries have been added to the system software; the long awaited IFF library, a MIDI library, a 3D library, a speech recognition library, and a library to support frame buffers.

The IFF library supplies functions which range from IFF image loading, compressing, and saving routines to routines which load, save, compress,

and play IFF sounds and animations. The MIDI library contains functions to handle all communications with MIDI compatible hardware. The 3D library functions and structures make it very simple to create three dimensional animations and programs. With the 3D library you have functions for the translation and transformation of three dimensional objects, and also functions for clipping, hidden line and surface removal, shading, and ray-tracing. The speech recognition library works in conjunction with any sound digitizer which supports the IFF sound format. Besides supporting speech recognition the Amiga 3000 has improved speech synthesis with its new re-worked Translator and Narrator. The frame buffer library directly supports compatible frame buffers with up to 24-bits of color information therefore they will be able to display over 16 million colors on-screen at the same time. The new intuition library supports frame buffers and therefore calls the frame buffer library when it needs to.

Kickstart 2.0 has an in-built GURU killer (similar to the commercial product called GOMF) which tries to recover from GURU meditation errors, it frees the memory and resources associated with the software crash.

AmigaDOS for the Amiga 3000 directly supports MMUs (Memory Management Units) so the 68851 is used for more than just UNIX support.

WORKBENCH 2.0

Workbench 2.0 uses a preferences selectable 2, 4, 5, or 8-bitplane screen meaning 4, 16, 32, or 256 colors from the Amiga 3000's palette of 16 million colors. The resolution of the Workbench screen can also be set via preferences anywhere from 640x200 to 1920x1200. The default preferences setting is a resolution of 1280x800 with 256 colors. The Workbench windows have shadows which work in the same fashion as the presently available public domain program called DropShadow. The shadows can be turned on or off via the Workbench menus. Also controlled from the Workbench menus is a new feature which allows you to convert an already open screen into a window. A

submenu in the Workbench menu contains a list of all the intuition screens in the system, selecting one of them closes it and then reopens it as a window on the Workbench 2.0 screen. The screen must originally have had fewer or the same amount of bitplanes as the Workbench screen. If the Workbench is set to use 256 colors and the screen being converted uses only 32 colors then those 32 colors will be allocated to that screen. This is not an exclusive allocation so as to remain compatible with other programs and to maintain the integrity of the multi-tasking system. The color allocation allows programs running on their own screen to be captured, turned into a window, and be used on the Workbench screen. For example, you could run DPaint II at a 640x400 resolution and capture it as a quarter

The default preferences setting is a resolution of 1280x800 with 256 colors

screen size window on the 1280x800 Workbench.

Workbench 2.0 also supports multiple monitors and can therefore be spread across several monitors. In addition to multiple monitors, there is also a preferences selectable page size option whereby the actual page size of the Workbench screen can be larger than the resolution of the screen. Hidden parts of the screen can be viewed by moving the mouse to the edge of the visible portions of the screen or by clicking and dragging any part of the screen which is not a window.

The new preferences program allows you to control and set just about everything including what colors you want, number of colors, resolution, screen page size, Workbench font and font size, CLI font and font size, number of monitors, printer preferences, printer parameters, serial parameters etc.

The CLI (Command Line Interface) has also been enhanced and via a vertical proportional gadget in the right-hand border now supports the scrolling of previously displayed lines of text. The size of the buffer which stores the previously displayed lines can be set in the preferences program and is only limited by available RAM. The enhanced CLI now also has a few menus and supports the cutting and pasting of text via the clipboard. There are also several new CLI commands: SHOW - Displays IFF picture files, ARCER - A file compression utility, DEARC - A file decompression utility, SCREENBLANK - A screen saving program with user definable time delay. These are just a few of the new commands that are sorely needed. The new DiskCopy command allows you to specify whether you want to write the new or old DOS format (this is how you can upgrade your old disks to the new 1.4MB format).

Software developed for the Amiga 500, 1000, and 2000 will work on the Amiga 3000, but software designed specifically for the 3000 will not necessarily work on the other three machines. Software will often work very much faster than they do on the machines they were designed for.

PRICING

Exact pricing has not yet been established, but you can expect the Amiga 3000 WS to cost slightly less than a Mac II or a PS/2 model 80. The fact that you get a more advanced and powerful machine for less money has always made the Amiga a great buy, things do not have to change in this respect.

CONCLUSION

These views on what the Amiga 3000 should be like are not just my own but also those of several individuals who, like me, spend 12 to 14 hours a day working on Amiga computers, we feel that the computer we call "The Best" can be turned into an even better machine than it already is. With a little luck Commodore will take a serious look at some of the ideas shown in this article and implement them in the design of the Amiga 3000, maybe they already have. □

FINEPRINT

Most printers only simulate shades of gray by printing several dot patterns. FinePrint allows you to get the most out of your 9-pin dot matrix printer by printing computer images in shades of gray. FinePrint prints dots, but the difference lies in the layers of ink that build on the paper. FinePrint works with almost any 9-pin dot matrix printer. Should you have a printer that is not compatible with FinePrint, simply write to Designlab to find out if your printer has been added to their list. According to Designlab, they are adding new printers every day.

In order to get the best results with FinePrint, a worn-out ribbon is required. Using an old ribbon, you can allow up to 15 hits, thus creating a gray scaling effect. If you use a new ribbon, the printed image will show up dark after only a couple of hits. Another disadvantage of a new ribbon is that it will saturate your paper more quickly. There is a ribbon menu where you can select the type of ribbon (new, medium, or old) being used according to how worn out it is.

FinePrint can handle any IFF image, but not a HAM image. This means that it will only work with images that have

32 colors or less. It can print an image at any resolution from 320x200 and up. If an image is too large to fit on the paper, you will have to glue together several pages to get a complete image. FinePrint can also print images sideways. There are many features in FinePrint that will help you get the best quality image possible, but it will take some time to achieve good results.

WORKING WITH FINEPRINT

In order to run FinePrint, you must first run FinePrefs to configure the program to your printer settings. Using FinePrefs is a simple matter of selecting the printer port and choosing the correct type of printer that you are using. Once that is done you must select the resolution that your printer will be using. When you select "Save," these new settings are saved to disk and you can then use the FinePrint program.

For those who want to print large images, there is a special feature called "Averaging 1 and Averaging 2" which rounds out the corners of the pixels so that there is a smooth transition of shading from one gray shade to another to the other. The difference between Averaging 1 and Averaging 2, is that Aver-

By Alex Ribeiro

aging 1 does a better job at smoothing the edges when the pixel has had only one hit and is next to white paper. Averaging 2 will suit better if there is a darker area next to the white paper, but will turn a one pixel line of a gray shade into a line of dots. Trial and error will be your only solution to achieving a good image.

If you want to change the size of the image to be printed, just change the numbers in the Width and Height boxes. When you are printing an image and you find that it is not centered properly, you can use the centering control to move the image around the screen.

THE MANUAL

The manual is well written and helpful, for example, there is a section called "TRY IT OUT" which describes, step-by-step, the procedures for using FinePrint and FinePrefs, in addition to providing instructions for loading, centering and printing images.

The manual describes the various gadgets available and how to use them.

"Sliders" are controls that are used to select the amount of ink you want on your paper. "Palette Buttons" are used to choose several new settings instead of using the original settings. "Size Controls" are used when printing in various densities and sizes. The most interesting gadgets are the "Paper Feed Buttons" which are used to control your printer feeder commands directly from the Amiga screen - a very handy feature if your printer isn't beside the computer terminal.

CONCLUSION

The people at Designlab have come out with a great printer utility, especially for those of us who cannot afford to buy an expensive dot matrix or laser printer. The few disadvantages of FinePrint are that it cannot work with HAM images or print in color. There is also a lack of diagrams in the manual, which could have been included to help the user get a better grasp of the program while reading the manual.

Although you cannot compare the

resolution of a dot matrix printer to a laser printer, FinePrint will greatly improve the quality of image printouts on your dot matrix printer. FinePrint is a very easy and powerful tool to have, and should be had by anyone who does a lot of graphics printing. □

FinePrint

Designlab

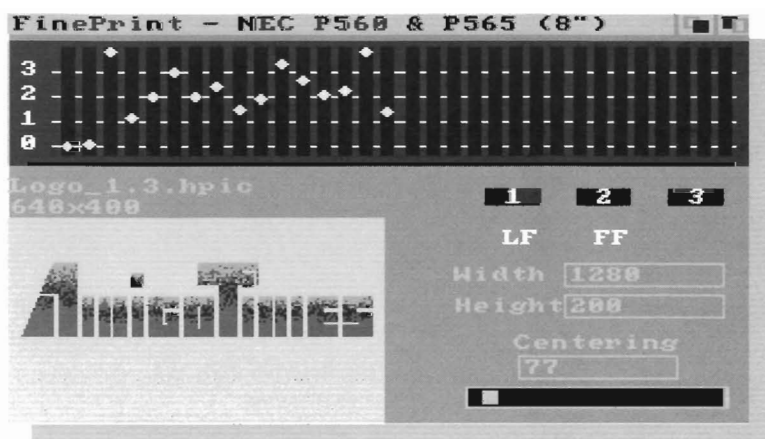
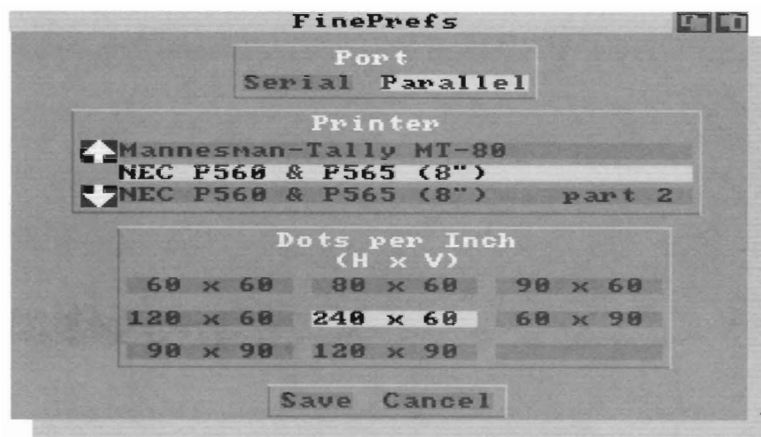
P.O.Box 419

Owego, NY 13827

USA

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FinePrefs allows the user to select output port, printer type, and print resolution.



With this menu you can select the aspect ratio and control the gray-scaling of outputted images. It also allows you to choose your ribbon type.

"C" Further

With the emergence of programs such as MoreRows and VScreen which allow you to either add extra rows and columns to your Workbench screen or increase the overall page sizes of your screens, it is often desirable to ensure that your programs open their screens and windows to the full page size available. Amigas running under the PAL system (in Europe and several other countries) have a standard Workbench screen height of 256 lines, i.e. 512 lines when interlaced. Several programs, even some of the commercial ones, end up leaving an ugly border where extra data should have been written. When Commodore's new 1008x800 monitor is released (and its supporting software Workbench & Kickstart 1.4) you will also have to ensure that your windows open to the full size available (that is if you want them to). As you can see, it is quite important to ensure that your programs make use of the entire display area of machines which run with non-standard Workbench screen dimensions.

There are two ways in which you can determine the current page size of the Workbench screen. The simplest way is to examine the values of NormalDisplayColumns and NormalDisplayRows in the GfxBase; these values represent the screen width and height of a standard (i.e. non-interlaced) Workbench screen. This can be done in the following manner:

```
.....
struct GfxBase *GfxBase = NULL;
int width, height;
.....
if ((GfxBase = (struct GfxBase *)OpenLibrary("graphics.library", 33L)) == NULL){
    /* clean up routine */
    .....
};
.....
width = GfxBase->NormalDisplayColumns;
height = GfxBase->NormalDisplayRows;
.....
```

These values can then be used as the width and height of a custom screen or window that you are trying to open, you need only assign the values to the appropriate structure members of a NewWindow and/or NewScreen structure:

```
struct NewScreen nscr = {
    .....
};

struct NewWindow nwin = {
    .....
};

.....
nscr.Width = width;
nscr.Height = height;
nwin.Width = width;
nwin.Height = height;
```

One problem encountered with this method is, you do not really know if the Workbench screen is interlaced or not, also,

Here are two simple but useful tricks to help you with your C programming tasks.

if your Workbench screen has a larger page size than is displayed, you will only get the dimensions of the visible portion of your Workbench screen. To determine what the actual BitMap dimensions are, you can try the second, more elegant, method of ensuring that your windows open to the correct size. Version 1.2 of the operating system contains a function which enables you to determine the structure contents of a specific screen. The function to use is GetScreenData() which will return a copy of the Workbench Screen structure if it is used in the following manner:

```
struct Screen scr;

GetScreenData(&scr, sizeof(struct screen), WBENCHSCREEN, NULL);
```

scr.Width and scr.Height contain the values we need to open our windows to the correct size. □

I came across another great trick while I was writing DARC (the Workbench de-arc'ing interface on the AmigoTimes disks which allows you to de-arc files by specifying where you want to de-arc to and by simply double-clicking on an icon of the file). We tried to use XIcon to run PKAX (the de-arc'ing program) from the Workbench but came across all sorts of problems because XIcon can't handle interactive programs and there is no way to properly change directories to satisfy PKAX. Therefore DARC had to be written in about 12 hours flat because we were already past the duplication deadline. In DARC I use the Execute() function to invoke PKAX and I unsuccessfully tried to Lock the directory I wanted to de-arc to, instead the files were being de-arc'd to whatever device was used to boot, which in my case was RAD: (the recoverable RAM disk). I spoke to Carolyn Scheppner, from Commodore, about my problem and like always in a few seconds she had an answer which solved my whole dilemma. She told me that I had to change directory within the same Execute() statement being used to invoke PKAX. The following lines did the trick:

```
char s[255];
char pathStringGADSIBuff[100]; /* directory to de-arc to */
char path[100]; /* the path and filename of the file to be de-arc'd */

sprintf(s, "cd %sAmigoTimes_v1.2:utility_tools/pkax -r 042%s042",
        pathStringGADSIBuff, path);

error = Execute(s, 0, 0);
```

I will release the source to DARC as soon as I clean it up (I'm a bit ashamed of the code right now, it works but it was written too fast). Thanks for the help Carolyn. □

By Eyo Sama

*H*ere is your AmigoTimes V1.3 Diskette

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It allows AmigoTimes to provide the reader with some of the latest and best commercial demos, shareware, and public domain software available. Making demos of commercial programs available on the disk allows you to have hands on experience with the program before actually going out and buying the original package. How about public domain software and shareware? You now have access to a vast, continuously changing library.

As a programmer you will have available to you pretested source code that does not have to be typed into the computer; all source code and running programs that are referred to in AmigoTimes articles can be found on the disk.

NOTE: THIS IS NOT A BOOT DISK
Instead boot with your workbench disk.
READ THE DISK LABEL INSTRUCTIONS



V 1.3

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 - Arc023
 - PKAX
 - ZOO 2.0
 - PAK
 - WARP
 - UNARC
- DEMO.arc
 - Lightening Logger V3.0 (DEMO)

Games:

- Wheel of Fortune

Listings:

- BFIO.asm
- FILEREQ.mod
- FILEREQ.def
- FRTEST.mod

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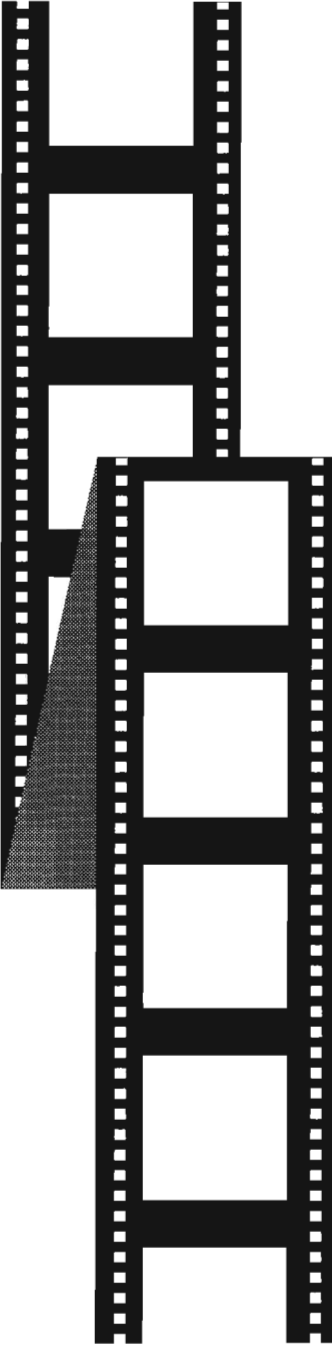


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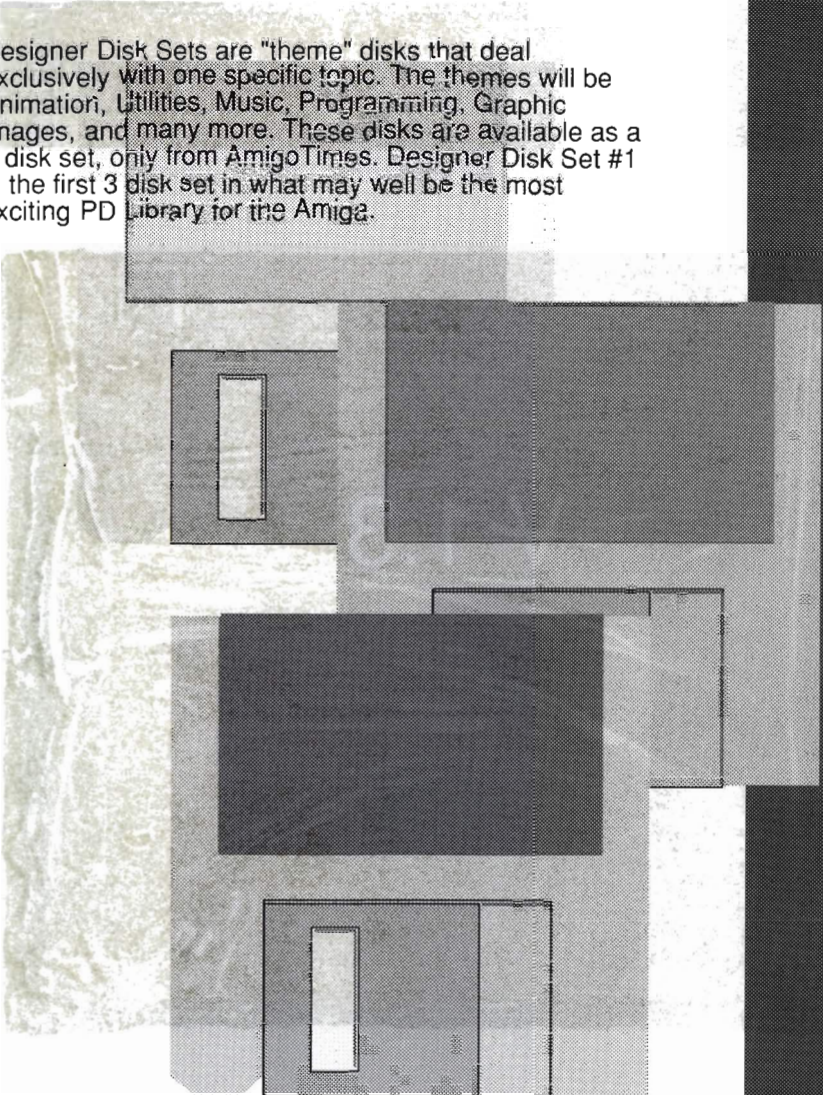


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Trapping Keypress Events In

AmigaBASIC

Often, an AmigaBASIC programmer will want to allow the user to press a special key to perform a special function, for example, "Press <HELP> for instructions." In addition, particular applications may run faster if the program grabs keypress events (when the user presses a key on the keyboard) directly without requiring the user to press <RETURN>.

AmigaBASIC does return unique keycodes for all the special keys on the keyboard, and will often return additional unique values if the key is shifted, or is used with the CTRL key or one of the ALT keys. The trick is knowing what the codes are and how to get to them.

The INPUT function does not work well for trapping special keys because it echoes all the keystrokes to the screen, and special keys just leave a funny little box on the screen. In addition, you will probably want to break out of the normal processing if a special key is pressed; INPUT requires the user to press <RETURN>, and then your program must sift through the value typed in for any special key events. Instead of using the INPUT function, I recommend a little bit of programming to grab the keypress events directly.

What you need to use is a

WHILE..WEND loop in conjunction with the INKEY\$ function. Here is a section of code that works well:

```
GetKey:
a$=INKEY$
WHILE a$=""
a$=INKEY$
WEND
KeyCode=ASC(a$)
ReturnKey$=a$
SpecialKey=((KeyCode<32)OR(KeyCode>126))

RETURN
```

This subroutine takes no input, and returns the following:

KeyCode : the numeric code for the key that was pressed.
ReturnKey\$: the character that was pressed.
SpecialKey : a value that tells if a special key was pressed.

You can use SpecialKey in statements like:

```
GOSUB GetKey
IF SpecialKey THEN GOSUB ProcessSpecialKey
```

ProcessSpecialKey is a subroutine

for handling whatever special key events you wish to process. Keep in mind that you don't have to handle all the possible keycodes that might be generated, just handle the ones you want and ignore the rest, or perhaps BEEP the user. There are a lot of keycodes that could be passed back, and you may only want to process a few. When I write a ProcessSpecialKey subroutine, I use the variable KeyCode in an IF..THEN..ELSEIF block, i.e.

```
ProcessSpecialKey:

IF KeyCode = 139 'Help key
GOSUB HelpKey
ELSEIF KeyCode = 129 'Function key 1
GOSUB Function1
ELSEIF KeyCode = 130 'Function key 2
GOSUB Function2
ENDIF

RETURN
```

Table 1 is a listing of all the keycodes for all the alphanumeric keys (A-Z and 0-9), Function keys (F1 - F2), cursor keys (arrow keys), and editing keys. The table shows what the code is for:

. normal keys (the key alone)

By James W. Shields

- shifted (one of the shift keys pressed with the key)
- if one of the ALT keys is pressed with the key
- if the CTRL key is pressed with the key
- if the ALT key and the SHIFT key are pressed with the key

A couple of notes about the table:

1. There are some keys that don't seem to return any keycode.
2. There are three keys that do return a code, but your program will never get them: CTRL-C (break), CTRL-S (Scroll halt), and CTRL-F3 (also generates a break).

The routines outlined above work well for intercepting individual key-press events. You may need to write a special input handling routine if you want to get more than one keystroke as well as check for a special function key.

The amount of use you get out of this technique will depend largely upon the application you're implementing. Often the INPUT function will do perfectly well, but this technique will allow you to expand and professionalize many of the AmigaBASIC programs you write. □

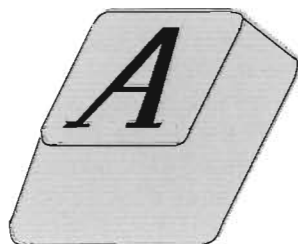


Table 1. Keys and their Keycodes

Key	Unshifted	Shifted	Ctrl	Alt	Alt-Shift
A	97	65	1	230	198
B	98	66	2	186	186
C	99	67	<break>	231	199
D	100	68	4	240	208
E	101	69	5	169	169
F	102	70	6	<none>	<none>
G	103	71	7	<none>	<none>
H	104	72	8	<none>	<none>
I	105	73	9	161	166
J	106	74	10	<none>	<none>
K	107	75	11	<none>	<none>
L	108	76	12	163	163
M	109	77	13	184	191
N	110	78	14	173	175
O	111	79	15	248	216
P	112	80	16	182	182
Q	113	81	17	229	197
R	114	82	18	174	174
S	115	83	<noscroll>	223	167
T	116	84	20	254	222
U	117	85	21	181	181
V	118	86	22	170	170
W	119	87	23	176	176
X	120	88	24	215	247
Y	121	89	25	164	165
Z	122	90	26	177	172
0	48	41	16	187	41
1	49	33	17	185	33
2	50	64	0	178	64
3	51	35	<none>	179	35
4	52	36	<none>	162	36
5	52	37	21	188	37
6	54	94	30	189	94
7	55	38	23	190	38
8	56	42	24	183	42
9	57	40	25	171	40
F1	129	129	1	129	129
F2	130	130	2	130	130
F3	131	131	<break>	131	131
F4	132	132	4	132	132
F5	133	133	5	133	133
F6	134	134	6	134	134
F7	135	135	7	135	135
F8	136	136	8	136	136
F9	137	137	9	137	137
F10	138	138	10	138	138
ESC	27	27	27	155	155
BACKSPACE	8	8	8	8	8
DELETE	127	127	31	127	127
HELP	139	139	11	139	139
UPARROW	28	28	28	28	28
DOWNARROW	29	29	29	29	29
LEFTARROW	31	31	31	31	31
RIGHTARROW	30	30	30	30	30
TAB	9	155/90	9	155/90	9

PUBLIC DOMAIN & SHAREWARE REVIEWS

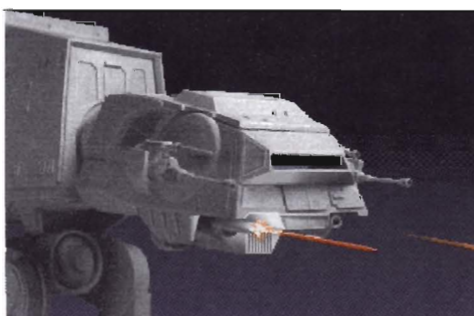
By Ernest N. Nagy

WALKER DEMO animation

by Imaginetics/Brian Williams

The animation depicts one of those Star Wars Walker robot/tank things lumbering across a wooden desktop in front of an Amiga 2000, from various angles and close-up shots, firing its laser-cannon, with sampled sound effects throughout the animation. The animation fills two entire disks and requires 2 MB of RAM on your Amiga in order to view it. I have seen many great animations before, but this takes the cake. You must "see it to believe it."

It was created using a combination of Amiga software, starting out by digitizing an actual toy model of the Walker, moving it a little, taking a picture, then moving it a bit more, taking another picture, etc. in the tradition of "Stop-Motion" animation. Every frame was touched up by hand, combined into multiple ".anim" files, and then sequenced along with the sound effects and titles with The Director.



gram is shareware but comes with a public domain player which can be used to distribute your slideshows.

CRUNCHER

(AmigoTimes Disk V1.3)

This utility can compress most single file programs. After crunching a program, the crunched version remains an executable file and thereby does NOT require "un-arc-ing" or de-compressing before being run. Crunched files un-compress themselves (without the need for the original compression program) on the fly and will run exactly as before compression, but will occupy much less space on your disk. The added time it takes to un-compress itself varies, but is usually not significant. The only visible difference is a short rainbow color cycle of the Workbench screen as the program is loading. Crunch will also let you un-Crunch your program afterwards. Crunch will not compress all programs; usually not programs that use overlays. It's best to experiment on backup copies of your software only.

SLIDESHOW CONSTRUCTION SET

by Adam Rybicki

(AmigoTimes Disk V1.3)

This program will allow you to easily create "script" files for different kinds of static pictures, thereby custom building your own slide show. Unlike some commercial programs, SCS is not limited to displaying and manipulating images of only one type or resolution. Although currently it cannot manipulate overscan or extra HalfBrite images.

The intermixing of different picture types is possible due to each picture frame being displayed on its own screen. The "script" file can even be edited with a regular text editor (like Ed or TxE).

Currently supported "wipes"

<i>Displaying</i>	<i>Erasing</i>
Fade in	Fade out
Blinds open	Blinds close
Checker	Checker
"Zoom"	"Zoom"
Scroll up	Scroll down
Sideways	Sideways
Spiral	Spiral

Not all the "wipes" will work well with HAM images (due to the way HAM pictures are handled by the graphics hardware of the Amiga). Using "Fade in" or "Fade out" may not produce very pleasing effects. This pro-

LIGHTNING LOGGER v2.0

by Ronald T. Shaw

(AmigoTimes Disk V1.3)

Lightning Logger is probably the fastest disk cataloger (for floppies or hard drives) available for the Amiga. Lightning Logger consists of two programs (LLog and LLread). This program's main purpose is to catalog all your disks (and hard drives) and then find any program you happen to be looking for with lightning speed.

It started out as a simple program that would assist programmers to quickly find modules that the main program accessed, but it has now turned into a fully-blown disk cataloger.

(continued on page 77)

THE ELECTRONIC CANVAS

THE FEW, THE PROUD, THE ARTIST?

There are many ways to classify the arts, their purpose, their intentions, and their effects. The most usual and fundamental method of classifying the arts is by their mediums. Classifying by medium, the arts can be described in the following manner:

Auditory Art. The medium for the auditory arts is sound. This includes music in all its diverse forms, but not song, opera, or those arts that combine music with literature.

Verbal Art. This is an area of the arts that has its basis in language and the knowledge of the meaning of words. For example, try to listen to a poem written and read in an unfamiliar language, and you will get an idea of what I mean. It is also this knowledge of language that makes it possible to appreciate literature.

Visual Art. This includes two-dimensional works such as drawing and painting, and three-dimensional works such as sculpture and architecture. This is an area that appeals to the visual senses, and our area of concern.

Mixed Arts. This is an area that combines any or all the above mentioned mediums.

Graphic Arts, a generic term that is given to an area of the visual arts that has often been left to the so-called creative individuals of our society, the intellectuals that seem to feel and experience daily occurrences in life in a manner that is supposedly quite different from the rest of mortal men. Whenever someone was asked to conjure up a picture of an artist, images of wild-eyed individuals with strange tastes in clothing and wine would often be brought to mind. In institutes of higher learning where knowledge of the pure sciences are pursued, it was almost a social taboo to mention that one had a passing interest in the arts, to even talk of taking an art course or being in the program. In the past, artists were either revered or shunned but, they were always different.

But let's face it, all of us at one time or another have had the desire to create something, to draw a "still-life," or even just "doodle" away while engaged in casual conversation on the telephone. Each and everyone of us has an "artistic tendency" just screaming to get out. The question is, how do we now realise these feelings and indulge ourselves knowing full well that some of us couldn't

By Olusegun Olaniyan

We have come a long way since the early days of the Amiga; from the lo-res 320x200 images created on Graphicraft to the 1500x1500 HAM pictures possible with Deluxe PhotoLab.

draw a straight line with a ruler?

With the advent of personal computers and the introduction of PCs such as the Amiga 1000, some of those forementioned artistic tendencies can now be satisfied. The computer affords the artist the chance to experiment with a myriad number of variations on a design idea; it is a clean, safe environment wherein there are no messy paints to clean up or charcoal to smudge your hands with. Every idea can be created at the speed of a mouse, and variations on these ideas can be attempted almost instantly.

As far as ease of use is concerned, if you suffer from "Compuphobia," a morbid fear of computers, you can be safe in the knowledge that you don't have to be a programmer in order to use the average paint program. The user interface for most paint programs are self-explanatory. This is brought about by the extensive use of symbols or "icons" to represent paint effects and program functions. For example, the straight line function is represented by an icon showing a diagonal line, or a spilling can of paint as a representation of the flood filling function.

There are still many art "purists" (i.e. painters that work in oils, acrylics, watercolors, charcoal, etc.) that refuse to accept computer art as a legitimate art-form; although the PC is quickly gaining acceptance in the area of graphic design.

As to whether computer art is a true art form, this may always be an area of controversy, and I can't even begin to presume that I am sufficiently qualified to debate such a topic; although it is my belief that people know what they like,

and they should always avoid being "bullied" into accepting whatever someone else is preaching as the divine truth (as they see it).

LOOKING BACK, BUT NOT TOO FAR...

Many years ago when the first personal computers were introduced, I had my first look at computer graphics and I was not too impressed with the market offering. At the time, those marginally affordable PCs had colors that were preset and limited, pixels were big and blocky (poor resolution), and a portrait of a person would sometimes look like something your little sister drew during a bad day at kindergarten. Of course, I am referring to the first 8-bit machines released upon an eagerly awaiting public. Marginally passable graphic programs were simply not available at the price range of the PC user. This was not a reflection upon the machines, but rather the software and input devices that were available; after all, the Commodore 64, supposedly one of those antiquated 8-bit dinosaurs, is still astounding many users with its graphics capabilities.

A few years later with the introduction of "the first computer for the rest of us," MacPaint was released and it was quite a program. In MacPaint, a small contradiction in names considering you could only "paint" in living black and white, one started to see a certain sophistication in graphic programs emerging. Although now primitive by today's standards, this program had offered a great deal for its time. You could create drawings with the aid of the "bare bones" drawing tools: lines, circles,

rectangles, freehand, etc.

The Macintosh bundled with MacPaint was the market standard for an affordable personal computer based graphic design package. If you wanted great graphics on an affordable personal computer, this was it. Everything MacPaint offered was light years from what had been observed in the past. The tools featured airbrushes, preset fill patterns, and the "zooming-in" feature for doing "detailed work" using what were affectionately referred to as "Fat bits." MacPaint was not quite heaven, but it was the only game in town, and it played a pretty good game.

A factor that may have prevented some people from purchasing a Macintosh, aside from high price, was that it lacked the ability to output colors. Although if one were to have asked Macintosh buyers why they had purchased a computer that was not able to display and output color, their argument might have been that there were no affordable color output devices available to the private individual at the time. This was the case, but Apple has managed to sell a lot of Macintosh computers without the benefit of color, and why, you ask? Because there was a need for it even in black and white, and programs have since reached a level of sophistication that makes color not too essential, but then it's always nice to be able to make the decision for yourself.

PATIENCE IS A VIRTUE...

There is an old proverb that goes: "All good things come to those who wait," well you had better believe it because if you purchased that 128K Macintosh bundled with MacWrite and MacPaint, it would have been a few years "Maclater" before you would have been able to afford to own an Amiga 1000.

The arrival of the Amiga 1000, "the first computer for the rest of the rest of us," marked the beginning of the affordable color graphic personal computer. What may have sold many on the Amiga PC, was a glance at the premiere issue of AmigaWorld magazine. Upon

leafing through that first issue at the newsstand, one could see that apart from the Amiga's other abilities, this was THE personal graphics computer. Among the first examples of Amiga graphics displayed were those showcased in the "Digital Canvas" section. It featured some of the works of Jack Haeger, the Director of Amiga's Art and Graphics Department. The images were quite impressive and gave a good indication of the shape of things to come.

GRAPHICRAFT, THE GREAT BEGINNING...

Initially, the only Amiga paint program available was Graphicraft; but this was a program that was superior to MacPaint in a few areas. Graphicraft offered all the essential drawing tools but one major advantage over MacPaint was that over 4096 colors were available. These colors could also be altered at any time, affording the user the ability to experiment with various colors even after the image had been created. This is a twist that Apple is only now offering, as an option on their "flagship" system, the Mac II. It is true that Graphicraft can be deemed simplistic by today's standards, but it was the first in a long line of graphic programs for the Amiga.

OUTPUT DEVICES, OR GETTING THE BIG PICTURE...

The Amiga has superb graphics but what use are screen graphics unless you can output them, or display them to the outside world. Until recently, output devices capable of doing justice to the Amiga were few and far between. The main problem was always duplicating the 4096 colors that the Amiga was capable of outputting. Color output devices were initially approached from three different directions: color dot-matrix, ink-jet, and thermal transfer.

DOT-MATRIX printers use multi-colored ribbons with four different layers of colors. With these four "base" colors, they are able to output a fair number of colors.

INK JET printers give amongst the best outputs but often require a special "clay coated" paper for the best results.

THERMAL TRANSFER printers

employ a plastic-like polymer-based ribbon that essentially melts the plastic ink onto the paper. Presently, thermal transfer printers have been the most successful as far as outputting color images is concerned.

At the time of the Amiga's release, unless you had several thousands of dollars available for a high-end color thermal transfer printer, and were willing to write a driver for it, you were out of luck. Initially there were a few low cost alternatives; in the area of dot-matrix color printers, there was the Epson JX-80, the Juki 5510-Color, Okidata 292, and the Apple Imagewriter II. Another low-cost thermal transfer printer was the Okimate-20 from Okidata, this was a great little color printer for the budget minded, and it gave a more than fair output.

In the area of ink-jet printers, there was the Canon PJ1080A, and the Xerox 4020. The ink-jet entries gave exceptional output and the Xerox 4020 is capable of producing over 4000 colors: perfect for the Amiga, but not inexpensive. There are other types of printers capable of color output, but they are not

"staircase" effect. This is the same situation that occurs with a bit-mapped image, the sheet of graph paper represents the screen and each square on the sheet represents a pixel, the unit of a screen display.

The second type of image format is the "Structured Drawing." A structured drawing program offers artists the ability to create images that when rendered, will be free of the "aliasing" or "staircase" effect associated with bit-mapped images. The reason the output from a structured drawing program is so much "cleaner" and more precise than a bit-mapped image is that structured drawings are composed of elements that are mathematically described; this offers a high degree of accuracy when they are rendered. Output devices for structured drawing programs are usually reserved for high quality or precision output devices such as laser printers and plotters.

AMIGA DISPLAY MODES.

Now that we are familiar with the image formats, let us have a quick look at the Amigas' display modes. The Amiga will display in four modes:

AMIGA DISPLAY MODES

MODE	RESOLUTION	COLORS	OVERSCAN
lo-res	320 x 200	32 or 64	352 (384) x 240
lo-res interlace	320 x 400	32 or 64	352 (384) x 480
hi-res	640 x 200	16	704 (768) x 240
hi-res interlace	640 x 400	16	704 (768) x 480
HAM	320 x 200	4096	352 (384) x 240
HAM interlace	320 x 400	4096	352 (384) x 480

yet available for use with the Amiga.

TYPES OF IMAGES

Let us now discuss the type of graphic image programs that are available to the Amiga user. The most common and well known type of images that can be produced by the Amiga and all personal computers is the "bit-mapped" or "pixelized" graphic image. Bit-mapped images are composed of tiny squares called pixels short for PICTure ELeMents. To have a better idea of what I am talking about, get a sheet of graph paper and attempt to make a diagonal line on it by darkening each square in a diagonal direction and you will observe a

Overscan refers to a screen display that takes up the full screen including the border of the screen that is often blank.

BIT-MAPPED IMAGE PROGRAMS

What is available to the artist? Looking at the list at the end of this feature we observe that the "roll-call" for graphic programs is now extensive, although most are bit-mapped paint programs.

Conventional bit-mapped image programs have come a long way since the introduction of Graphicraft. We now have programs that allow you to draw at very large resolutions, with a myriad number of paint effects that can turn the

user into a veritable Van Gogh. For beginners, straight-forward programs such as Deluxe Paint, or Images from Aegis, are recommended. They are powerful graphic tools, but can also ease the beginner into the world of computer graphics.

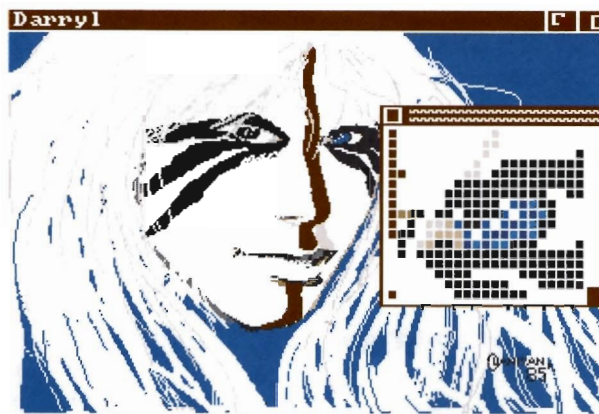
On the high end of the scale, we have Deluxe Paint II and Deluxe PhotoLab, both from Electronic Arts. For the longest of time, Deluxe Paint II was the hands down "king" of the PC paint programs. Early this year Deluxe PhotoLab was introduced, perhaps as a companion to Deluxe Paint II. These two are amongst the most powerful bit-mapped graphic packages available for the Amiga and perhaps for any PC. PhotoLab and Deluxe Paint II allow the user to create images on a bit map that is much larger than the screen, they can both perform perspective fills, and perspective rotation of brushes.

STRUCTURED DRAWING PROGRAMS

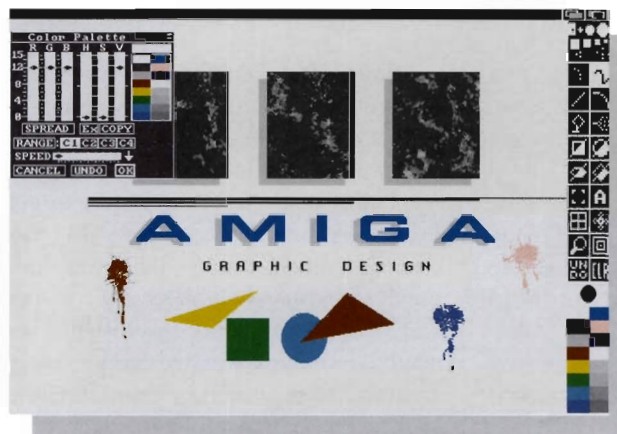
Presently, structured drawing paint programs are in their infancy in the Amiga world, but I have it on good authority that this will change within the next few months. Until these programs are released, structured drawing programs are limited to CAD (Computer Aided Design) programs such as IntroCAD or DrawPlus from Aegis. These programs are very good for the design of logos, clip-art, and if you are quite dedicated, you can attempt more complex images. One should keep in mind that these programs lack the extensive special effects capabilities that are available in many conventional bit-mapped image programs.

As for a program that is a bit more flexible with its structured drawing tools, we have Professional Page; although this is a high-end desktop publisher, it does have structured drawing tools such as, lines, bezier curves, circles, polygons, and free hand drawing. But until an actual structured drawing program is released, CAD programs are your best bet.

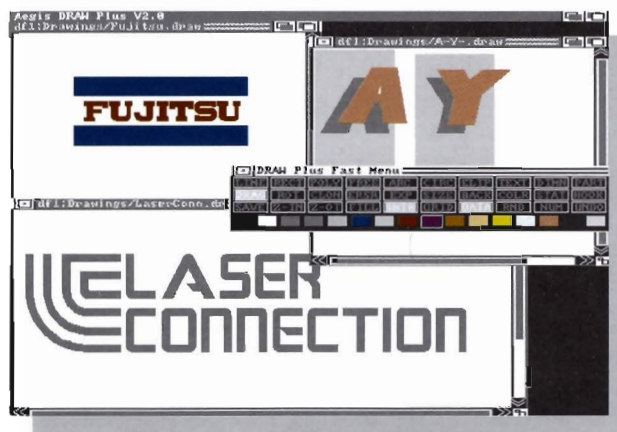
A structured drawing program from Gold Disk that looks very promising is tentatively called Professional Draw (see last issue's Amiga Monitor for



This Image was created many years ago with Graphicraft, the Amiga's answer to MacPaint but with a difference. Although simplistic, this program had its day in the sun.



Deluxe Paint II, one of the most successful bit-mapped paint programs ever created. Deluxe Paint II has an overwhelming arsenal of features and special effects; a very professional program.



Structured drawings created with DrawPlus from Aegis; the Amiga is still lacking in flexible structured drawing programs, but things will soon change.



HAM mode painting with Deluxe PhotoLab. A recent entry into the bit-mapped paint program war, it is an all-in-one program that will paint in any Amiga display mode.

more info on ProDraw). This program is slated for release this fall, and from what was seen at the Chicago Ami-Expo, this may very well be the proverbial "shot in the arm" that Amiga structured drawing programs need. ProDraw will attempt to fill the unoccupied niche of full-featured structured drawing programs with color output. Hopefully, the release of ProDraw will act as the needed catalyst for more programs of the same nature.

HAM WARS...

The most recent area of "battle" is the HAM (Hold And Modify) mode paint program. HAM is a display mode that allows the Amiga to display all 4096 colors of its palette at once. Although HAM paint programs have been available for a while, as was the case with the first standard display mode paint programs, they were not at the level of sophistication of present HAM paint programs. This was quite understandable because this was an as yet unexplored area of the Amiga's capabilities.

One of the first entries in this area was a program called Digi-Paint from NewTek; the perfect companion to Digi-View, the digitizer from the same company. This paint program offered the ability to paint and do a fair amount of image manipulation in the Amiga HAM mode, but the user interface did take some getting used to. Over the years, Digi-Paint has been revised and there has even been an announcement concerning the release of Digi-Paint II. Sporting even more features, Digi-Paint II is rumored to incorporate all the features of the current leading HAM paint programs with a few interesting twists.

Around the same time that Digi-Paint was first introduced, we were introduced to Prism, and its "expansion memory" version, Prism Plus. These programs also offered HAM painting capabilities, with an interface that was very similar to Deluxe Paint. At the time developers appeared to be searching for the proper palette display for all 4096 colors. Over a period of time these programs were updated, but users wanted even more features.

It was at this point in time late last

year that rumors began to circulate about Photon Paint from MicroIllusions. It was touted as the HAM paint program that all others will be judged by. Photon Paint would have the ability to wrap brushes around geometric or free-hand shapes, known as "surface mapping," unheard of on a personal computer. This was a feature that was only available on high-end workstations. These features of Photon Paint open yet another creative avenue for artists. HAM paint programs are now starting to get features that may very well allow them to approach near-photograph quality resolution.

Before Deluxe PhotoLab, there was the problem of insufficient resolution in HAM mode, being limited to 320 x 400. At the time of Photon Paint, the largest resolution that one could expect to get in the HAM mode was 320 x 400 or in overscan mode; this resolution is very good but still not high enough to get that near photo-quality result. Until recently, resolution was the barrier, enter Deluxe PhotoLab; this program has now broken the HAM resolution barrier by allowing the user to draw images on screens that are only limited by the amount of CHIP RAM and FAST RAM available on your system. With an 8 MB Amiga system, you could conceivably create a HAM image with a resolution well over 1500 x 1500 pixels.

WHAT NEXT?

What does the future have in store for the Amiga graphic artist? It's hard to say, but we could do a little speculating. Without a doubt two major demands must be met: the Amiga requires more resolution and with that added resolution, more color. Also needed are better, inexpensive output devices to accommodate this higher resolution and this now increased color capability. There are color thermal transfer printers capable of outputting over 16 million colors, but their prices are almost prohibitive. The Amiga can be used to do pre-production work in the graphic field, and to a certain extent, final art-work.

The Amiga is without peers in the area of affordable graphic power and, in the hands of those that are truly gifted, the Amiga is a force to be reckoned

with. The only real limitation is in the output devices and the imagination of the artist and those that give the electronic artists his or her tools. A word of thanks to all the software developers that have made, and will continue to make the Amiga a creative outlet for those artistic tendencies that we all possess. □

PROGRAMS MENTIONED

PAINT PROGRAMS:

Deluxe Paint
Deluxe Paint II
Deluxe PhotoLab: Paint
Express Paint
Graphicraft
Aegis Images

HAM PAINT PROGRAMS:

Deluxe PhotoLab: Paint
Digi-Paint
Photon Paint
Prism
PrismPlus

IMAGE MANIPULATION PROGRAMS:

PIXmate
Butcher 2.0
DeluxePhotoLab: Colors

STRUCTURED DRAWING PROGRAMS:

Aegis DrawPlus
IntroCAD
Professional Page
Professional Draw (to be released)

PRINTERS:

Epson JX-80
Juki 5510-Color
Okidata 292
Apple Imagewriter II
Okidata Okimate-20
Xerox 4020

GOBBLEDYGOOK GOBBLEDYGOOK GOBBLEDYGOOK

THE MATERIAL PRESENTED HEREIN IS NOT INTENDED TO OFFEND READERS OR SPECIFIC GROUPS. ITS SOLE PURPOSE IS TO BE LUDICROUS, INSANE, AND HUMOROUS. HA, HA!

VIRUS UPDATE

The AmigoTimes staff is still hard at work looking for a cure to disk viruses. We are presently pursuing radiation disk treatments as a possible cure to this yucky problem. At least this way the virus won't be able to mutate into something dangerous.

Our art director has taken up a personal vendetta with this virus problem. The procedure he is following, requires the exposure of infected disks to the full force of phosphorous radiation escaping from his Multi-Stink monitor (a newer brand). The jury is still out on the results, but we shall stop at nothing until we find a cure to this dilemma. Initially, we wanted to radiate the source of all the viruses, ensuring the irradiation of all future disk viruses, but we could not find those responsible for its initial release.

We are also attempting to reverse the infected viruses with magnetic media transplants, whereby unexposed donor disks have parts of their healthy magnetic media removed, which is then media grafted onto virus exposed magnetic media. The procedure is somewhat messy, but the results are encouraging; previously sick disks are presently in virus collapse.

FLIGHT, FIGHT OR JUST "WAY OUT OF SIGHT"

Have you bought any of those great Amiga flight simulators yet? We have and we usually receive them by courier. When we spot a courier truck driving into our parking lot, we go through our routine: faces pressed against the windows, trying to make out what is arriving. As soon as the courier leaves, we fight over the rights to rip open the parcel.

During one of these episodes, we received a flight simulator software package stating "A review of this product should be done by an instrument rated pilot of your choice!" Our first reaction: we looked at each other with blank, droopy faces and raised eyebrows, then we panicked.

So we haven't as yet been able to open the box and it's presently collecting dust. In the meantime, our resident flight simulator pilot, Michael Hermann (who took an F-18 for a spin last issue), has whisked off to a nearby flying school. He should have his pilot's license in no time flat. I mean, here's a guy with about a zillion flight hours on an F-18, most of it in the office with the volume on full. Of course, he justifies this by saying: "I have to get a feel for the plane's characteristics and flight behavior before I write about it." Well now he's flying around in a plane, probably teaching his flight instructor some of those wild combat maneuvers he learned using the F-18 fighter simulator.

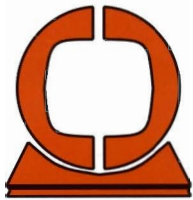
Apparently, some unfriendly nations are closely eyeing Amiga flight simulators, while planning some interesting

uses for them, i.e. low-cost training for their fighter pilots. Some of these unmentionable countries are presently purchasing dozens of A-500's, and A-2000's for the high-end power users, and a variety of flight simulator software packages, whose creators are probably smoking fat cigars in over-priced beach front condos; are ready to make all sorts of discounts for cash sales. These above unmentionable countries have their representatives trying to throw the scent off their suspicious trail by also buying word-processors, and grammar and spelling-checkers. Come on guys, even Inspector Clouseau can see through that one!

NEW PRODUCTS

Now on a more serious note (D-minor), to accompany their upcoming support hardware for the Video Toaster from New Tek, a company called Now Tack will be releasing their line of video cookware; peripherals and tentative names will include, Video Microwave, Video Moulinette, and the Video Cuisinart. All peripherals come with cook books and appropriate software or semi-software, batteries not included.

Until next time, yours truly will attempt to answer thought provoking questions like what makes the teflon stick to the pan, or if your legs bent in the other direction, what would a chair look like, and why don't Macs multi-task, I mean really multi-task. □



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ADVENTURE CONSTRUCTION SET
ADVENTURES OF SINBAD
AEGIS ANIMATOR
AEGIS ART PAK#1-CLIP ART
AEGIS DRAW
AEGIS IMAGES-PAINT
AESOP'S FABLES
AIRT SYMBOLIC LANGUAGE
ALGEBRA I
ALGEBRA II
ALIEN FIRES
ALL ABOUT AMERICA
ALOHA FONTS
ALOHA FONTS 2
ALOHA FONTS 3
ALTERNATE REALITY
AMEGAS
AMIGA DOS EXPRESS
AMIGA EDITOR
AMIGA KARATE
AMIGA KERMIT
ANALYTIC ART-GRAPHICS
ANALYZE 2.0-SPREADSHEET
ANIMAL KINGDOM
ANIMATE-3D
ANIMATION EFFECTS
ANIMATION STAND
ANIMATOR FLIPPER
ANIMATOR JR.
ANIMATOR'S APPRENTICE
ARAZOK'S TOMB
ARCADE ACTION PACK
ARCTIC FOX 1.2
ARENA
AREXX
ARKANOID
ART COMPANION
ART GALLERY FANTASY
ART GALLERY I
ART GALLERY II
ART OF CHESS. THE
ART PARTS #2
ASHA'S FONTS
ASSEMBRO
AUDIO MASTER
AZTEC 68/AM-D
AZTEC C PROFESSIONAL
B.E.S.T. BUSINESS MGMT.
BALANCE OF POWER
BALLYHOO
BARBARIAN
BARD'S TALE
BARD'S TALE CLUE BOOK
BARD'S TALE II
BASIC GRAMMER SERIES
BBS-PC

BECKER TEXT
BENCHMARK C LIBRARY
BENCHMARK IFF LIBRARY
BENCHMARK MODULA-2
BENCHMARK SIMPLE LIBRARY
BEYOND ZORK
BIG PICTURE OKIMATE
BLACK CAULDRON
BLACK JACK ACADEMY
BLITZKRIEG AT ARDENNES
BLOCKBUSTER
BOMB BUSTER
BORROWED TIME-TEXT ADVNTR
BREACH
BREACH SCENARIO DISK
BRIDGE 4.0-CARD GAME
BRIDGE 5.0
BRUSH WORKS
BRUSH WORKS 2
BUMPER STICKER MAKER
BUREAUCRACY
BUTCHER 2.0
BUTTON AND BADGE MAKER
C-ZAR
C.A.P.E. 68K ASSEMBLER
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CAMBRIDGE LISP
CAPITALIZATION SERIES
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CENTERFOLD SQUARES
CHALLENGER
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CHAMPIONSHIP BASKETBALL
CHAMPIONSHIP FOOTBALL
CHAMPIONSHIP GOLF
CHESSMASTER 2000
CHESSMATE
CHICKEN LITTLE
CITY DEFENSE
CITY DESK
CITY DESK ART COMPANION
CLI MATE
CLIP ART #1
CLIP ART #2
CLIP ART #3
CLIP ART #4
CLIP ART #5
CLIP ART #6
COMICS ON DISK
COMPUTER BASEBALL
CRAPS ACADEMY
CRAZY CARS
CRIMSON CROWN
CRITICS CHOICE
CROSSWORD CREATOR
CRYSTAL HAMMER
CUBEMASTER
CUSTOMS SCREENS
DARK CASTLE
DATA RETRIEVE
DEATH SWORD
DECIMAL DUNGEON
DEEP SPACE
DEFCON 5
DEFENDER OF THE CROWN
DEJA VU

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DELUXE HELP FOR DIGIPAIN
DELUXE HELP FOR DPAIN II
DELUXE HELP FOR PHOTON
DELUXE MAPS
DELUXE MUSIC 2.0
DELUXE PAINT II
DELUXE PHOTO LAB
DELUXE PRINT + ART DISK
DELUXE PRINT ART DISK #2
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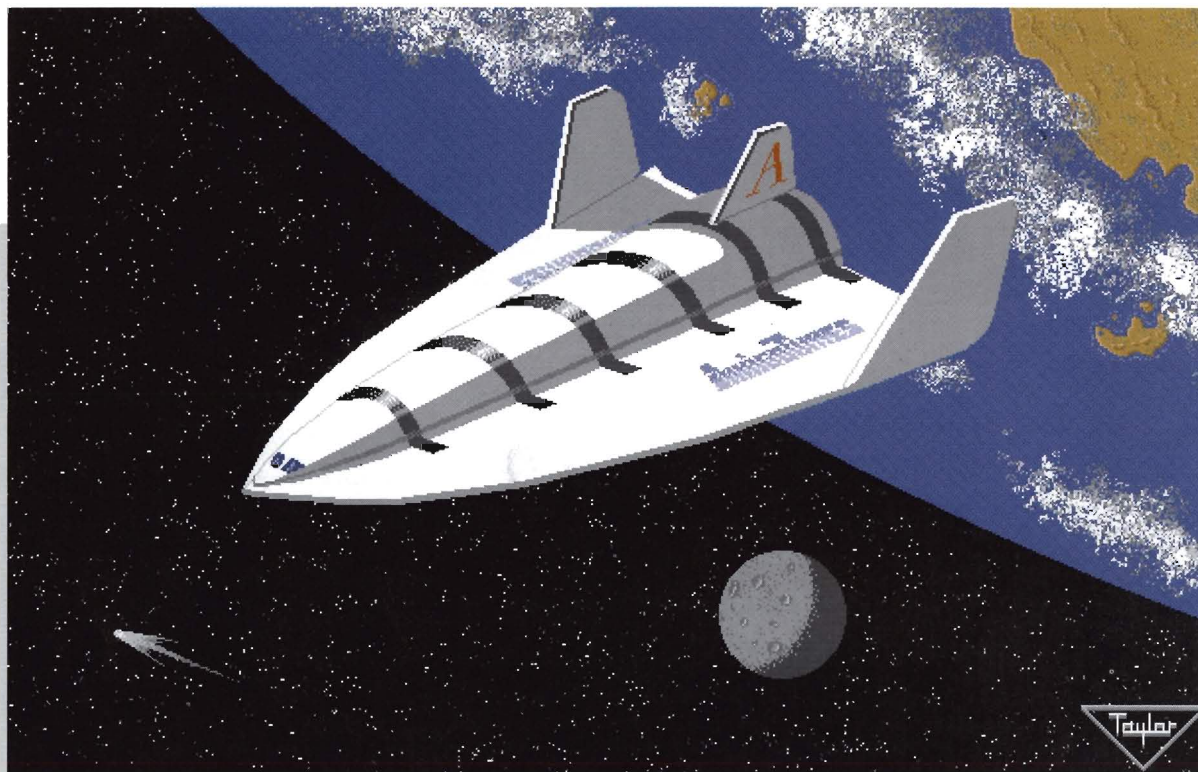
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* AMIGOTIMES * IMAGE CONTEST * WINNERS *



First Prize Winner

"AmigoShuttle" by Becky Taylor
Rendered with Deluxe Paint II

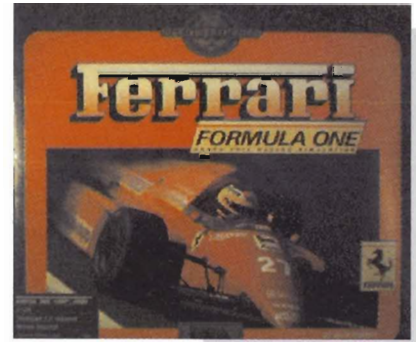
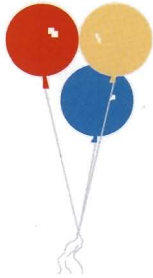


1st Prize Telecommunication System
Avatex 1200 E Modem
Dr. Term Professional by Progressive Peripherals & Softwares Inc.



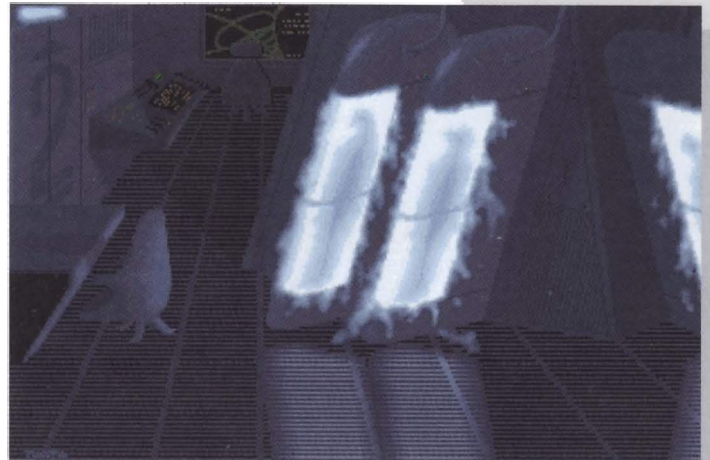
Second Prize Winner

"Space Ship" by Curtis Ratica



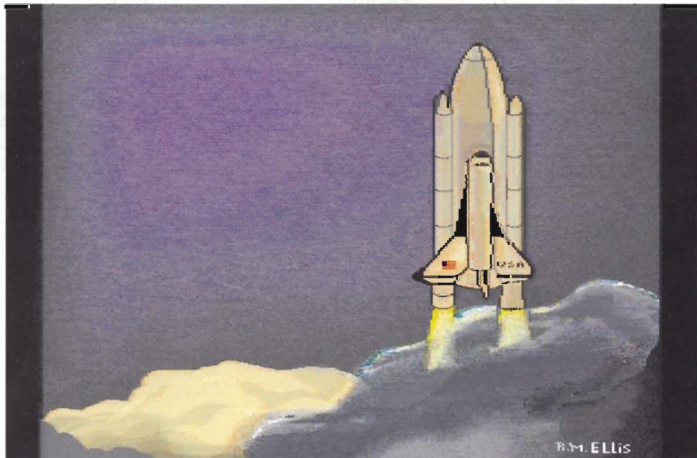
2nd Prize

Ferrari Formula I by Electronic Arts



Second Prize Winner

"Suspended Animation" by Paul Tawa
Rendered with Deluxe Paint II



Second Prize Winner

"Columbia" by R. M. Ellis



3rd Prize

A six (6) month subscription to: **AmigoTimes**

Richard A. Dorsino
D. J. Baracskey II
Michel Feugeas
Denis Barsalo
Daniel Vinet

The AmigoTimes staff would like to thank all those Amiga artists that took part in this contest. Unfortunately we were not able to show all of the entries, but from time to time they may be shown in our Art Gallery. At this time we would also like to remind all those Amiga animators that they can display their talents in our Animation Contest.



AMIGOTIMES

ANIMATION CONTEST



Due to the favorable response to our last contest, AmigoTimes is holding an Animation contest. The topic for all entries will be left open to the artist/ animator. **PRIZES:**

First prize: One (1) Image Capture System from NewTek

Digi-View 3.0 from New-Tek
Panasonic WV-1410 Video Camera
Total retail value: US \$499.95

Second prizes: Three (3) Rocket Ranger by Cinemaware

Total retail value: US \$49.95(each) Software package

Third prizes: Five (5) Six month subscriptions to AmigoTimes

Total retail value: US \$41.70(each)



AMIGOTIMES "AMIGA ANIMATION CONTEST" RULES:

- To enter contest, complete an Official Entry Form and mail it to:

AMIGOTIMES

Amiga Image Contest, P.O. Box 1228
Ville St.Catherine, Quebec, J0L 1E0
CANADA

- Photocopied or hand drawn entry forms are eligible.
- Enter as many images as you wish.
- All submitted art work must be original.
- The use of digitizers is permitted, but no digitized photos please.
- Pictures can be in any IFF format or HAM mode.
- All images must be presented on a 3.5" disk.
- Images must include an explanation of how the image was created along with a list of products used.
- Entries received must be post dated no later than midnight December 1st, 1988.

- Entries are judged by the **AMIGOTIMES** Staff whose decisions are final.
- Contest results will be published in the January Issue. Winners will be notified by mail.
- All prizes will be awarded on December 25th, 1988.
- Contest is not open to AmigoTimes staff members or their families.
- Any inquiries regarding the legitimacy of the contest, and or the awarding of prizes should be directed to the: Regie des Loteries et Courses du Quebec
- For a list of prize winners, or additional copies of contest rules, send a self-addressed, stamped envelope to:

AMIGOTIMES, Animation Contest Winner List
P.O. Box 1228 Ville St.Catherine
Quebec, J0L 1E0
CANADA

AMIGOTIMES ANIMATION CONTEST ENTRY FORM

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City

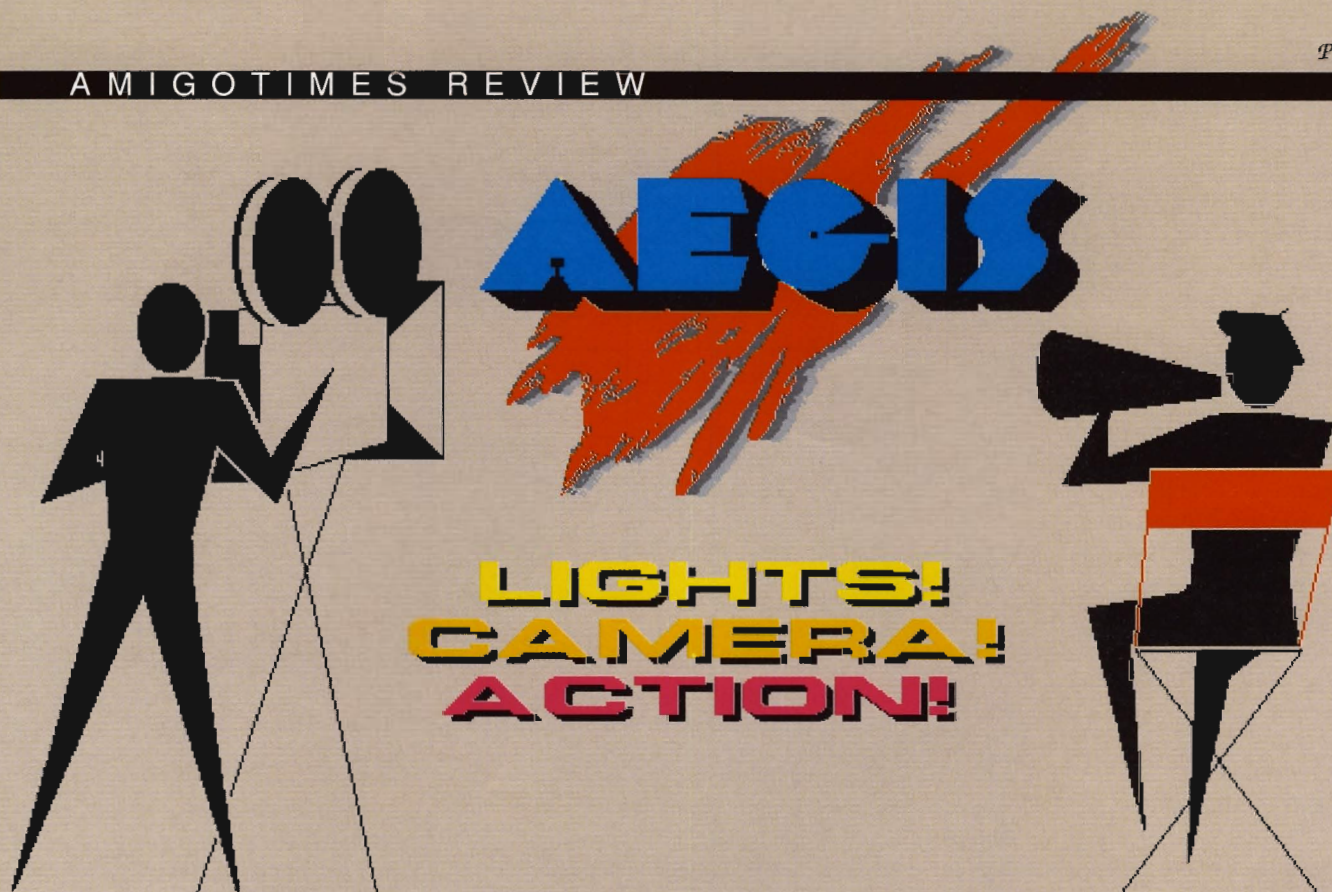
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All submitted entries become the property of AmigoTimes. AmigoTimes reserves the right to use and/or redistribute all entries as public domain.



WHY DESKTOP PRESENTATION?

Desktop Presentation, everybody keeps hearing about it but many aren't exactly sure as to what it is. Most everyone has heard about Desktop Publishing (DTP) and how the revolution started because of the Macintosh PC.

Living in a visually-oriented society, we are constantly inundated by visual input from all directions. Advertisers, in an attempt to woo our purchasing dollars, attack us from our most widely used sense, sight. Until something better comes along, television is our number one source of information. With television as our most popular source of information, if one wishes to catch the ever-roving eye of the public, a visually-oriented approach should be implemented. In order to have access to the largest number of people at one specific time, a marketing strategy that employs visual presentations is an excellent approach; enter the world of Desktop Video.

Desktop Video (DTV) can be applied to the many facets of the marketing industry, whether it be video dating

services, real estate sales, home shopping, business presentations, or corporate training films. Now some of you out there might be saying that this is all well and good, but how can a small company or an individual prepare professional looking desktop presentations on a limited budget? The answer is simple; where the Mac is for the time being, the leader in the area of desktop publishing, the Amiga, in the opinion of many, now holds the title as the king of affordable DTV. In fact, outside of high-end systems or dedicated workstations, the Amiga has little competition and even fewer peers in this continuously growing market.

Lights! Camera! Action! (LCA) from Aegis Development is the latest entry, and is one of the many affordable Amiga solutions in the ever increasing Amiga DTV market. This program will enable you to combine IFF pictures, ANIM format animations, and IFF sampled sounds or Aegis Sonix instruments and scores. Musical scores and audio special effects can be added to your

By Olusegun Olaniyan

desktop presentations. Also available are numerous transition effects that can be used when sequencing graphics and animation. Transition effects include Wipes in 9 directions, Flips, Fades, Dissolves, Collapse, Diagonals, Diamonds, Scroll Bottom, and Scroll Center. Multiple block effects include, Checker, Random, Dribble, Wipe up or Wipe down, Zig Zag, Spiral in or out, Burst, and Wrap.

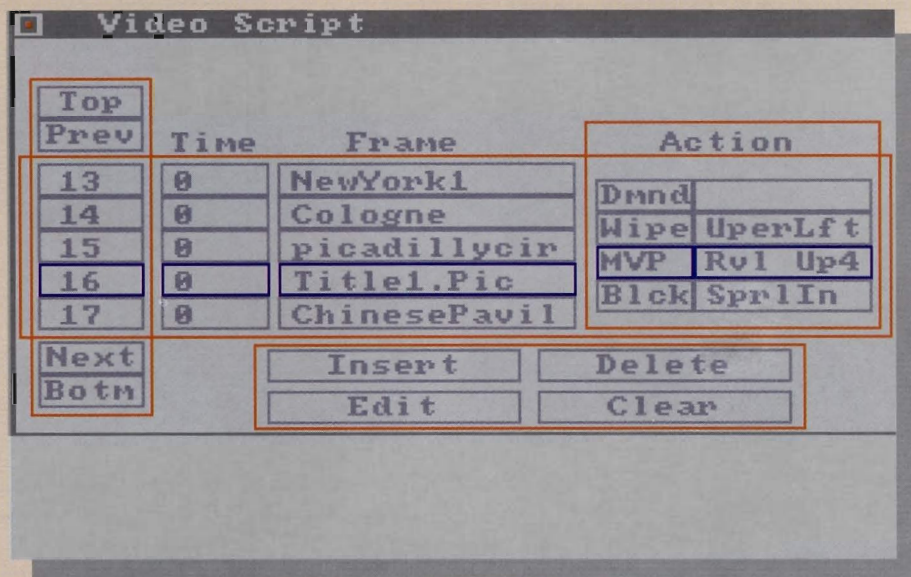
Presentations can be done in any of the numerous Amiga display modes, including extreme overscan for obtaining professional results when recording directly onto videotape. You also have full control over playback; you have the option of manual, single, or looping playback modes. You can control the timing of frames, music, and animations.

DESKTOP VIDEO...

In this day and age of DTV, the Amiga can stand extremely well on its own. It offers all the features of high-end video industry machinery at a fraction of the cost. With the right software and hardware, entering the world of DTV is made that much easier. As the latest entry into DTV, LCA can let even the beginner obtain semi-professional if not professional results. LCA attempts to be a powerful yet straight-forward program while remaining relatively user-friendly; whether this is the case, we shall see.

The packaging for LCA is very simple; the box contains the manual, the registration card, and two disks. The requirements for LCA are few: two disk drives, a minimum of 1 MB of memory and version 1.2 of both Kickstart and Workbench. The manual is laid out accordingly, complete with a table of contents and an index. The one fault with the manual is that there were not enough diagrams or illustrations to better clarify some of the functions and topics mentioned.

The two disks consist of the main program disk which contains GrabANIM and ShowLCA; the former is a utility program that lets you create ANIM-style animations by grabbing screens from any virtually any Amiga program, the latter is a presentation module that



The Video Script requester allows the user to edit and co-ordinate frames. Although needing more editing features, it allows for quick frame by frame set-ups.

allows you to assemble a disk with a completed presentation and run the script without the LCA program. The second disk is a data disk which contains sample scripts, animations, and the various support files.

To familiarize yourself with LCA, there are two sample files included with the program, one still picture travelogue script employing different transitions, and one animation script. As a beginner, I recommend that you closely follow the tutorial described in the manual. This will help to give you an idea of how the scripts are set up; loading images into scripts, musical scores, timing, etc. The step-by-step instructions make it simple to create a sample script complete with soundtrack and scrolling still images.

CREATING YOUR OWN SCRIPTS

Presentations are created by specifically defining "Video Script" and "Frame Specs" requestors for each occurring sequence of your video presentation. Scripts are created with the "Video Script" requester; here you have access to the frame list and the buttons controlling the list. The list has four columns, the "frame number," the "Time" that the frame will be displayed, the "Frame" which is the filename of the picture or animation that is to be displayed, and the "Action" describing the action or transition which is to occur between

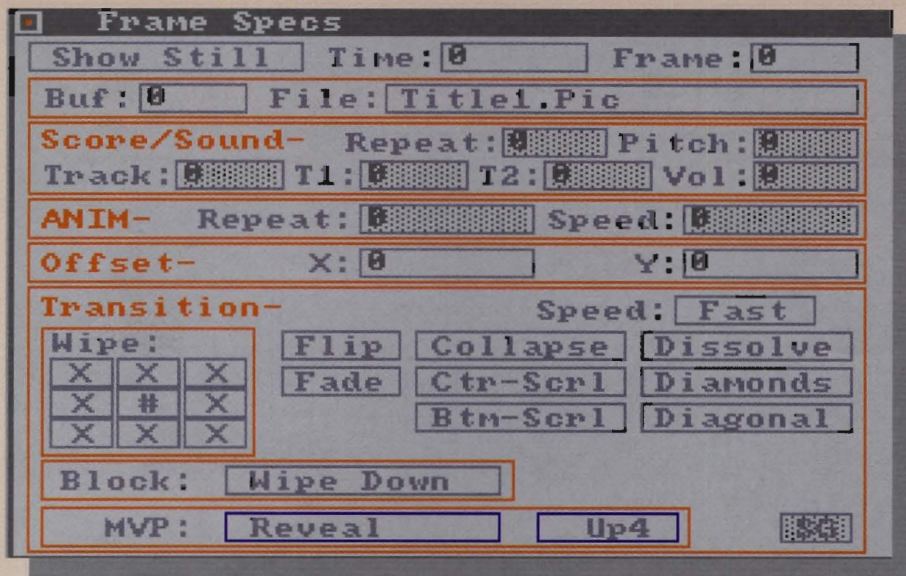
frames.

Frames can be inserted, deleted, or edited. When a Frame is selected and the "Edit" mode selected, you have access to the "Frame Specs" requester. This requester has two main areas, the top area is for indicating what sort of action that is to occur i.e. load a still picture or a musical score, and the bottom half for describing the type of transition that occurs before the action is to take place.

When loading images, normally one should take into account the time that is necessary to load these images, therefore if one is doing a time critical animation that involves several still images, the loading time can be a problem. LCA has an excellent solution to this problem, both pictures and ANIMs can be loaded into memory prior to the time that they are to be displayed. These "slots" in memory are called buffers. LCA allows up to 100 buffers (0-99), however, the actual number of active buffers is limited to system memory.

ADDING SOUND

The addition of sounds to your presentations is no major task with LCA; as with images, playing soundtracks involves loading the sounds into specific buffers. Unlike images which can be loaded into a buffer or read from disk during a script, musical scores must be loaded into a buffer beforehand. A



The Frame Specs requester allows the user to accomplish some very professional looking special effects, wipes, dissolves etc. These effects are just a mouse-click away.

choice of four tracks to play each sound means you can load a different instrument into each of four separate buffers and have them all play at once using four separate "Play Sound" commands in your scripts. Tracks 1 and 2 are the two left channels, 3 and 4 are the right channels. Both the Pitch and Volume for scores can be controlled from within the program. For the time being, LCA will only support soundtracks that use the SMUS format as generated by Aegis Sonix.

ANIMATIONS

One interesting feature of LCA is the manner in which it deals with animations. For example, you can create a very large ANIM file (300 frames max.), that extends over several disks by using the GrabANIM utility. Then selecting the "Append Buf" option allows you to create one large continuous animation by breaking the frames into three 100 frame parts. You can load the first file into a specific buffer, the next two files are loaded into the same buffer employing the "Append Buffer" command. Now using "Play ANIM" with the proper buffer number, you can play back your big ANIM in its entirety. Keep in mind that when "Append Buffer" is used, it will ignore the first two frames of the file, therefore make sure that the last two frames of the preceding file is identical to the first two

frames of any subsequent files. As with still images, transitions like fades, dissolves, or wipes can also be performed for animations.

GENLOCK

LCA also comes complete with software control for the SuperGen genlock from Digital Creations. To use the genlock, two library files must be installed into LCA's Libs directory. LCA commands can have commands attached to them that key the SuperGen genlock; the mix between computer graphics and external video can be controlled. Since a SuperGen was not available to me, this feature could not be tested.

GRABANIM

GrabANIM is one of the utilities included with LCA. GrabANIM can be described as a "neat" little utility for doing worry free scrolling. With GrabANIM you could scroll text created with Deluxe Paint, cut that text out as a brush, then save screens successively with GrabANIM while moving the brush. The result is an ANIM file with text that moves on the screen. This might sound like an extremely simplistic way of scrolling text, but it is effective. Other types of animations can also be done, some more complex than others.

IN CONCLUSION...

The faults of LCA are few, but the faults that are present can be annoying. The first, and probably the main problem, that you will run into is the that "Video Script" requester apart from delete, has no edit features; it would be nice to have some sort of copy, cut, and paste feature. This could facilitate the moving around of "Frame Specs," as opposed to having to set up the same commands over and over again. On the plus side, one of the interesting features of LCA is its "sleep" mode; when this is selected from the main menu, LCA closes down, but is still kept running in memory. To re-activate LCA, simply click on the close gadget. This feature functions similar to a public domain program called wiconify; it is extremely handy, and it would be nice to see more programs set up in this manner.

LCA can be described as an excellent product for the beginner entering the world of DTV presentation. You should be able to obtain surprisingly professional results without too much effort. As a note I would recommend having 2 megabytes or more of memory if you plan to work with very large animations, otherwise the minimum 1 megabyte requirement will suffice. □

Lights! Camera! Action!

Aegis Development Inc.

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Santa Monica, CA 90405

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(213) 392-9972

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Not copy-protected

1 MB Required



T This column is geared for beginner-level Amiga telecomm users. These first few installments will cover aspects of telecommunication for the novice. Future chapters will delve into the more esoteric aspects of "life on-line" but we're going to take this slowly, one step at a time. Many of the programs and utilities discussed in this column will be included on the AmigoTimes disk that came packed with your magazine. All of these programs are freely redistributable, although some may be "shareware" which means the author of the program requests a small contribution from you if you use the program.

I'll try my best to go easy on you and not ask you to try out utilities that have not yet appeared on your AmigoTimes disks.

Last month, I discussed a typical scenario of logging onto your first Bulletin Board. Did you make it okay? Hopefully you didn't have any major

difficulties. Depending on where you live and the boards available to you locally, your first call might have even resulted in your trying a couple of downloads. If so, congratulations - you've tapped into a potential resource that will reward you with literally thousands of programs and files for your Amiga for nothing more than the cost of a phone call. Beware! Like I said it's easy to become addicted!

IS TELECOMM ONLY FOR EXPERTS? NO!

Although I've seen literally dozens of books which teach Lotus 1-2-3 or WordPerfect, I can't remember a single good book which teaches basic telecommunications. The company from whom you bought your computer will give you a Disk Operating System, maybe a rudimentary word processor (like Amiga's "Notepad"), maybe even a simple paint or drawing program, but rarely will they include a terminal program and down-

By Harv Laser

loading tutorials with your computer purchase.

Telecommunications is considered by many to be an expert field which requires vast knowledge of all kinds of esoteric topics and memorization of lists of obscure parameters. To begin downloading from a BBS using your Amiga you only need to keep a few things in mind, everything else is fairly automatic.

When you want to transfer a file from a BBS or host system to your Amiga, and that file is not ASCII text (human-readable letters and words like what you're reading now), you need to use a "file transfer protocol" to move the file (download it) to your computer. Although there are many protocols in use, the single most popular is Xmodem, a public domain protocol invented years ago by Ward Christensen. Most other protocols are enhanced variations of Xmodem. Xmodem allows "binary" files, such as programs, pictures, sounds, and others to be transferred from one computer to another. Binary files are not human-readable, but they are machine-readable. Your computer knows what to do with a binary file. It loads it and runs it, if it's a program, or can display it, if it's a picture, or can play it, if it's an animation or a piece of music.

Xmodem is run by both the BBS and your computer. The two machines "handshake" with each other (they agree on who is sending and who is receiving) and the file moves from the BBS to your Amiga one "block" at a time until the entire file has been received. Xmodem is an "error-correcting" protocol. Without getting too technical, all this means is that as the BBS sends data to your Amiga using Xmodem, with each block of data it sends a checksum. As your Amiga receives the block and the checksum, it tells the BBS what the checksum was. If the BBS says "aha! That's the right checksum, here comes the next block" you continue along. If the BBS says "uh-oh, that was the wrong checksum, I'm going to send you that block of data again" that's what happens. In this way you are sure to be receiving exactly the same bytes that the BBS is sending.

After the last block the BBS tells your Amiga "okay, that's the last block, you can stop receiving now" and your Amiga finishes writing the file to your disk.

WHY ARE FILES COMPRESSED?

In your BBS travels, once you've discovered the "Joy of Downloading" you're going to be faced with some new puzzles to solve. The majority of files and programs found on BBSs and commercial computer networks are compressed. After downloading these files you will need to de-compress them before you can use them. Why is this done? Basically for two reasons:

Compressing files, using one of many available utilities, makes files smaller. They take up less space on the BBS' disk, and since they're smaller, less time is required to upload and download. Compressing files also allows multiple related files to be put together in one file, such as a program, some documentation for it, a Work-Bench icon for it, and sometimes even the source code in the language in which a program was written.

Compressing a group of related files this way actually makes it easier on you, since you only need to download one file instead of 4 or even 40 to get a program and all of its related "pieces."

Your job as the downloader is to recognize what kind of compression was used on the file so you will know what decompressing "tool" to use on it once you have captured it to your disk. The key to knowing what was used to compress a file, and what you have to do to decompress it is the filename extension.

This is not a difficult subject to understand but it's where a lot of beginning modem users get stuck. Keep in mind that every BBS you ever log onto has a Sysop (System Operator) who either owns or takes care of the board, and will answer your questions, usually in as much detail as it takes to get you started, so if I don't go into excruciating detail on every aspect of decompressing files in this column, ask your BBS sysop or the Telecomm expert of your user group for further help, or you can write to me in care of this magazine or

at one my network addresses and I'll be glad to give you more detailed assistance.

MEET THE COMPRESSION TEAM: ARC, ZOO, and PAK

There have been many methods of file compression since microcomputers first became popular. What you need to know right now is what is commonly being used on Amiga files and what you're supposed to do about it, so I'll skip the history lesson.

The single most common and popular current method of compressing Amiga files for modem transfer is a program called "ARC." ARC was originally written for IBM-PCs and compatibles by System Enhancement Associates (SEA) and later ported to the Amiga by Raymond S. Brand. The most recently released version of ARC for the Amiga is version 0.23.

Since it is a port of a PC program, ARC has some special limitations that other Amiga file compressors do not have. Since ARC was the first "important" file compressor on the Amiga it's also been around longer and more heavily used and so there are more ARC files out there than any other kind.

When you're combing through your local BBS' library for files to download you'll see many files listed with strange or unfamiliar file extensions, that is, there will be a filename, followed by a period, and then usually a three letter extension such as FANCY.ARC. This is also a carryover from the PC world. On an IBM-PC the file extension is actually required so PC-DOS, the IBM's disk operating system, will know what kind of file is on a disk.

On the Amiga, files generally don't have extensions. With some exceptions, you can usually name an Amiga file anything you want to, no matter what kind of file it is. A filename on an IBM can be no longer than 8 characters, followed by a period, followed by a 3 character extension, such as 12345678.COM. With AmigaDOS, a file can have a name up to thirty characters long! For instance as I write this column I'm saving it to disk in a file I called "ATimes-Telecomm.080188". So you can see the Amiga has the possibil-

ity for very informative filenames, where the IBM machines are much more restrictive.

Let's go back to ARC. Since ARC is ported over from the IBM world, when an ARC file is built for uploading, all the files that are put into the ARChive must have names no longer than the standard IBM way of naming files. When you download an ARC file from a BBS, you will use the ARC program to de-compress it; think of an ARC file as a package holding one or more items inside of it. You can't eat the cookies or wear the shoes until you take them out of the package. You can't use ARCD software until you deARC the downloaded file.

A SAMPLE DE-ARCING SESSION

Suppose you see a file on a BBS you want to download. The file is described as a neat new game with a filename of "FUNBLOBS.ARC" so you tell the BBS to begin sending you the file, and you tell your terminal program to start receiving "FUNBLOBS" to your disk drive using the Xmodem protocol.

After a while the download finishes. You log off the BBS, flip to your CLI window and try to deARC the FUNBLOBS file. You get back an error message: "Cannot read ARChive funblobs." Well why not? Although FUNBLOBS is a legitimate ARC'd file, in order to deARC it, it must have the ".ARC" filename extension on your disk. Like I said, ARC is picky. Just use the AmigaDOS rename command to

```
RENAME FUNBLOBS TO FUNBLOBS.ARC
```

Now try to deARC it again. At your CLI prompt type either

```
ARC E FUNBLOBS or
ARC E FUNBLOBS.ARC
```

Either will work. The file will now deARC properly. The filename extension of ".ARC" must be there although you don't need to type it for ARC to do its job.

As ARC decompresses the file it tells you what it is doing in your CLI window. You'll see the names of the files being deARCD. Once ARC is done,

your CLI prompt returns. The first thing you should look for is a file named something like "READ.ME" or "README" or maybe even "README.FIRST!" This will be a text file that explains to you something important about what you have just downloaded. It can be TYPED to your CLI or read with an ASCII text viewer like Blitz or More or many others.

There might also be a file in the ARChive called "EXECUTE.ME". Usually a script file is built by the person who made the ARChive - most often this is done due to ARC's short filename restriction. Long Amiga type filenames might have had to be shortened before they could be put into an ARC file. An EXECUTE.ME file could be a

You can't eat the cookies or wear the shoes until you take them out of the package. You can't use ARCD software until you deARC the downloaded file.

script which will rename the files back to their original long names.

It's always a good idea to TYPE out an EXECUTE.ME file to see exactly what it is going to do before you use the EXECUTE command to make it happen. A dishonest person could upload a file with an EXECUTE.ME script that will format your WorkBench disk! Usually these kinds of things are caught first by BBS Sysops who will not approve nasty files like this for downloading. If you catch an EXECUTE.ME file that's possibly harmful alert the Sysop of the BBS where you found it. It's just a good, safe, cautionary measure to be aware of what an EXECUTE.ME file is going to do before you use it.

Now you've deARCD the download, you have a bunch of new files,

maybe some programs, an icon, some pictures, and so on. You can now copy these files to your other disks, or to a hard drive directory. Look for a file with an extension called ".DOC" as this is normally documentation for whatever program you have just downloaded. If .DOC is a long file you might want to print it out and read it before you use your new programs. If you've downloaded some pictures, .DOC may tell you if you need any special viewers or other software to see the pictures, or it may tell you the name of the person who created the pictures. Documentation is important, and someone took a while to write the file so do yourself a favor and read it.

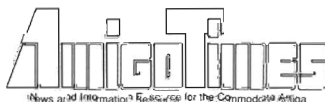
But what do you do with the .ARC file you downloaded? It's still on your disk. Well you can do pretty much whatever you want to with it. Most people delete the original .ARC files they downloaded. You may want to save all your .ARC files on a separate disk in case you wish to upload them to another BBS yourself, or just to keep a backup copy. You can deARC an .ARC file as many times as you want. It's a convenient way to store files that you've downloaded.

After you've gained experience using ARC to decompress your downloads you might want to try using it to build your own ARC files for uploading. ARC's documentation will explain how this is done. Building an ARC file is slightly more complicated than deARCing one. At any time you can also type ARC [return] all by itself at your CLI prompt and ARC will give you a template of instructions for its various functions.

OTHER WAYS TO DECOMPRESS AN .ARC FILE

Besides ARC there are two other programs that will decompress an .ARC file. One is called UNARC, written by Dan James (DJJAMES on People/Link). It's a smaller program whose only purpose is to deARC files. The other is PKAX written by Phil Katz. It too only deARCs files but is very fast, about twice as fast as UNARC or ARC. UNARC is free public domain. PKAX is shareware, and the author requests a

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The available disks vary in content. The contents range from Utilities to Slideshows; Animations, Communications utilities, Music, Games, Tutorials, and Fonts.

To aid you in your selections, a Catalog Disk is available from **AmigoTimes**. A printed catalog will also accompany each order.

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P.O. Box 1158
Champlain, NY 12919-1158
USA

donation if you use the program. Type PKAX by itself from your CLI for more information.

A good idea is to put ARC, UNARC or PKAX into your SYS:C directory where all your other AmigaDOS commands live. This makes a program a command, and it will work no matter which disk or directory on your system you have made the Current Directory with the CD command. Have you customized your WorkBench disk yet? This is really a topic for a CLI tutorial: which files to keep on your WorkBench and which you can safely delete. You may wish to look for a new book by Robert Peck called "The Amiga Companion" which has a chapter describing exactly this subject.

All three of these programs: ARC, UNARC and PKAX will decompress ARC files and put the resulting new files in your Current Directory. A typical deARCing session if you have two disk drives (DF0: and DF1:) would be:

1) Copy ARC to your SYS:C directory where it becomes a command. (Make sure you have enough disk space!)

2) Download a file from a BBS to your RAM: disk or DF1:, in this case we'll use RAM:. You download a file called PICTURES.ARC.

3) After the download finishes you log off the BBS. You now want to deARC the download to the disk in DF1: so you type

```
CD DF1: [return]
ARC E RAM:PICTURES [return]
```

As the file in RAM: decompresses ARC tells you what files you are being written to the disk in DF1: and you may see something in your CLI such as:

```
Extracting file: READ.ME
UnSqueezing file: Picture.1
UnSqueezing file: Picture.2
Extracting file: EXECUTE.ME
Extracting file: Pictures.Doc
```

You now have five new files on DF1:. Delete PICTURES.ARC from

RAM: if you want to or copy it to another disk if you'd like to save it. Remember, it's just the package and you've taken the cookies out of it. Unlike a package of cookies though, you can take the files out of an ARChive again and again.

Type out the Read.me file to see what it says, then type out EXECUTE.ME as well. By reading EXECUTE.ME you see that it's a script file which will rename Picture.1 and Picture.2 to longer Amiga-style filenames. It does nothing harmful so you can type EXECUTE EXECUTE.ME and the picture files will be renamed.

ARC has one more handy feature worth mentioning; since it evolved from the IBM-PC world, Amiga ARC can decompress IBM .ARC files too. PKAX can decompress files built with the PKARC utility used on IBM computers.

THE OTHER ARC-LIKE PROGRAMS

ZOO is very similar to ARC in almost every function. The most recent version of ZOO is 2.00 and was written by Rahul Dhesi and ported to the Amiga by J. Brian Waters. When you see files on a BBS whose names end with ".ZOO" you will need to use ZOO to unpack them after downloading. Typing ZOO [return] at your CLI will give you brief instructions. Typing ZOO H will give you a longer help file. ZOO is a port-over of a UNIX program so it can handle long Amiga-style filenames without the need for an EXECUTE.ME file to be included to rename the files after downloading. On some types of files, ZOO achieves better compression than ARC, on other types of files ARC does better. ZOO is gaining popularity in the Amiga community and some BBSs may have more ZOO files than ARC files available for downloading.

PAK is a uniquely Amiga file compressor. It was not ported over from any other operating system. PAK was written by Mark Riley and the only version released so far is 1.0 which is shareware. PAK does not compress files as well as either ARC or ZOO but it has a different and distinct advantage. When you download a .PAK file you do not need to use another program to unPAK

it to your disk. Simply typing the name of the file at your CLI will unPAK it. Thus if you download a file to RAM: called STUFF.PAK you just CD to the directory where you want the files to be placed and type RAM:STUFF.PAK at your CLI prompt. PAK does not inform you what is going on when it is unPAK-ing files. When the work is done you get your CLI prompt back. You will need to get a DIRectory of the disk to see the new filenames.

There is one slight danger in unPAK-ing and that is when you unPAK a download by typing its name you are basically running an executable program on your computer not knowing what it is. Again an evil person could upload a program that erases your WorkBench disk or installs a virus in your system and disguise it as a .PAK file. If this troubles you the way around this is to "look inside" a downloaded .PAK file using the small PAK program itself, which is on this month's AmigaTimes disk. The PAK program will give you a listing of the contents of any legitimate .PAK file you may download, similar to using ARC's or ZOO's "L" list command.

FOREWARNED IS FOREARMED

Most of the files you'll download from Amiga-oriented Bulletin Boards and networks will be compressed with ARC, ZOO or PAK. There are still other methods of compression and we'll cover them in a future issue. These are the big three, and recognizing filename extensions as you download, and correctly naming your downloads on your disks will promote you another step up from being a telecomm novice to a real power user. □

NEXT TIME: EXPLORING USENET

Harv Laser can be contacted at the following EMAIL addresses, or care of this magazine:

People/Link: CBM*HARV Usenet: <any-backbone!gryphon!hrlaser>

ASSEMBLY LANGUAGE ROUTINES FOR BUFFERED FILE I/O

This article describes BFIO.ASM, an interdependent group of five assembly language routines providing buffered file input and output for the Amiga. The routines are somewhat primitive, which we shall see imposes some restriction on their use. However, within their proper domain they are significantly faster than standard alternatives.

These routines are more utilitarian than exotic. Though they don't illuminate any of the rarer mysteries of computer science, they provide an occasion for discussing some of the fundamental features of 68000 programming on the Amiga. The novice in assembly language will learn some of the ropes, the high-level programmer will acquire some handy tools, and the advanced assembly language user can use them as a foundation for constructing more advanced routines of a related nature.

THE GENESIS

The need for file I/O buffering arises from the fact that, on the microprocessor time scale, the time required to access a disk and read or write data is quite substantial. Depending upon the device, acquiring or storing a block of information (512 bytes) may take anywhere from 90 to 500 milliseconds or more. (If the file is on a "RAM disk," of course, things will be much faster. But

how does your program know this ahead of time?)

Now 100 milliseconds is simply an enormous amount of time by microprocessor standards. Estimating five microseconds for the average 68000 command, you could execute some 20,000 instructions in the same amount of time. Anything you can't do in 20,000 instructions is hardly worth doing. Of course I exaggerate, but you get the point.

The basic idea is quite simple. You don't go to the supermarket every time you need a stick of gum, or the bank every time you have a dollar to deposit. You wait until you have accumulated a substantial body of transactions, and then do them all at once. The nice thing about these BFIO functions is that they perform this work of accumulation behind your back, as it were. A program can be written as if you always have instant file access, while the routines shoulder the burden of insuring that access is time-wise efficient.

They were originally developed as a by-product of a graphics program I was working on, predominantly written in C. Implementations of C usually provide their own buffered I/O routines, referred to as "level 2 functions," a terminology inherited from the UNIX realm. These routines - fopen, fread, fseek, fwrite,

fclose, and so forth - automatically provide the buffering needed for efficient disk access.

In addition, Electronic Arts, along with its IFF specification, provides a group of routines lumped together as GIO.C (for "Generic I/O Speed Up Package"). For the average, sane programmer either of these alternatives would be good enough. However, I have a stubborn streak that impels me to believe that my homebrew assembler versions will generally be faster if not otherwise better.

There are a couple of factors that tend to make this a self-fulfilling prophecy. First, as in the case of the GIO.C routines, assembly language is usually speedier than high-level approaches, however efficient their implementation. And second, in comparison with the C level 2 functions, routines written with a particular goal in mind are usually much more stream-lined than those that need to address a wide range of functions.

When it comes to debugging, or modifications, or dealing with odd or unexpected behavior: if you've written your own routines, you're in a much better position to figure what's going on, and to make happen what you want to happen. But even without these excuses, I probably would still be "rolling

By Gerald Hull

my own" 68000 routines for the Amiga. I just like working in assembly language.

USING BFIO

I haven't tried to run an exhaustive series of benchmarks on these BFIO functions, but have done enough to verify my intuition. The `rede` routine, in particular, will input a lo-res image in about half the time it takes using Lattice's `fread`. The version of the `GIO.C` code I have states plainly "Read not speedup yet," so I didn't even try a comparison. Using the AmigaDOS `Read` instead of `rede` - that is, using no buffering - takes over twelve times as long.

In effect, the group of BFIO routines - `opin`, `rede`, `seke`, `rite`, and `klos` - stand between the user and equivalent AmigaDOS I/O functions - `Open`, `Read`, `Write`, and `Close`. To the extent possible I have made the former operate the same way as the latter. That is, you can go through your code replacing "Read" with "rede," and so forth, and get the same results. (The one major exception is `seke` routine, as we'll see in a moment.)

In the assembler code you will note that each of the routines has been prefaced with an underscore, for example, "`_rite`". This is in accordance with a C language convention which uses that device to distinguish functions from other symbols. When called from C code, that underscore should be left off; for example

```
rede(handle, buffer, amount;
```

However, called from another assembler routine, the underscore must be included:

```
jsr _rede
```

As an aid to the C programmer, the internal documentation for each routine includes what I have called its "C-equivalent representation." This consists of the function declaration they would be given, were they written in C. For instance, for `rede` we have

```
rede(handle, buffer, amount)
long handle;
char *buffer;
```

long amount;

Whatever language is used, it is important to note that once a file has been opened using the BFIO functions, you can only use those routines until it has been closed. At that point, of course, you are free to use any alternative file handling routines according to their conventions. A discussion of how they work will explain the reason for this inherent interdependence.

THE DESIGN

At the heart of the five BFIO functions is a buffer (`BUFF`) controlled by two pointers (`BEGG` and `ENDD`) which maintain its status. The size of the `BUFF` (as I'll call it) is reflected in the symbol `CHUNK`, and can be any positive even longword value: from 2 to 2,147,483,648. However, it should be obvious that the bigger the `BUFF` the better, since time-expensive disk access will occur less frequently.

A minimum useful value for `CHUNK` is 488, which is the amount of actual data contained in a standard AmigaDOS block. (Just to complicate things, with the advent of the 1.3 Fast Filing System for hard drives that value will become 512.) In my timings, in order to read or write an entire lo-res image in one gulp, I set the size of the `BUFF` to 43920 (488 * 90).

(By comparison, you should note that increasing the buffer of C level 2 routines from their usual default size of 512 has no real effect on speed. This is undoubtedly a by-product of the wider range function those routines are required to provide.)

Getting back to the `BUFF`, the `BEGG` and `ENDD` pointers are typically loaded into address registers at the start of the routines, for faster execution, then saved back into memory when the routine is done. To help speed things up further, the assumption is made that once a file is opened, it is to be used either for reading or writing, but not both.

`BEGG` and `ENDD`, as a consequence, can be given different functions depending on whether reading or writing is taking place. When reading (that is, "rede-ing" or "seke-ing"), `BEGG` points to the beginning of data read

from file but not yet used by the program, while `ENDD` points to the end of that data.

When writing (rite-ing), on the contrary, the `BUFF` stores data the program has written, until it's full or the file is closed. In this case, we already know where the `BUFF` will end, which frees the `ENDD` pointer for use as a flag to indicate that the file has been used for writing. When the program calls `klos`, the flag shows whether the `BUFF` may still contain data written by the program but not yet "flushed" to the file.

The BFIO `seke` routine is simply a degenerate version of `rede`; it allows you to jump over data without actually reading it into a buffer. This is frequently handy when parsing the IFF FORMs that are used to store Amiga graphic images. So it should be clear that this is but a pale reflection of `Seek`, the AmigaDOS counterpart. The latter lets you reposition the file "head" with regard to the beginning and end of the file as well as the current position, and lets you move backward as well as forward.

Since with the AmigaDOS functions you can `Read` as well as `Write` during the same file access, plus `Seek` any position in it, it is evident exactly how much power the BFIO routines sacrifice in order to attain their greater speed. However, in many instances (especially in loading and saving images) you simply don't need all that power, and the BFIO primitiveness is no burden.

SECTIONS

In an earlier article I discussed the benefits of reentrant and reexecutable code. Such routines can be made "resident," so that they remain in memory instead of being reloaded every time. But not all code need be "pure," and there are many programs (for example, very large programs) that you simply don't want lurking around in RAM.

In such cases, AmigaDOS provides another approach, which in its own way helps to optimize utilization of operating system resources. The Metacomco assembler implements this with the `SECTION` directive; most other Amiga assemblers have the same or an equivalent

lent. This "pseudo-op" is inherited from Motorola's VERSADOS operating system, in which it fulfills a similar function.

There are three varieties of sections for the Amiga: CODE, DATA, and BSS. The first two are self-explanatory: CODE contains code, and DATA contains initialized data. The BSS ("block space segment") section is for uninitialized data. Use of the latter helps keep down the file size of your programs, because it simply contains a number indicating how much space the loader needs to allocate when your program is run.

A further efficiency is achieved through the ability of the loader to put each different section of a program anywhere it can find space. This is called "scatter loading." If every program you ran on your Amiga practiced proper memory allocation techniques, this wouldn't be so important, but in practice I have found it usually isn't too long before RAM looks like it's been run through a Cuisinart.

Consequently, the ability to SECTION Amiga programs can be an extremely useful means of combatting such fragmentation of memory. The BFIO routines are appropriately divided into three such sections. The first contains the CODE for the five constituent functions, the second the two DATA variables which represent the current state of the BUFFER, and the third BSS section the BUFFER itself.

DBRA

DBRA is a 68000 mnemonic guaranteed to generate catcalls in any male dominated programming seminar. But once you overlook such frivolity, you'll find a family of instructions of surpassing power and versatility. A DBXX instruction is basically a branch (Bxx) instruction which is simultaneously controlled by an automatically decrementing counter.

You have as many different varieties of DBXXS as there are Bxxs: DBEQ, DBNE, DBLT, DBGE, and so forth. Any of the 68000 data registers (D0-D7) can provide that counter. However it is important to remember that only the lower word (16 bits) of the register are

used for the countdown. So you will have to do some extra work if you want to count down from more than 35565.

The power of the DBXX instructions allows you to use just one instruction to control two different characteristics of a loop. However, their actual operation is tricky in a number of different respects. An example from the rede routine will help make this clear.

```
l$ ...
subq #1,d2
2$ move.b (a2)+,(a4)+
cmpa a2,a3
dbeq d2,d2$
tst d2
bne.s l$
...
```

The first thing to note is the need to initially subtract 1 from the counter reg-

Just as with subroutines, the experienced assembly language programmer can build up libraries of useful macros

ister. This is because the counting isn't finished when the register 0 reaches 0, but rather when it reaches -1. A second point to remember is that the mnemonic means the opposite of what you might expect. For example, DBEQ means "decrement and branch UNLESS equal," that is, the loop will terminate when A2 and A3 are the same.

The DBXX mnemonics are misleading because they invert the actual sequence of operations. What happens first is a test of the control condition. If that condition is true (for example, A2 and A3 are equal), control falls through to the following instruction.

So only if the condition is false will the register be decremented. If a negative value (-1) has been reached control

will also fall through. Otherwise, the looping continues. This is why, following the DBEQ instruction, it's necessary to test register D2 for zero. If A2 and A3 are the same, the BUFFER has been used up. But if the requested number of bytes has been read, D2 will contain zero: no decrementing will have occurred.

MACROS

Most people coming to assembler programming on the Amiga will have had some prior experience with the C language, because of the latter's status as the "default" high-level language for this computer. Consequently, they will have some familiarity with these concepts, insofar as C provides equivalent capabilities with "#define" statements. Indeed, the C preprocessor was explicitly modeled on similar traits in the assembly language for DEC PDP-11 computers. However, in C as in 68000 assembler, these tools are all too often neglected.

Macros look a lot like subroutines, but differ in that every invocation of a macro results in a replication of the code it contains. As a result, you use more space with macros, but generally get faster code by avoiding the overhead of JSRs, passing parameters, and RTSs. With modern computers like the Amiga, space usually isn't such a problem.

Furthermore, the code generated by a macro can be controlled by the parameters that get passed to it. For example, in BFIO.ASM the PUTCHUNK macro receives one argument, I, which determines the byte count that gets passed to the AmigaDOS Write routine. In rite, PUTCHUNK is invoked with

```
PUTCHUNK #CHUNK
```

which causes CHUNK bytes to get Written. However, in KLOS, it is invoked with

```
PUTCHUNK d2
```

which enables the routine to flush whatever (variable) amount of data remains in the BUFFER.

(continued on page 67)

The Amiga Monitor

An AmigaTimes Supplement

MATINEE AT THE BIJOU PRESENTED BY CINEMAWARE

EXCITING NEW ENTRIES FROM CINEMAWARE

Cinemaware, the creators of such Amiga screen classics as *Defender of the Crown*, *SDI*, *The Three Stooges*, *King of Chicago*, *Sinbad and the Throne of the Falcon*, and the now shipping *Rocket Ranger*, have announced the planned release of *Lords of the Rising Sun*, and *TV Sports: Football*.

Lords of the Rising Sun is making claim to some of the greatest graphics and animation ever to appear in a computer wargame. It will change the graphics expectations of serious computer gamers. *Lords of the Rising Sun* will be played on a detailed map of medieval Japan that is three screens wide.

All actions take place in real-time with exquisite detailing for the changing of seasons, drifting clouds, and even waves breaking against the shores.

Lords of the Rising Sun takes place in 12th century Japan, wherein you assume the character of a warlord in an historically accurate, far eastern epic. You will command vast armies of Samurai warriors, defend yourself against Ninja assassins, negotiate alliances with other clans, and confront your enemies in one on one combat; your final goal will be to become the supreme warlord, or Shogun.

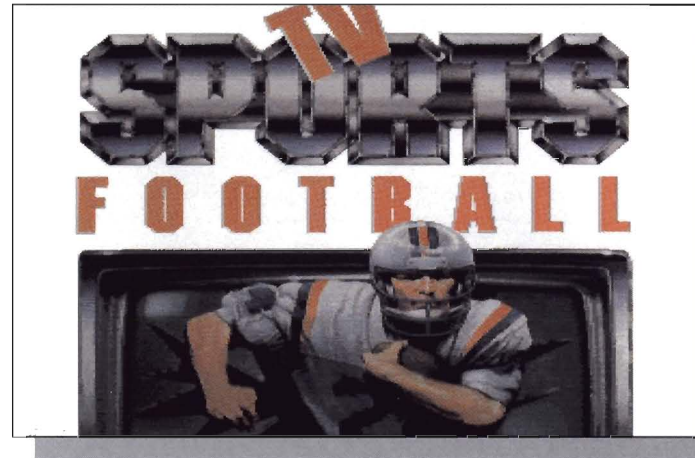
Also to be released is *TV Sports: Football*, a pro football simulator that looks like what you see on Monday nights. *TV Sports: Football* is said to be the first in a series of sports simulations from Cinemaware. This game will feature life-like graphics, and



Lords of the Rising Sun playing soon at an Amiga near you.

what is described as some of the best animation to ever grace a computer screen. *TV Sports: Football* features arcade action on offense and defense,

individual and team statistics, and a 28 team, 16 game schedule with post-season playoffs. As an added bonus, included at no extra charge is *TV*



TV Sports Football; Monday night football will never be the same.

Multi-Use Video Adaptors

VI-Series is a set of adaptors, the *VI-500*, *VI-2000*, *VI-500RF*, and *VI-2000RF*, that allows the Amiga to interface with a wide variety of video hardware peripheral products.

The *VI-500* (external for all Amigas) and *VI-2000* (internal for A-2000) convert the RGB signal from your Amiga into three different video output signals: Color Composite, Chroma and Luma.

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NTSC Composite Output:

Allows you to use virtually all composite monitors (color and monochrome), VHS and Beta VCRs.

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Allows use of Commodore 1700, 1800 or 1900 series monitors. All Amiga series monitors and Super VHS VCRs.

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Will permit you to use a television as a monitor.

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VI-500, *VI-2000* each \$79.95

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Sports Exclusives: Broadcasters, cheerleaders, fans in the stands and a half-time show, the only thing missing is a bookie to accept your bets.

This football simulator puts you on the sidelines as the coach or on the field as quarterback, running back, or wide receiver. *TV Sports: Football* features one player, two players, two player versus the computer, and computer versus the computer modes. All league games are played simultaneously, so you can watch the other games in progress while your game is being played.

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Westlake Village, CA 91362
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(805) 495-6515

BILLS BOARDS BUS EXPANDER FOR A-500/A-1000

A500 and A1000 owners who want to use peripherals designed for the A2000 can use the *Bill's Boards BusExpander*. This bus expander will accept most of the cards designed for the A2000 such as hard disk controllers, 2/4/8 MB RAM cards, accelerator cards, etc. In addition, the bus expander makes it possible for A500 and A1000 owners to add many IBM-compatible peripherals.

The bus expander provides six Amiga 2000 Bus (100 pin) slots; three (optionally five) of which are bridgeable to AT slots. There are six (optionally eight) IBM compatible slots; four (optionally seven) of which are AT slots. It meets ZorroBus and Amiga 2000 Bus electrical specs and is designed to work with auto-configurable cards.

Bill's Boards Bus Expander
Bill's Boards
9528 Miramar Rd., Suite 181
San Diego, CA 92126
USA
(619) 486-0908
\$495 (US)

AMIGA COLOR IMAGE SCANNER

COLOR IMAGE SCANNER FOR DTP

Gold Disk Inc. and ASDG Inc. have announced a major breakthrough in pre-press color image processing on the Amiga. This new color scanner will be called *SpectraScan*.

The SpectraScan package is said to take full advantage of the powerful Sharp JX 450 scanner. This package will allow Amiga desktop publishers and designers to store images in four settings: 1-bit plane monochrome, 3-bit planes in 8 colors, 8-bit planes true grey scaling, and an incredible 24-bit planes offering an unprecedented 16 million colors. With the software you can vary screen densities, edge emphasis or dulling, thresholding, and user-defined color maps are selected by the mouse.

SpectraScan will be available for use with *Professional Page* and the Amiga in the fall of 1988.

For further information, contact:

Burton W. Robson
Gold Disk Inc.
(416) 828-0913

Perry Kivolowitz
ASDG Inc.
(608) 273-6585

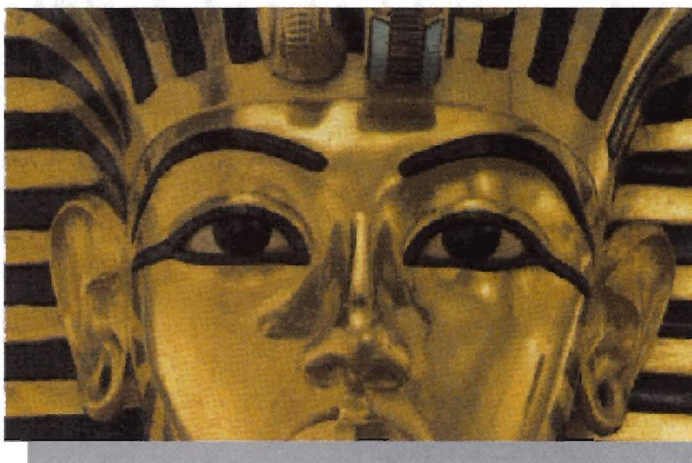


Image of King Tut captured with the Spectra Scan color image scanner.



Also scanned with the Spectra Scan, this Canadian \$20.00 bill demonstrates the detailing capabilities of Spectra Scan.

HELP FOR AMIGA PROGRAMMERS

LATTICE COMPILER COMPANION

Features 10 important time saving file management tools designed for Amiga Programmers.

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batch files with commands inserted into the list of file names extracted

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Grep locates and prints line numbers of words and expressions within one file or across several files.

LMK automates file management through dependencies and rules to rebuild complex applications the same way every time you make a change in one of your source files

Splat Searches and replaces text strings within one or more files to reduce global changes to a single entry

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WC Counts number of words and lines within a file and provides a checksum

CXREF Generates a cross reference listing of C language source files to help you locate variables and functions calls.

All lattice products come with unconditional 30 day money back guarantee.

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AMIC TERM

Finally a terminal communications package with many useful features, yet managing to remain user-friendly.

Features

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System Configuration Window: interface to define all Amic Term parameters and preferences including: default transfer protocols, baud rate, modem strings, default screen colors, beep tone and many more.

Amic Term supports a full range of protocols and Terminal emulations. Protocols supported: ASCII, Xmodem, Kermit, Wxmodem, Ymodem G, Xmodem I-K, Ymodem Batch, Zmodem (Append, Newer, Since, Command) and Amic's own DIRECT and AMICTALK. DIRECT allows file transfers utilizing the modems error correction feature (MNP), allowing for faster transfer rates. AMICTALK allows you to transfer files both ways while retaining control of the host system; great for simultaneous chatting or other remote operations.

Terminal emulation supported: VT100, VT50, VT102 and ANSI.

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Powerful Script Language with over 50 commands including calls to instant access window files.

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Amic Term
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BERNOULLI HARD DRIVES NOW AVAILABLE FOR THE AMIGA

As you grow accustomed to using your Amiga you will find that your data storage needs increase dramatically. Eventually floppies become too slow and they are never able to store enough data. Your first solution is buying a hard drive. That was a pretty good idea, but eventually your hard drive is not going to provide enough mass storage, because you are limited to the amount of storage space that you purchased when you bought it. Now if you want more hard disk space you have to purchase another hard drive.

A Bernoulli box will provide the same performance as fixed hard disk drives, with the removeability characteristics of floppy drives. Bernoulli Drives have been available for other computers (like IBMs) for quite some time, but finally a company is making them available for the Amiga.

IOmega is manufacturing 5.25 in-

ch half-high Beta 20 Bernoulli Drives; both internal and external drives. Like any hard drive, the Bernoulli requires SCSI interfaces. Presently, CSA's *SCSI card* for the A2000 and *C Ltd's SCSI card* for the A1000 are supported. In the near future other SCSI cards will be supported like *Supra Corp* and *Commodore's 2090A* (when it is released).

IOmega's Bernoulli is compatible with all Amiga software using Workbench 1.2 and it will be updated to work with Workbench 1.3. The Bernoulli drive provides an average seek time of 40 ms and a sustained data transfer rate of 3.9 Mbits/sec. Each removable cartridge provides 21.4 MB of formatted magnetic storage space. The extra 115 KB is provided in case some sectors become defective during the use of the cartridge. When partitioning each Bernoulli car-

tridge you have the choice of formatting it as a mixture of, from 1 to 100% AmigaDOS and MS-DOS or as 100% of either.

Initially, the cost of a Bernoulli box might seem high, but if you weigh its advantages, it's well worth it.

1. Cost per MB is cheaper than other magnetic media storage devices.

2. It uses air pressure to draw the recording media toward the recording heads, so head crashes can't occur.

3. Using cartridges means you can keep your software separate from the hard drive.

4. No hard disk storage limit.

5. Dual drive bernoulli can copy 20 MB of data in under 3 minutes.

6. All cartridges are very portable and convenient to carry around and store.

7. You can combine your existing hard drive with a Bernoulli. So your hard disk contains application pro-

grams and data stored on the Bernoulli.

8. Bernoulli cartridges can be organized into specific job functions and/or software applications.

9. Storage media intensive applications like graphics, animations, digital video and digital audio storage problems are no longer a problem.

Inner Connection Inc.

12310 Brandywine Rd.
Brandywine, MD., USA
20613
(301)372-8071

\$1695 single internal drive
\$1795 single external drive
\$2795 dual external drives
\$ 99 20MB cartridge

NEW FONT UTILITY FOR PROFESSIONAL PAGE

Professional Page users can now create metrics for Amiga fonts; this utility is available from *Gold Disk*. Using this utility means that users can also expect an improved output on dot matrix devices.

Users of this utility may use Amiga font packages such as *Gold Disk's Font Set 1* to create the appropriate metrics for screen letter spacings and dot matrix output from *Professional Page*. This utility for converting Amiga fonts was created by Ed Scherer.

This metric utility may be obtained from Gold Disk or through major bulletin boards. BBSs include: CompuServe (ID: 73657,2104), BIX (ID: golddisk), and People Link (ID: gold*disk). Registered owners of *Professional Page* may receive this utility by contacting the Gold Disk Order Department. Registered owners on Gold Disk's Extended Support Program receive the utility free of charge.

For further information on the metric font utility, contact:

Patrick Roscoe
Technical Support Department
Gold Disk Inc.
(416) 828-5636

Gold Disk Order Department
P.O. Box 789, Streetsville
Mississauga, Ontario, L5M 2C2
CANADA
(800) 387-8192



Dirk the Daring will soon arrive on the Amiga Screen.

SOFTWARE FROM READYSOFT

COSMIC BOUNCER (\$29.95 US)

Whack! Thock! Oh, the painful life of a tennis ball. Back and forth, helpless to the desires of a tennis players. But wait! A computer mishap has directed a genetic space-beam on you which has brought you to life! You are now the *Cosmic Bouncer* and must bounce your way through 20 levels of action.

DRAGON'S LAIR

Dragon's Lair was a huge success in the arcade industry. ReadySoft will be releasing a version of the wildly successful game for the Amiga. For those you who are too young or too refined to step into an arcade, the origi-

nal *Dragon's Lair* is a laser disc game animated by Don Bluth (ex of Disney Studios). The player controls Dirk the Daring, a knight on a quest to rescue the fair Princess Daphne from the evil clutches of Singe the Dragon. In order to rescue her, Dirk battles evil creatures and other ne'er-do-wells, in the evil castle.

The ReadySoft version of this great game is multi-disk animated computer game. With a deep voice, "Lead on brave adventurer, your quest awaits!"

COSMIC BOUNCER

DRAGON'S LAIR
ReadySoft Inc.
PO Box 1222
Lewiston, NY 14092
USA
(416) 731-4175

VERY FAST RAM

ProRAM 2000:

This board can provide up to 8 Megabytes of FAST RAM expansion for the Amiga 2000, while only occupying a single expansion slot. *ProRAM 2000* is user expandable in 2 Mbyte increments, using 1 megabit DRAM memory chips. This means that *ProRAM 2000* can be configured to either 2, 4, 6 or 8 Megabytes of FAST RAM. It's one of the only memory boards supporting a 6 Megabyte configuration; which happens to be vital for use with the PC Bridge Card.

A special high speed discrete dynamic RAM controller (built into the card) provides "no-wait state" performance. *ProRAM 2000* is also fully autoconfiguring, allowing compatibility with the Workbench 1.2 operating system and greater.

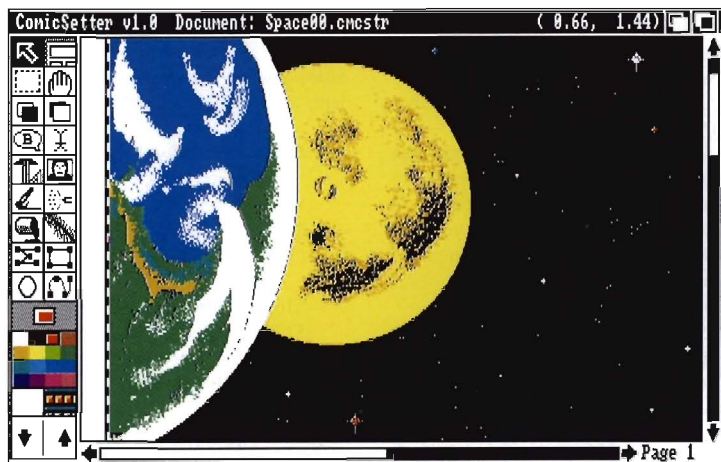
ProRAM 2000 board comes with an extensive RAM test software disk and complete instructions (for board installation and adding memory chips onto the board).

ProRAM 2000

Progressive Peripherals & Software

464 Kalamath St.
Denver, CO 80204
USA
(303) 825-4144
\$299.95 (US) Unpopulated board

COMICSETTER HAS ARRIVED!



ComicSetter in action.

COMICSETTER IS NOW SHIPPING...

Comicsetter, the complete comic design studio from *Gold Disk*, is now shipping. *Comicsetter* is designed primarily as a comic layout program but is also equipped with a full-featured paint program. The *Comicsetter* package consists of the Program Disk, a Background and Props Disk, and an extensive manual. There are two basic drawing modes available, bitmap drawing and structured drawing. You are able to load in various backgrounds and characters from the accompanying ClipArt disk, or images created with other bitmapped paint programs such as *Deluxe Paint II* or *Aegis Images*.

The *Comicsetter* features a WYSIWYG (What You See Is What You Get) work environment that allows you to view the page from four different views, 200%, 100%, 50%, or a Full Page. *Comicsetter* functions in two resolutions, hi-res, and hi-res interface

with 16 colors.

Comicsetter document pages are composed of panels. Panels can be scaled, deleted, re-sized, and re-positioned, either separately or as groups. Panels may also be saved individually. Pages can be rearranged, inserted, or deleted, and the only limitation on the number of pages a document can have is limited by available disk space and system memory.

Available on the Background and Props disk are a variety of settings from various angles that can be modified for use. Presently there are three ClipArt disks available. Science Fiction, Super Heroes, and Funny Figures. There are plans for release of more ClipArt disks in the future.

Comicsetter
Gold Disk, Inc.
 P.O. Box 789, Streetsville,
 Mississauga, ONT L5M 2C2
 CANADA
 (416) 828-0913
 \$99.95 (US)

Computer VIRUSES, a High-Tech Disease

Everything you ever needed or wanted to know about viruses you can now learn. *Abacus* has published a 275 page book titled "*Computer Viruses a High-tech Disease*." The author, Ralf Burger, is a systems engineer who has spent years experimenting with and lo-

cating viruses in computer systems. The book explains what a virus is, what it can do, how it works and even how to "innoculate" your computer against them and much more.

Abacus
 5370 52nd Street SE
 Grand Rapids, MI 49508
 USA
 (616) 698-0330
 (800) 451-4319 [Orders only]
 \$18.95 (US)

WARP SPEED ON AN AMIGA

CMI PROCESSOR ACCELERATOR

MC68881 math co-processor your system will perform at greater speeds.

The *Processor Accelerator* performs at speeds significantly greater than a MC68010, and offers better cost effectiveness than a MC68020.

Overall system throughput will lie between 20% to 40% depending on the program that is running. It actually performs almost as well as a stand-alone 7MHz MC68020, but the processor accelerator costs five times less than a 68020 board. If you add a

Creative Microsystems Inc.
 10110 SW Nimbus, #B-1
 Portland, OR 97223
 USA
 \$199.95 (US)

PHOTON ART DISK

EXPANSION DISKS FOR PHOTON PAINT

MicroIllusions has released a series of Expansion Disks for *Photon Paint*, their popular HAM paint program. The disks are designed to save the *Photon Paint* artist the time of having to create complex patterns such as wood or marble.

To use the disks, simply load any of the files into *Photon Paint* and cut them out as brushes. The brush can then be wrapped onto 3D shapes, tilted, twisted, rotated, or altered using any of *Photon Paint*'s numerous functions. The blend mode used in tandem with the luminance feature, can yield some extremely realistic marble structures, tile floors with depth, or even

wood paneling.

Photon Paint, reviewed in our premiere issue, is a third generation graphics program offering features never before seen on any personal computer. Features include brush manipulations such as resizing, mapping on various 3D objects, blending, dithering, and luminance.

Photon Paint Expansion Disks
MicroIllusions, Inc.
 17408 Chatsworth St.
 Granada Hills, CA 91344
 (818) 360-3715
 (800) 522-2041
 \$29.95 (US)

AMIGA 2000 PROTOTYPING BOARD

What is it? This device was built for those people who have said, "I can do it better myself." The *NES-AM_200A Amiga 2000 Prototyping Board* will help solve your hardware problems the easy way.

After setting up your hardware project on paper you can directly set up an actual hardware mock up of what's on paper and then immediately test it out to see if it works.

Board Features:

- Provides both *ZORRO II* and *IBM AT* card edge connectors with gold plated fingers.
- Excellent power and ground architec-

- ture
- Hole pattern for "D" pin connectors
- Two 13 X 13 PGA (Pin Grid Arrays)

NES Inc.
 6805 SW 8th Avenue
 Portland, OR 97219
 USA
 (503) 246-9311
 \$49.95 (US) S&H \$3.00

NEW IMPROVEMENTS IN MICROFICHE FILER

Microfiche Filer Plus

This professional database was announced and demonstrated at AmiEX-PO in Chicago (July 22-24) and was designed to surpass *Microfiche Filer*. *Microfiche Filer Plus* provides all the speed, power and ease of use that made *Microfiche Filer* so popular, but with many newly added advanced features. It is also fully upwardly compatible with *Microfiche Filer*, thus allowing you to read all database files stored in the previous format.

New Features:

Sophisticated picture handling capabilities:

- Supports all IFF formats, including brushes, HAM and overscan.
- Picture storage is dictated by 4 squeezing strategies.
- Color rendition on pictures displayed is controlled by 5 automatic color

mapping strategies.

- Pictures are stored in FAST RAM (freeing up CHIP RAM).

Optional macro programming using AREXX language:

- AREXX can automate many database operations and data manipulations. Using AREXX's interprocess communication facilities allows you to import and export data in any format between *Microfiche Filer Plus* and any other AREXX compatible applications.

From within the database you can:

- Dial stored phone numbers.
- Play stored music.
- Run a slide show and even run an animation.
- It now has more sophisticated printing features allowing you to print on large, pre-printed forms.
- Automatic field calculations and number formatting as you type.
- Importation of entire documents into the database is now possible.

Update Policy:

All copies of *Microfiche Filer* purchased and registered by September 30, 1988 can be upgraded to *Microfiche Filer Plus* for \$39 plus shipping and handling (\$4 in continental US or \$10 overseas).

After September 30, 1988, upgrades will cost \$69 plus shipping and handling.

Microfiche Filer Plus

Software Visions, Inc.

P.O. Box 3319

Framingham, MA 01701

USA

(617) 875-1238

\$179 (US)

ONLINE WITH PC PURSUIT

The online world has many interesting things to offer; stock quotes, financial statistics, research professional topics, hundreds of free database and bulletin board services, E-mail facilities, movie reviews, make your own airline reservations, recipes, trivia, you can even shop and advertise in electronic catalogs and much, much more.

The problem is that these services are spread throughout the world and accessing them means you must use a modem and some sort of telecommunication link up which can be very expensive if used for prolonged periods of time.

One of the latest solutions with the lowest rate is *PC Pursuit*. *PC Pursuit* is part of Telenet Communications Corporation (a daughter company of US Sprint). This large conglomerate company offers very good prices and savings of up to 75% on your communication charges. *PC Pursuit* has a one time \$25 monthly fee in exchange for which you can make an unlimited number of modem connections. The only catch is it only applies to non prime-time hours (6 p.m. to 7 a.m., local time) and all day on weekends and holidays. Usage at any other time is billed at regular Telenet hourly rates. All billing can be charged to your Visa or Mastercard.

PC Pursuit can be connected simply by making a local call from nearly 18,000 US cities and towns. Presently, it is available only to the US (unfortunately for Canadians) with no plans to expand beyond its border, unless free trade goes through.

For more information or to register for voice service call, 1-800/Telenet (835-3638) 8 a.m. to 5 p.m. (EST). For information via your modem call "In Pursuit of..." (24 hours, 800-835-3001). Where you can sign up for service online and learn the latest news about online service, service enhancements, bulletin boards and databases accessible with *PC Pursuit*. All above toll-free numbers are valid in the US only. *PC Pursuit* or Telenet can also be contacted at 703-689-6000.

Telenet

12490 Sunrise Valley Drive
Reston, VA 22096
USA

SPACE PHOTOS II... NEW AND IMPROVED!

In this day and age when we are looking for interesting teaching aids in the classrooms, along comes *Space Photos II*. This is a double-disk set of digitized photos (170 photos in all), which is a pictorial history of the U.S. Space Program.

The images are digitized color pictures from the NASA archives covering the first Explorer Launch through the Apollo series and Moon missions, Space Shuttle missions, and the various space probes. Included on disk two is a concise chronological history of the space shuttle flights as well as a look at the Mariner and Voyager I and II series space probes. You are treated to a veritable visual feast of the various planets located in our solar system; from Mercury, the closest planet to our sun, all the way to Uranus and its satellites.

These images can be presented as an interactive slideshow, or as a continuous loop with a variable user selectable pause between frames. Although the images are in a compressed format, they can be decompressed to IFF format for printouts or for loading into paint programs or desktop publishing applications.

Space Photos II

Sign Etc. by D. Knox

P.O. Box 628

Carmichael, CA 95609-0628

USA

(916) 944-0790 (4282)

(800) 634-2952

\$29.95 (US)

AMIGA MIDI INTERFACE

Finally, a full featured MIDI interface/controller for the Amiga 500,1000 or 2000. *MIDI I* provides the most feature rich MIDI available to the Amiga market. There are enough features on it to satisfy even the most experienced MIDI user while still being user friendly enough for beginners to use.

Features:

1. RS-232 cable connection to MIDI interface with Passthru (internal version available for 2000).
2. Three jumper selectable MIDI Outs/Thru's
3. MIDI in
4. Sync Out (drums machine)
5. LEDs that receive, transmit and display activity on the MIDI bus.
6. Utilities Disk
7. Complete software compatibility

RAWCOPY V1.3

Scared about using your new program without making a backup first and/or want to copy it to your hard drive, but it's copy protected? No problem if you use a new backup tool called *RawCopy*. It will allow you to copy software that even other copiers have problems with and it permanently deprotects many programs. It's very easy to use because of its mouse driven user interface and it will support up to four 3.5" disk drives.

RawCopy V1.3

Micro Systems International

1143 Monroe St.

Carleton, MI 48117

USA

(313) 654-8402

\$49.95 (US) (include \$2.00 S&H)

Creative Microsystems Inc.

10110 SW Nimbus, #B-1

Portland, OR 97223

USA

\$79.95 (US)

FUEL-INJECTED PASCAL

This is a new Pascal native code optimizing compiler that produces high-quality object code very quickly. What makes this program different, is that it uses state-of-the-art proprietary parsing technology, local and global optimizers and sophisticated code generators to produce high quality code for a variety of architectures.

The syntax and much of the same run-time support used by Fuel-Injected Pascal closely resembles "Turbo Pascal" (a popular IBM Pascal compiler, by Borland International), but it is not an IBM ported product.

Fuel-Injected Pascal supports a complete run-time environment fully supporting nested includes and conditional compilation and provides access to the mouse, windows, menus (for those not wanting to use ROM Kernel services). It also provides complete ac-

cess to the Amiga ROM Kernel and the includes drawer containing all Amiga INCLUDE files; written in Pascal, but closely patterned after the major C compilers. Once the Pascal source code is complete and compiled standard object modules are created, which can then be easily linked to standard object modules written in other programming languages.

The software package comes with a complete manual, an "examples" disk containing free Pascal source code with absolutely no copyrights, and free technical support via telephone, BBS and FAX.

Fuel-Injected Pascal
Software Design Laboratories
3036 Lake Lansing RD.
Suite 275
East Lansing, MI 48823
USA
(517) 676-0847
Price N/A

COMMERCIAL JET FLIGHT SIMULATOR

B-727 FLIGHT SIMULATOR FOR THE AMIGA

A jet simulator for the Amiga is now available from *Precision Approach Inc.* This simulator is complete with a fully functioning panel that is designed for use by actual pilots of high performance aircrafts such as the Boeing 727.

The *Jet Instrument Trainer* is designed to be an affordable tool for pilots who wish to develop or maintain proficiency in high performance aircraft instrument flying technique. This simulator closely simulates the characteristics of a B-727 simulator. It offers the user the capability of performing ILS, VOR, NDB approaches, complex arrival and departure procedures, DME arcs, and holding patterns. Other functions include position set, altitude set, a pause function, wind direction and velocity adjustments.

Jet Trainer has been test flown by actual 727 captains, with very favourable responses. It is said that navigation is accurate and panel layout is conventional. Despite the fact that there are many keyboard inputs, controls are clustered to be in the same relative position as on most aircrafts.

Admittedly, some compromises were made in instrument display. All those that fly the jet trainer adapt quite quickly to complete instrument approaches, holding patterns, and missed approaches.

It must be clearly stated that this is a simulator designed for the practice of instrument procedures. This program will not support aerobatic manoeuvres of any sort; any attempts to roll or loop the aircraft will result in warnings and incorrect instrument readings.

Although flying a microcomputer will never replace flying a real airplane, it is believed that regular practice with the Jet Trainer will help users develop faster scan, better planning, and a greater familiarity with a wide variety of instrument procedures.

Currently, the simulator requires a joystick and mouse but in the future a yoke is planned to replace the joystick, and "Area Disks" of approaches to the most requested airports will be released.

Jet Instrument Trainer
Precision Approach Inc.
P.O. Box 3116
Oak Park, IL 60303
USA
(312) 524-0909
\$89.95 (US)

POWERFUL NEW VERSION OF DATARETRIEVE!

Professional DataRetrieve

Abacus has scheduled the release date for *Professional DataRetrieve* for sometime this winter. It is compatible with the original *DataRetrieve* (reviewed last issue) and has several enhancements recommended by the users. It now has complete relational data management capabilities, where you can define relationships between different files. It also includes a programming language with over 200 BA-

SIC-like commands. Users can even create their own pull-down menus. *Professional DataRetrieve* can also perform complex calculations, whereas *DataRetrieve* could only perform simple sums.

Professional DataRetrieve
Abacus
5370 52nd Street SE
Grand Rapids, MI 49508
USA
(616) 698-0330
(800) 451-4319 [Orders only]
\$295.00 (US)

SUPERBASE CHANGES HOME BASE

PRECISION SOFTWARE EXPAND OPERATIONS

Precision Software, Ltd., the multinational database publisher, announced on July 22, 1988, plans to open a U.S. subsidiary. The company, which will be opened in August, will be called *Precision Incorporated*. Scheduled to open its doors on August 15th, this subsidiary will be responsible for providing distribution and technical support for Precision Software's already established line of productivity software. An additional function of the company will be to seek relationships with U.S. developers wishing to market products in Europe through Precision Software, Ltd. and the German-based subsidiary, *Precision Germany*.

Precision has announced that it will be marketing and providing technical support for its *LOGiSTiK* and *Superbase* lines. Titles include *Superbase Personal*, *Superbase Professional*, and *Superbase 4*. This family of products includes versions of *Superbase* for the Amiga 500, 1000 and 2000, the Commodore 64 and 128, the Atari 520, 1040, and Mega ST computers, and for the IBM PC and compatibles.

Heading the new U.S. subsidiary as president will be Daniel P. Browning, former V.P. of marketing and Sales for *Progressive Peripherals &*

Software Inc., of Denver. According to John Tranmer, managing director of Precision Software, Browning is "A Natural [for the job]," and a man who is described as "...someone with exceptional organizational and marketing talents..."

Precision has reportedly announced an advertising campaign that is based on the interface similarities of *Superbase Personal*, *Superbase II*, and *Superbase Professional*. The campaign will feature an inexpensive upgrade path that allows end-users to upgrade from one product to the next by paying only the retail cost difference plus \$10. Says Browning, "This lets users protect their investment, both in learning time and in money. As needs grow, they can likewise purchase more power without much expense. They also won't have to learn a whole new system." The new campaign will also announce the removal of the "security key copy protection" on the Amiga versions of *Superbase Personal* and *Superbase Professional*.

All end-user and developer inquiries about Precision Incorporated should be directed to:

Daniel P. Browning
Precision Incorporated
8404 Sterling St., Suite A
Irving, TX 75063
USA
(214) 929-4888

GOLD DISK PRESENTS MOVIESETTER

Great news for all those would be Steven Spielberg's out there; *Gold Disk* will be releasing *MovieSetter*, their answer to high speed, low-cost animation. *MovieSetter* allows for WYSIWYG (What You See Is What You Get) creation of complex animations. Movies are created by layering any pre-selected background with independents "tracks" of graphics images. A "track" is an ordered set of graphic elements, each element representing a single position of an animated object or character.

Sets are created in the set editor wherein each set is treated as a small IFF picture and may be edited using the set editor tools. Sets can be created by importing a series of IFF images or brushes, or they may be created using the graphic tools available with *MovieSetter*. Backgrounds are IFF pictures which may be as large as 352 X 240 pixels in overscan mode.

MovieSetter will run in 1 to 5 bitplanes (2 to 32 colors); this feature can be varied by the user. Running *MovieSetter* with one bitplane allows

you to run productions at an incredible 60 frames per second, an excellent way to preview animations.

MovieSetter will also allow sound to be mixed with the animation. Events can be attached to a frame and trigger an action such as starting a sound sample.

MovieSetter
Gold Disk, Inc.
P.O. Box 789
Streetsville, Mississauga
Ontario, CANADA, L5M 2C2
(416) 828-0913
(800) 387-8192
\$124.95 (CDN)
\$ 99.95 (US)



Screen shot of *MovieSetter* from Gold Disk, Inc.

PHOTON VIDEO TRANSPORT CONTROLLER

Microllusions has announced the release of *Photon Video Transport Controller*. This professional software allows the user to regulate external video tape frame by frame controllers. It supports the Lyon-Lamb and Video Media's V-Lan systems, and can be

upgraded to accommodate new controllers at any time.

Transport Controller can be programmed to record from one to 300,000 frames. The editor allows you to stretch short real-time animations into longer sequences. *Transport Controller* supports multi-tasking and uses less than 50K of memory.

Transport Controller is one of the products in the Photon line designed to work with Photon Video Cel

Animator, which in turn works with Photon Paint.

**Photon Video Transport
Controller**
Microllusions, Inc.
17408 Chatsworth St.
Granada Hills, CA 91344
(818) 360-3715
(800) 522-2041
\$ 299.95 (US)

WHISTLE UP A HAPPY 'TOON...

WITH

EASYL™

PRESSURE SENSITIVE DRAWING TABLETS FOR AMIGA AND IBM PC

Since its' appearance in 1984, the EasyL pressure sensitive drawing tablet has been the tool of choice for thousands of artists, animators, designers, map makers, students, teachers, and hobbyists. EasyL works with popular programs such as Deluxe Paint II, Photon Paint, Deluxe PhotoLab, and Draw Plus. EasyL offers the best combination of ruggedness, simplicity and economy for art, design and touch input. EasyL models are available for Amiga 500, 1000, and 2000, and IBM and compatible personal computers. If you aren't an EasyL owner yet, contact your local Amiga dealer for a demonstration, or Anakin for further information.



EASYL-THE HUMAN TOUCH.

In Canada:
Anakin Research, Inc.
100 Westmore Drive, Unit 11C
Rexdale, Ontario, Canada
M9V 5C3 (416) 744-4246

In the U.S.:
Inforite Corporation
1670 S. Amplett Blvd., #201
San Mateo, Ca 94402
(415) 571-8766

For those of you who already own EasyLs, now is the time to show your creativity and win valuable prizes to boot! Send Anakin Research a 3.5" floppy disk containing your favorite IFF images and animations which you created with the aid of the EasyL, by January 15, 1989. A panel of artists will choose the best submissions in the Professional and Student categories on January 25th, 1989. Prizes of \$500.00, \$250.00, and \$100.00 worth of Amiga software will be awarded to the three top entries. Twenty runners-up will receive EasyL T-shirts. All entrants will get a free EasyL art disk for entering.

EasyL is a registered trademark of Anakin Research, Inc., IBM is a registered trademark of International Business Machines, Inc., *DeluxPaint II* and *Deluxe Photo Lab* are registered trademarks of Electronic Arts, *Draw Plus* is a registered trademark of Aegis Developmnet, Inc. Offer void where prohibited by law.

ASTOUNDING NEW GAMES FROM DISCOVERY SOFTWARE



Sword of Sodan.



Hybris.

CHARON 5 FROM MINDWARE

Mindware will be releasing a new and stylish strategy/action game called *Charon-5*, that places you in a saucer-like ship with a mission to descend through the 11 levels of a derelict spaceship and rescue some scientists trapped on the lowest level. *Charon-5* is an exciting and challenging game that features ultra-fast scrolling, superb graphics and colors, and excellent sound. With each level you must descend through an airlock to the following level. In order to pass through an

airlock, you must first repair certain damaged power lines of each level, to activate the airlock.

As your ship passes over the "tiles" on the floor, it collects energy that it needs to function and to defend itself from energy-draining attacks from the local inhabitants. When you reach the lower levels, it will be harder to find energy tiles and even harder to find your way around (especially on the labyrinth level).

Charon 5
Mindware International
110 Dunlop Street West
Box 22158
Barrie, ONT L4M 5R3
CANADA
(705) 737-5998
(800) 461-5441 [Orders]

DISCOVERY SOFTWARE INTERNATIONAL

Discovery Software International, Inc., will release two new arcade-action games for the Commodore Amiga Computer. *Hybris*, a fast-paced and graphically detailed shoot 'em up; and *Sword of Sodan*, an action-packed, sword fighting adventure.

HYBRIS

In *Hybris*, the time is 2461 A.D. The mission: reestablish communications with a remote Earth colony stranded on far-away planet Jurica. The player can play the game as the male role of J.P. Maverick or the female role of K. Lovett, fighter pilots assigned to the space station HYBRIS. The player begins with a scouting ship and by destroying special targets to obtain added dimensions, such as extra fire power, extra missiles, and an invincible mode, the player can pilot eleven different ships during game play.

Each of the game's three long-playing levels scroll approximately eight minutes, for a total of over twenty-five minutes of play.

SWORD OF SODAN

In *Sword of Sodan*, players may choose their role as Sodan or Sodanna, twins whose must save their parents trapped inside the evil castle Cragganmoor. Sword in hand, the player must travel through forests, graveyards, and city streets full of guards, wizards and other assorted villains to reach the castle walls. Once inside, the swordfighting continues through dark corridors and hidden passages, where traps and

surprises lurk around every corner.

The animated characters in *Sword of Sodan* stand almost 2/3rds the size of the screen. When a player's character is killed, the game also has a unique replay mode so that the most recent past performance can be studied. In order to contain the detailed animation, digitized sound, and 11 graphically animated levels, *Sword of Sodan* uses over 4 MB of memory and will be available on three disks.

BETTER DEAD THAN ALIEN

Discovery Software International, Inc. has acquired the North American distribution rights for *Better Dead Than Alien*, a comical space-age shoot 'em up developed by Electra Software.

In *Better Dead Than Alien*, the player is the galactic hero Brad Zoom, who must battle wave after wave of aliens slithering and crawling down the screen. In addition to multi-level action, clever graphics and comical sound effects, *Better Dead Than Alien* also features a simultaneous two-player mode.

**Discovery Software
International, Inc.**
163 Conduit Street
Annapolis, MD 21401
USA
(301) 268-9877
(800) 34-AMIGA
\$39.95 (US) **HYBRIS**
\$49.95 (US) **SWORD OF
SODAN**
\$34.95 (US) **BETTER DEAD
THAN ALIEN**



Charon 5.

A LANGUAGE BETTER THAN C...

This language has the power, efficiency and portability of "C" with the added versatility of object-oriented programming. *Lattice C++* is a superset of the C language. It's so close to the C language that *Lattice C++* simply translates C++ source code (using the AT&T translator kit) into C code first, and compiled by the *Lattice C* compiler into object code. This makes C++ fully compatible with *Lattice C*, allowing you to retain your existing programs and use your current C libraries and tools. C++ even conforms closely to proposed ANSI C standards, providing even greater portability. What makes C++ so different are some of the added features that it provides to programmers, making their lives easier.

Object oriented programming gives you the opportunity to create hierarchies of types or subclasses from similar objects. This allows the characteristics of a previously defined parent class to be inherited, while still having the ability to acquire unique characteristics. This saves on both code size and memory requirements.

Built-in type checking abilities al-

lows you to define new types and specify type conversions as needed. You can even specify functions with an unknown number and type of parameters allowing greater flexibility when interfacing with a function.

The components of defined objects can be protected by hiding or limiting access to the data and their structures by other portions of your program.

Actions can be performed on an object simply by invoking a *METHOD*, described in the class definition. These *METHODS* can be either public (operations accessible outside the scope of the class) or private (operations accessible only within the scope of the class).

CONSTRUCTOR and *DESTRUCTOR* facilities automatically allocate memory and initialize variables, then restore memory exactly as it was before the variables were constructed. You can even create custom memory managers optimized for the objects being maintained.

All of the above functions allow you to concentrate your programming efforts on the data and functions being manipulated, rather than having to work on the procedures doing the manipulating. These problem solving

functions will allow you to speed up program development significantly. With all these qualities it seems ideally suited for the Amiga's dynamic multitasking environment.

C++
Lattice, Inc.

2500 S. Highland Avenue
Lombard, IL 60148
USA
(312) 916-1600
\$500 (US)
1.5 MB Required
10 MB hard disk suggested

WALLS HAVE MICE AND MICE HAVE EARS

by the Lowe Arranger

3D OR NOT 3D, THAT IS THE QUESTION...

Rumors (such an ugly word) are flying that an as yet unnamed company is working on a 3D editor that will work in conjunction with X-Specs 3D and other stereoscopic glasses, that's right boys and girls, a 3D editor that can actually be viewed in 3D.

The new Amiga Workbench 1.3 operating system, is due out in early to mid October at an estimated cost of \$30.00 (US). Unfortunately, this price doesn't include the Kickstart ROM chip; to get the chip, you will probably have to take your Amiga 500 or Amiga 2000 to your nearest dealer for installation. The reason for this set-up is to prevent

people from electrocuting themselves, or even worse their Amigas, when trying to do their own installation.

MAD FOR C.A.D. Department

I won't say the company name but their initials are P.R.O.G.R.E.S. S.I.V.E. P.E.R.I.P.H.E.R.A.L.S., will release what is being described as a "killer" professional CAD program that will not be called UltraCAD. They will also be releasing a hot new 3D package. This program will have paint program functions and you have the option of doing ray-tracing or fast conventional rendering. Expect to see both programs at the upcoming COMDEX.

DISCLAIMER

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MODULA-2 FILE REQUESTER, Part III

This is the final installment in a three part article on writing a file requester in Modula-2. In this month's article, we will cover the "meat" of the program: user interface, input handling and display. In the first installment, we wrote a module to read directories. In the second part, we built several utility procedures for display and input. This month we will put it together and finish the FileReq module.

IDCMP event loop

Before we jump into coding up our file requester, let's look at how we will go about interpreting user input. Though there are many ways to handle user input, I have found that a simple IDCMP event loop works best in most programs. The Intuition Direct Communications Message Ports (IDCMP) system provides application programs with a way to receive all user input in a standard format. A program that gets its input directly from the devices would have to be much more complex. Here is the IDCMP event loop that we will be using:

```
MySig := SignalSet( CARDINAL(
MyWin^.UserPort^.mpSigBit));

LOOP;
  IMsg := GetMsg(MyWin^.UserPort^);
  WHILE IMsg=NIL DO
    MySig := Wait(MySig);
    IMsg := GetMsg(MyWin^.UserPort^);
  END;
  IF IMsg^.Class = IDCMPFlagsSet( ) THEN
    ...

  ELSIF IMsg^.Class = IDCMPFlagsSet( ) THEN
    ...

  ELSIF IMsg^.Class =
    IDCMPFlagsSet(Closewindow) THEN
    ReplyMsg(IMsg);
    EXIT;
  END;
  IF IMsg#NIL THEN ReplyMsg(IMsg); END;
END;
```

MySig is a variable of type SignalSet that is used to tell Exec when to wake us up. Exec is the part of the Amiga's Operating System that handles

multitasking. We are asking Exec to wake us up whenever we get IDCMP input to our window. MyWin is a pointer to our window structure. The WaitPort() function could be used in this example, but the above code is more general and will allow features to be added more easily. This code can be incorporated into just about any program that used the IDCMP system for input.

PROGRAM STRUCTURE

There are three major parts to the file requester procedure: user interface, input handling and display. Most of display is taken care of by the utility procedures Print, PrintName, and DoDisplay that we wrote last month. These procedures will be used throughout the input handling code. This is what that basic program structure looks like:

```
Build user interface;

LOOP; (* IDCMP event loop *)

  Handle input;

  IF we need to reread the directory THEN

    Reread the directory;

  END; (* IF *)

END; (* LOOP *)
```

USER INTERFACE

Normally user interface is a tedious and time consuming chore, but we will be using the Benchmark Modula2 Simplified Amiga Library procedures to make this part of the program a snap.

Our file requester will have eight device gadgets, four control gadgets, two string gadgets and a prop gadget for the scroll bar.

```
BeginGadgetList;
(* build out gadget list *)
FOR C := 1 TO 8 DO
  (* create disk gadgets *)
  AddGadgetTextButton(-50, 15+14*(C-1),
    ADR(GAD(C)));
  INCL(LastGadget^.Flags,GRelRight);
  (* x is offset from right *)
END;
```

```
(* control gadgets *)
AddGadgetTextButton( 10, 127, ADR(' OK '));
AddGadgetTextButton( 88, 127, ADR('Parent'));
AddGadgetTextButton(165, 127, ADR(' Root '));
AddGadgetTextButton(243, 127, ADR('Cancel'));

(* string gadgets *)
AddGadgetString(55,
101,24,150,ADR(LastPath)); PGad :=
LastGadget;
AddGadgetString(55, 114,24,
50,ADR(LastFile)); FGad := LastGadget;
SIPtr := PGad^.SpecialInfo; PBuf :=
SIPtr^.Buffer; (* address buffers *)
SIPtr := FGad^.SpecialInfo; FBuf :=
SIPtr^.Buffer;

(* create prop gadget *)
AddGadgetProp(230, 14,20,83,FALSE,
TRUE,1,1,1,0FFFFB); PropGad := LastGadget;
PIPtr := LastGadget^.SpecialInfo;
(* address prop values *)

Gad := EndGadgetList();
(* gadget list handle *)
IF Gad=NIL THEN Cleanup; RETURN(RCNoMem);
END; (* out of mem? *)
```

That's all there is to the user interface. Without the Simplified Amiga Library procedures, it could have taken 4 or 5 times as much code to do the same thing. As a note, PIPtr is a pointer to our PropInfo record for the scroll bar which is used to update the scroll bar with ModifyProp. PBuf and FBuf are string pointers that point to the contents of the path and file gadget.

INPUT HANDLING

Closewindow: If the user clicked on the close gadget of our window, the exit the IDCMP event loop, cleanup and exit.

MouseButtons: If the user clicked on a file name, then put the file name into the File: string gadget and refresh the gadget. If the user double clicked on a file name, then put the file name into the File: string gadget and exit. If the user double clicked on a directory name, then append it to the contents of the Path: string gadget and set the flag RDIR so that the new directory will be read.

GADGETS

Device gadgets:

Put the device name into the Path: string gadget and set the RDIR flag.
OK gadget:

If the File: gadget is not empty, then exit.

PARENT gadget:
Replace the Path: string gadget contents with the parent directory and set the RDIR flag.

ROOT gadget:
Replace the Path: string gadget contents with the root directory and set the RDIR flag.

CANCEL gadget:
Exit.

Path: gadget:
Set the RDIR flag.

File: gadget:
Exit.

Scroll bar:
Redraw the display.

The only code that should be difficult to understand is where file names and paths are parsed. Here is a look at the source the string parsing that is done in the PARENT gadget code:

```

9  : IF PBuf^[0]#0C THEN      (* parent *)
C := 0; D := 0;
WHILE PBuf^[C]#0C DO
  IF (PBuf^[C]# '/' ) OR (PBuf^[C]# ':' ) THEN
    D := C; END;
  INC(C); END;
IF (PBuf^[D]# ':' ) OR ((C=0) AND
(PBuf^[D]# '/' )) THEN
  PBuf^[D+1] := 0C;
ELSE PBuf^[D] := 0C; END;
RDIR := TRUE;
RefreshGList(PGad^, MyWin^, NIL, 1);
END;

```

The WHILE loop looks for the last slash '/' or colon ':' in the path and then the IF statement truncates the path if there is anything to truncate.

FINAL NOTES

The source for FileReq is in FileReq.mod and FileReq.def and there is a test program on the AmigoTimes disk called FRTest.mod. The file requester written in this article is very basic. It does not have a lot of fancy features or powerful functions. It is however a base that can be built upon. There are many features that could be added such as scrolling device gadgets, sorted file name list, highlighting of file names in the scrolling area, scroll up and scroll down gadgets just to name a few. None of these would be too hard to put in, and in fact many have already been added. Good luck! ☐

ASSEMBLY LANGUAGE ROUTINES FOR BUFFERED FILE I/O

(continued from page 56)

Just as with subroutines, the experienced assembly language programmer can build up libraries of useful macros that can be used over and over again in different projects. However, as the BFIO routines show, macros also provide a kind of modularity that can contribute to the "readability" of your code. And at the very least, they simply reduce the amount of typing you have to do.

CONDITIONAL ASSEMBLY

Another means of increasing the versatility of your assembly language programming is conditional assembly. It allows the same source file to generate different machine code, depending upon the requirements of the occasion.

As mentioned, these data buffering routines were originally written for inputting and outputting graphics images. Now outputting an IFF ILBM raises problems because of the requirement that each component begin on an even (word) boundary. With most of the components of the ILBM FORM it's easy to determine whether or not an extra 0 byte pad is needed, since you know its size ahead of time.

But if you're packing an image according to the cmpByteRun1 protocol for compression, you have no prior way to determine whether the BODY of the image will generate an even or odd number of bytes. Of course you can maintain a running total, but this inevitably imposes a significant time penalty.

I was able to avoid all this by having the klos routine check whether an odd number of bytes remained to be flushed to the output file. Since the BUFFER size

(= CHUNK) must be even, and the BODY is the last component of the ILBM to be output, a pad byte is needed if and only if an odd number of bytes remained.

However, people who wish to use BFIO.ASM for other purposes probably don't want that extra byte occasionally thrown in. By enclosing the "evening" code within a conditional assembly segment

```

ifd    ILBMER
...
endc

```

you are able to control whether or not it is included.

If the symbol ILBMER is defined anywhere, for example

```
ILBMER equ 1
```

it will insure that only files with an even number of bytes will get output by the BFIO routines. Note that equating the symbol to any value, even zero, will have the same effect. To exclude the "evening," the user need simply comment out the definition, and the code will not get assembled.

You can also make assembly conditional on a symbol's not being defined (IFND), on an argument being equal (IFEQ) or not equal (IFNE) to zero, and so forth. The available options differ significantly from assembler to assembler. The HiSoft DEVPAK AMIGA manual goes so far as to demonstrate how to do recursive programming with an ingenious combination of its macro and conditional capabilities. ☐



THE AMIGA AND THE STORYBOARD

Our new column about Video Production on the Amiga explains one method of storyboarding.

Storyboards. This is how ninety-nine percent of what we see on television and the movies begin. For those of you unfamiliar with what storyboards are, they are 'still' scene graphic renderings based on a writer's script, laid-out sequentially in frames that depict the flow of action. In the storyboard, the artist can suggest camera angles and moves, as well as envision the staging and lighting of the scenes. Storyboards are generally used to help refine scripts and action sequences before committing the production to film or video, and it's obvious that if major changes are to be made to a production, they will be made in this stage. Therefore, storyboards are a very important and necessary part of pre-production in the television and motion picture industries.

Pixelight is involved in broadcast and industrial video, and desktop publishing. Our services include everything from supplying animation to quarter-backing video productions to design, layout and output of print material. As a result, we see our fair share of storyboards. Since Pixelight is structured around the Amiga computer system, it was logical for us to want to use the Amiga to render storyboards; and what we will be looking at for the balance of this article is just how we went about

integrating various software packages to do just that for a typical storyboarding project.

Pixelight has been in business for close to three years, and most of the storyboarding we've executed in that time ended up being done in the traditional manner: on paper! We did do a few storyboards using Deluxe Paint from Electronic Arts, printing out each frame on a colour printer, and then pasting up the results on illustration board which we would then show our respective clients, but we found that this process wasn't much different from using markers and paper, and that it certainly didn't seem to use the potential of the computer. All in all, the software available just didn't seem to suit what we had defined as our needs for storyboarding. We needed a package that would allow us to quickly display at least six to eight storyboard frames on-screen. Then give us the flexibility to easily change and re-sequence the frames, if necessary, as well as handle text easily for the frame captions.

We discovered that we would likely have to use a couple of packages to get the result we wanted. Deluxe Paint was great to render in, but limiting in the sense that two storyboard frames per screen seemed comfortable to work with but made it awkward to use for on-

By Nick Poliwko

screen sequencing and display. PageSetter from Gold Disk allowed us to form storyboard templates and display four frames per one screen 'page', but left a lot to be desired when importing pictures into the frames, since PageSetter is unpredictable in its picture conversions from colour to black and white and other software packages seemed to have similar drawbacks. As a result, it became a matter of practicality and efficiency to revert to the old-fashioned method of markers and paper! Until recently.

A program came to our attention, that, when used with Deluxe Paint, became an invaluable storyboarding tool. That program is called MicroFiche Filer from SoftwareVisions. At first glance, MicroFiche Filer doesn't seem like something you'd use for doing storyboards, considering it's a database program, but, if you think about it, storyboards are nothing more than databases of pictures arranged in a continuity.

What we will look at now is how we used the above two mentioned programs on a storyboarding assignment. Beginning with reviewing the script and discussing it with the client, we try to get a feel for how the client wants the commercial spot portrayed. In this case, a fifteen second ad for the Canadian Can Association. After making sure that we're more or less on the right track with the concept, we're ready to go off and start the actual rendering of the storyboards.

Deluxe Paint II is run, and we go into hi-res mode (640 x 400 pixels). Since the graphics are to be presented in black and white, we use only one bit-plane, which gives us two colours, and optimum speed in hi-resolution. We use a pressure-sensitive drawing pad called the EasyI (available from Anakin Research), with a paper taped to its surface.

Going over the script, we begin rendering the frames. The ad is only fifteen seconds in length, so the total storyboard will not need more than five frames to depict the action effectively.

Since there is a certain sketchy, loose look we wished to achieve with the graphics, we decided to introduce another software package to the pro-

THE PROCESS



figure 1



figure 2

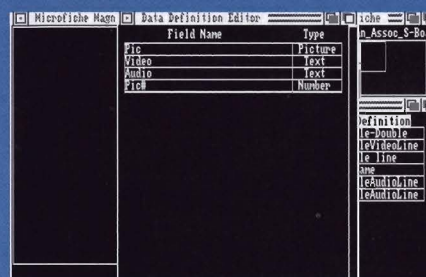


figure 3

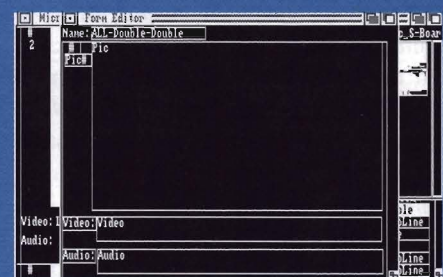


figure 4



figure 5



figure 6



figure 7



figure 8

cess: PIXmate from Progressive Peripherals and Software. PIXmate is an image-manipulation program using features from edge detection to contrast enhancements to colour conversions. We used PIXmate to convert the hi-res images to medium resolution (600 x 200 pixels), this resulted in some of the solid lines in the graphics breaking up, and thus "loosening up" the image. In some instances, the end-result was too extreme, so we also did an edge detection on the converted graphics to maintain the "punch" of the original sketches. We ended up with the renderings looking exactly as we wanted (Fig. 1 & 2).

The next step was to take the finished graphics and get them into an environment where we could sequence them on screen and add the visual and audio text directions to each frame. We now had to make a storyboard template for MicroFiche Filer that we could call up and use for this job and for future assignments.

Since MicroFiche Filer can integrate graphics and text easily, we had no problem in setting up a template fairly quickly. We began with the Data Definition Editor, where we set up our fields, one graphic field for the picture, text fields for the Video and Audio, and a number field for the frame numbers (fig. 3). We kept it simple, and felt that we could easily modify the template if we needed something more complex (for this job, our simple template proved enough).

After the fields were defined, we went about constructing the actual visual template. This was done in MicroFiche's Form Editor as a traditional storyboard frame, with the graphic at the top and the text underneath. We added the frame number to the left of the graphic (fig. 4).

Now, all we were left with was to bring in the graphics we had previously rendered in Deluxe Paint, and enter the text from the script. We increased the size of the Fiche window to full size, this would allow us to scan over all five frames of the storyboard, and then proceeded to bring in the graphics through the Record Editor screen. Microfiche Filer give you the choice of either truncating or squeezing the graphics, since

truncating will only display the top left corner of the picture in the frame, we chose squeezing, which compresses the image and fits the entire image into the space defined.

Shortly, all the pictures were loaded and squeezed into the storyboard database and we could now go about entering the text (fig. 5). This was also achieved in the Record Editor, and within a few minutes, we were finished. To complete the process, we defined a few variations for sorting the database (fig. 6), and now we were ready to scan the set of frames and see how they worked together.

Microfiche Filer gives you a miniaturized view of your database in the upper right corner of the screen. In this area, there is an active box that indicates the size and location of your "magnifying glass" on the total database. By grabbing this box and moving it around with the mouse, you can see various parts of the database magnified in the MicroFiche magnification window (figs. 7 and 8).

Our needs were met! We could finally scan several storyboard frames quickly and easily, remove, edit, or resequence them effortlessly, and do it all "on-screen!"

The job was now almost complete.

The last step involved printing out the storyboard frames as a set through MicroFiche Filer to hand to the client as a reference sheet, and then printing out the individual frames in a larger size through Deluxe Paint to mount on illustration board to display at the presentation.

From script to finished product, production time on the project totalled three hours: a half hour in discussion with the client and two and half hours to render the frames, set-up the storyboard database, and print and mount the final images. Storyboard artists should be prepared to take a close look at the Amiga and those software programs as an alternative to traditional methods of storyboarding, if for nothing else but the time and money saved. □

About the Author

Nick Poliwko is president of Pixelight, a company that specializes in Amiga-based animation and graphics for industrial and broadcast video. Pixelight, 13 Burnfield Ave., Toronto, Ontario, Canada M6G 1Y4 (416) 536-8928

PRODUCT INFORMATION

DELUXE PAINT II

Electronic Arts

1820 Gateway Drive
San Mateo, CA 94404
USA

(415) 571-7171

\$149.95 (CDN)

MICROFICHE FILER

SoftwareVisions Inc.

26 Forest Road
Framingham, MA 01701
USA

(617) 877-1266

\$99.95 (CDN)

EASLY DRAWING TABLE

Anakin Research Inc.

100 Westmore Drive, Unit 11C
Rexdale, ONT M9V 5C3
CANADA

(416) 744-4246

\$599.95 (CDN)

PIXmate

Progressive Peripherals & Software

464 Kalamath Street
Denver, CO 80204
USA

(303) 825-4144

\$59.95 (CDN)

The AmigaBASIC Wheel of Fortune

As you start up the game you will be prompted to answer whether you want to play or enter words? There is a small data file on the disk which contains about five items which are either names, words or short phrases with the clues that correspond to each item. Since there are only five items, they will repeat themselves continuously, therefore, you will have to build up your own library of words and clues. As your library increases in volume it will be less likely that an item will repeat itself during the game.

As you enter the input section of the game you will be prompted to input a name, word or short phrase. You can enter anything as long as your input item does not exceed 37 characters including spaces. If you enter a hyphen (-) or an apostrophe (') as part of your input, these characters will not be covered up during the game play. To avoid confusion, enter all characters in uppercase and as you guess the item while playing the game, enter your guess in uppercase characters also.

Once you have entered your data input item you will be prompted to save the item. If you made a mistake then answer NO and re-enter your item. Once you are satisfied with your item, answer YES to the prompt and you will now have to enter a clue which will corre-

spond to your item. The same rules apply here, as with your item input, you are limited to a maximum of 37 characters but here you may use either upper or lowercase characters. If you wish to enter more items then answer YES to the prompt and repeat the steps above, or answer no and start playing the game. Please note that if you copy this game to one of your own diskettes on which the data file does not exist, the program will automatically create one for you.

Before you start playing the computer will ask you how many players will participate, enter the appropriate number of players (maximum four players). The computer will now proceed in drawing the gameboard and the game will begin. The computer will now have selected an item which each displayed character is hidden by an asterisk (*). At any point in the game any player may click with the mouse on the gadget next to the word CLUE (bottom right of your display) and a window will open up to reveal the clue for that item. Next, click on the gadget next to SPIN WHEEL and the wheel will spin. The values for the wheel are displayed in a box next to the word VALUE (bottom left of display). On the wheel there are values ranging from 100 points to 950 points. Be careful, there are two "lose

your turn" and two "bankrupt" as values on the wheel, therefore if you think you know what the hidden word or phrase is, it may be wise to guess as soon as possible or else you may lose your turn or lose all the points that you have accumulated so far.

If a player wishes to guess the hidden word or phrase he must click on the gadget next to the word GUESS (bottom right of display). A window will open and you will be prompted to enter your guess. Remember to use only uppercase characters and don't forget any spaces or special characters. If the player answers correctly, he will win the round else that player will lose his turn and the game will continue with the next player.

If all consonants in the hidden word or phrase are revealed and only vowels remain, the player will be forced to guess the hidden word or phrase. If the player answers correctly, he will win the round else the round will be forfeit and the hidden word or phrase will be revealed and none of the players will be awarded points.

Although the television version of this game offers three rounds and a speed round, this version of the game has no preset limit of rounds. You may set a time limit or play to your heart's content. □

By Michel Giroux

DESKTOP PUBLISHING ON THE COMMODORE AMIGA

DTP

Welcome to the world of Desktop Publishing, or DTP to the well versed desktop publisher. In this instalment of our humble little column, we will be giving a brief introduction to DTP, as well as what is presently available in the way of Desktop Publishing software. In future instalments we hope to cover in more detail, page layouts, output devices, the postscript language, typefaces, and maybe a makeover or two.

WHAT IS DESKTOP PUBLISHING?

First let us have a look at what DTP is; aside from the fact that DTP seems to be the new "buzz-word" for the late eighties, surprisingly not too many people are fully aware of just what it is. Desktop Publishing, for all intent and purposes can be summarized as "...the creation of documents with the aid of a personal computer." Documents can be any printed material ranging from pamphlets, newsletters, business reports, comics, or books; this is just a brief list, but the applications for DTP are quite extensive. DTP basically allows a few individuals to accomplish in a short time what would have, by traditional methods, required an army of people.

As will be made apparent shortly,

DTP has a few major advantages over traditional methods of typesetting, it is fast and very cost efficient. In the past, to complete a document such as a newsletter, it would have been necessary to hire the services of several groups of individuals:

- (1) Designers for the layouts of the pages.
- (2) Professional typesetters for setting the type.
- (3) Illustrators for taking care of all illustrations that the book is to contain as well as cover design.
- (4) Finally Proof-readers to catch any errors that may have slipped past all the other stages of production.

Making a note of all the individual groups that are involved in this entire operation, one can now see the cost effectiveness of desktop publishing; every single task that is indicated on that list can be accomplished on the desktop with the aid of a personal computer and the right software.

WE SAY WYSIWYG...

What You See Is What You Get, WYSIWYG (pronounced whizzy wig) is also another term that is bantered around quite often. It is often spoken in

By Olusegun Olaniyan

reference to desktop publishing software. WYSIWYG pretty much describes the work environment of the majority of desktop publishing software packages. The typical user interface is an open area on the screen that is often termed the "desktop", this so called desktop is where you create your page "layouts" or designs. Pages are essentially assembled on the desktop; images and text are "imported" onto the pages and can be arranged and re-arranged at will. All of this is done on a work area that permits you to see what the final output will look like; what you see is what you get!

AVAILABLE DTP SOFTWARE...

Presently on the market there are programs that can be used as low cost desktop publishing alternatives, but such programs are essentially word processors with the ability to import graphics into your documents. These programs are referred to as "page integration" programs, and include Kindwords, Pro-Write, VizaWrite, and Excellence!. These programs will give satisfactory results, but have a care, they might not give the "look" that you want in your documents. If you are looking for a true DTP package get a DTP package; although this might be expensive, in the long run you will have a program with all the features that will allow you to do truly professional typesetting.

One feature to look for in a true Desktop publishing program is the fact that it functions strictly as a desktop publisher; this means that text and graphics are created using other paint programs and word processors that are supported by the desktop publisher. Without having to function as a paint program or a full-featured word processor to slow the overall program down, this set-up means that the desktop publishing program has no other function except as a dedicated page layout program; a sort of electronic maestro that organizes the various parts of a document.

For the Amiga, there are a few entry level DTP packages, and so far only one high end package. The entry level programs include City Desk, Pagesetter, Publisher 1000, and Shakespeare. On

the higher end of the scale there is Professional Page. Rumours are circulating that two other high-end packages will soon be released for the Amiga, Publishing Partner Professional, and Calamus; from what has been seen of these two programs, they will be welcome entries into what is a rapidly expanding market.

All of the entry level programs offer dot-matrix output as well as what is called "PostScript" output. PostScript is a page description programming language that is an industry standard with high resolution output devices such as Laser printers and imagesetters. These programs are more than adequate for use in the preparation of documents such as flyers, announcements, pamphlets, or for the truly ambitious, perhaps a novel.

Professional Page 1.1, the high end entry, offers dot-matrix output, but it is

a program that is clearly intended for output to high resolution devices such as laser printers. This is presently the top of the line in Amiga DTP packages and intended for the serious desktop publisher. Although Professional Page is lacking in a few features such as the rotation of text, it still has more than enough desktop publishing power for the average user. Professional Page allows fractional manipulation of both text and images, this translates to the user having very precise control over the alignment of text and graphics. As an added feature of Professional Page, you can do full page color separations; the separated files can be printed directly onto film or plates ready for off-set printing.

Well that's it for this instalment, next time we will take a look at output devices such as laser printers and high resolution Linotronic typesetters. □

Some common Desktop Publishing terms

DTP	Desktop Publishing
WYSIWYG	What You See Is What You Get
Layout	Arrangement or design of a page
Typesetting	The art of arranging text with the appropriate typeface
PostScript	A programming language used by some high quality output printers
Laser printer	A high quality output printer
DPI	Dots Per Inch (the measurement unit for output devices)
Point Size	A measure of type size and other page dimensions, one inch is roughly equal to 72 points
Kerning	Some characters fit closer together and some are further apart, kerning attempts to get the best possible spacing between the characters
Leading	The leading of a block of text represents the amount of space between the base of one line of text and the base of the next

Sound Oasis

There are two ways to get sampled sound files for your Amiga computer. You can take ready-made samples in the public or commercial domains, or you can make your own using a sound sampler. With Sound Oasis you can get samples made for another 8 bit sampler, the Ensoniq Mirage.

The Amiga produces sounds using a technique called sampling. This technique is not unique to the Amiga, it was already used in sampling synthesizers (samplers) even before the Amiga existed. A sound is made up of many components. When using sampling, the two most important components are wave shape and envelope. The wave shape will determine the type of sound; it usually changes with time unless you wish to reproduce a simple shape like a sine wave. The envelope determines how the sound level changes with time.

In most synths, the envelope is divided into four parts.

1. Attack: the time it takes for a sound to get to maximum level
2. Delay: the time it takes to arrive at a sustain level.
3. Sustain: the level at which the sound will stay if the key remains pressed.

4. Release: the time it takes to die down once the key is released.

Using a sampler, you could simply digitally record a sound and play it back as is. This would take into account all of the sound's components. But this method has a few drawbacks, it uses a lot of computer memory and a lot of noise is recorded with the sound. Instead, many samplers replay the wave shape and electronically recreate the envelope. To save on memory, the part of the sound that sustains is recreated by playing over and over a part of the sound at the point where it is stable in nature. This technique is called looping. The quality of the sound also depends on the frequency of the sampling rate used during recording, the higher it is, the more faithful the reproduction will be. But the sampling rate can be changed when replaying the sound which will change the frequency of the reproduced sound so it can simulate the different notes of the keyboard.

The Mirage was one of the first affordable samplers to use such techniques. However, the fact that both the Amiga and the Mirage have the same sampling precision, 8 bits, doesn't make

By Serge Boucher

the samples easily transferable from one to the other. Both the Amiga and the Mirage use the same size disk, but they have different disk writing formats, and information for sound shape, envelope, loop points are stored differently. There are 3 different sounds on every single-sided Mirage disk. Sounds are saved in two groups, upper and lower bank. Each bank can have up to eight different samples each. The Mirage uses multi-sampling, where more than one sample is used to recreate the whole keyboard range. Furthermore, samples can be arranged in four different patches, the Mirage system can be quite complicated, but gives very good results.

I am still wondering how Chris Moullos, the programmer behind Sound Oasis, managed to make the program read Mirage format disks from the Amiga's DF0: drive. I have even tried different Mirage DOS version disks with no problem (the Amiga is not the only machine with changing DOS).

PROGRAMS'S OPERATION

Once you have booted the Sound Oasis disk, double-click on the program's icon to get things started. The first time you use the program you must load Mirage sounds from a Mirage sound disk. These disks are available at music stores and are inexpensive (some stores have a system where you can rent the disks for a very low price). You have the choice of loading one of the three sounds, or just the upper or lower bank of one of them. The loading process can take a few minutes, so you will have to be patient. Once the sounds are loaded in the computer, you can listen to the result by either playing from a MIDI keyboard on any one of the sixteen MIDI channels, directly with the computer keyboard or with the keyboard gadget at the bottom of the screen which comes with gadgets to change the MIDI channel, tune the keyboard and select the patch that is used.

Also included in the menu to select input device, is an item to turn on or off the Amiga's internal low-pass filter, for

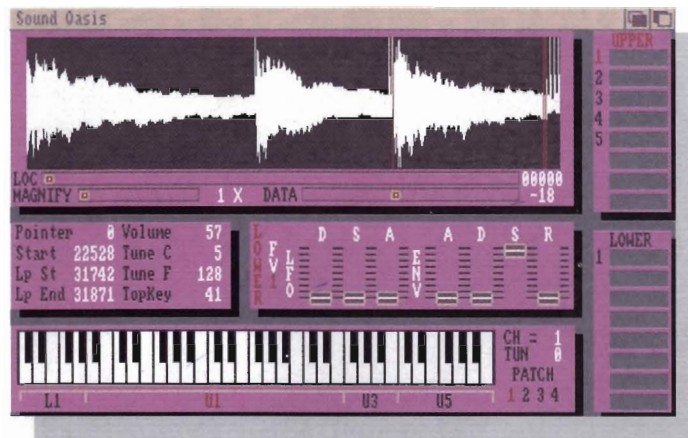


Fig 1

Once a sound is loaded, the sound data is plotted in the waveform window. You can then modify LFO, ADSR envelope and loop point settings with the gadgets provided.

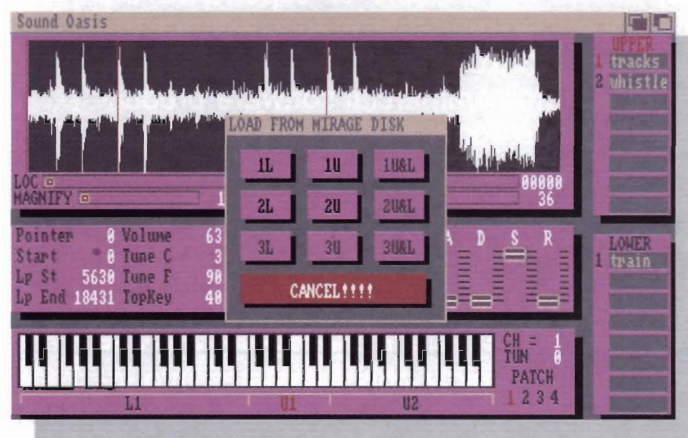


Fig 2

There are three sounds on a Mirage disk, you can choose to load anyone of the three or just the upper or lower bank of a sound.

those of you using an A500 or A2000. The filter cannot be turned off on an A1000, although you will see the power LED dim or become brighter when selecting or deselecting the item.

As seen above, a lot more information has to be loaded with the raw sound data. Most of this is loaded from the Mirage disk except for the LFO (Low Frequency Oscillator) and envelope settings. To adjust these, you will have to use the gadgets provided. Although looping points are loaded with the sample, there are gadgets to change and adjust these along with the sample's beginning point. These are displayed as red lines with the waveform in the Waveform Window at the top of the screen. The waveform displayed is either for the upper or lower bank depending on the sample selected at the right of the screen. You can easily adjust them using the pointer in the Wave-

form Window, but creating good loops is an art, and the ones supplied with the samples are usually the best that can be obtained. Still it is nice that the feature is included.

Once you have a sound or sounds that you like, you can save them in one of three formats. The Sound Oasis format saves all the samples and its settings as they came from the Mirage disk with the changes you made to them. The names given to the samples are also saved. You can save individual samples as an IFF instrument to be used in programs such as Deluxe Music Construction Set, or as an IFF one shot sound, where all the samples in a bank (upper or lower) are saved as raw data to be edited in programs like AudioMaster. You cannot reload IFF format sounds, so don't forget to save the sounds in Sound Oasis format if you want to keep them on an Amiga disk.



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CONTACT:

Lisa Sama

AmigoTimes

5124 St. Laurent, Suite 100

P.O.B. 1228

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CONCLUSION

As a sound editor, Sound Oasis is limited, there are no sound data editing functions. Except from the adjustments mentioned above, there is not much more that you can do, and some of these might need some tweaking. The gadgets for changing the numerical values need getting used to, the regions where the mouse pointer must be are not indicated, you must click a couple of times to make sure the pointer is at the right place. Also the string gadgets for writing the sample's name are unusual, when you click inside one of the gadgets, there is no cursor telling you where you will start typing inside the gadget.

Chris Moullos has told me that there should be an updated version coming somewhere along the road, this update should correct the few quirks in the program. But the basic idea behind Sound Oasis is to expand the number of sounds available for the Amiga, and it does succeed in this matter, more powerful sound editing can be done with other programs once the Mirage sounds are converted to Amiga format with Sound Oasis. The Mirage has been on the market for some time now, and the quantity and quality of sounds available for it are impressive. Sound Oasis allows Amiga users to access this wide resource of sampled sounds. □

Sound Oasis

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PUBLIC DOMAIN & SHAREWARE REVIEWS

(continued from page 33)

You have probably seen this program around, but this is the latest version, hot off the press. This version is faster and has more features.

LLog (Lightning Logger) logs files from any floppy or hard drive and causes all directories, files and filenotes to be cataloged. It also saves the volume creation date, blocks free, blocks used, % full and volume size. LLread (Lightning Reader) reads the library (log) files created by LLog.

NASA swears by this program (yes, they use Amigas too). Try the demo on AmigaTimes v1.3 and you will see how your life will change.

DISKSALV v1.2

by Dave Haynie

(AmigaTimes Disk V1.3)

DiskSalv v1.2 is a faster, and smarter version of a great old disk recovery program. DiskSalv is a disk recovery program for all Amiga file system devices that use either the AmigaDOS V1.2/V1.3 Standard File System or the AmigaDOS V1.3 Fast File System. This version will "salvage" files and directories from most damaged AmigaDOS devices, including hard disks and even some RAM disks. The DiskSalv program is run and controlled completely via command-line arguments and currently can't be run from the Workbench.

DiskSalv will scan a bad disk volume from start to finish looking for valid AmigaDOS file or directory blocks that can be recovered, and will restore these items to any AmigaDOS volume. It does not make any attempt to fix the bad device in place, thus, any file that can't be restored with DiskSalv might possibly be restored with an alternate method. DiskSalv uses normal AmigaDOS I/O routines to re-create the recovered files.

There are also options allowing the Disk Salvage pass to proceed interactively instead of automatically whereby the user is prompted at each file or directory to reply; 'Y' (will recover that

file or move into that directory), a reply of 'N' (will skip that item). This program is public domain but the author would appreciate a contribution to GreenPeace to salvage what is left of our environment.

POINTER ANIMATOR

by Tim Kemp

(AmigaTimes Disk V1.3)

The pointer animator can animate your Workbench pointer, thereby providing far more freedom of expression in your standard Workbench display. Pointer animations can be from three to fifteen colors with a height varying from 1 to 255 pixels.

It does this by substituting its own pointer for the default pointer and then by showing the frames rapidly in sequence, an illusion of motion is created. The shorter the time between frames, the smoother the animation and the more frames needed to represent the same total time. The maximum speed of a pointer animation is 60 frames/sec in North America and 50 frames/sec in most European countries. The image sequences used are stored in standard IFF ILBM files, allowing you to easily edit predefined animations and create your own pointer animations.

VIRUSX v1.6

by Steve Tibbett

(AmigaTimes Disk V1.2)

There are a number of CLI-based virus checkers available that do their job just fine, but if you're not into using the CLI, what do you do? You can use VirusX!

VirusX searches for the:

- SCA virus and removes it from RAM
- Byte Bandit virus both in RAM and on Disk.
- REVENGE virus and then renders it helpless in RAM before telling you about it. It will also report its presence on disk.
- Byte Warrior virus.
- Northstar Virus

VirusX can be placed in your Start-up-Sequence. When run, it opens a small window so you know it's there. When a disk is inserted into a drive, it is automatically checked for viruses and whether or not its boot sector is standard (a non-standard boot sector might mean it is either a new virus or a commercial program using a custom boot block for something constructive).

When a suspicious non-standard boot block is found, a requester warns the user that a specific virus has been found or that the boot code is non-standard. The user is given the option to either ignore it, or to remove it (rewriting the disk's boot sector). The boot code written back to the disk is the same boot code that the AmigaDOS INSTALL command provides. When a virus is found it will also display a "Copy Count" (number of disks that have been infected by that "branch" on the "tree" that the virus is on).

Another option allows you to view the boot blocks of your disk by clicking in the VirusX program window and typing the drive number (from 0 to 3) you want to look at.

Steve Tibbet has also released the source code for VirusX, so there is no need to suspect that there are more viruses within it, as has been suspected of some virus protection programs.

(at press time we received the latest, enhanced, version of VirusX which sports a new user interface and will do battle with even more virus strains. ED)

RAINBENCH

by Brendan Keliher

(AmigaTimes Disk V1.2)

RainBench is a simple program that cycles the hardware color registers of your Workbench screen. A small program bar is placed on your screen and from its menu, you can control the program. You can even control the cycling rate.

This program is intended to break up the monotony of your Workbench screen. Part of the fun is experimenting with its menu selections. Also, try changing the Preference settings of your Workbench colors and then go back to Rainbench. □



Building Blocks: The MIDI Library

In the first part of this series on MIDI programming (AmigoTimes V1.2) we took a look at how information is coded into the MIDI communication standard. We saw that there is a lot of information that can be transmitted from synthesizer to synthesizer, or from computer to synthesizer. Now if we want to use this to bridge the gap between computer and synthesizer, we must write programs capable of using this information.

In the Amiga, MIDI information is sent and received at the serial port (where the modem is usually connected). MIDI, like RS-232, is transmitted in serial format but the way this is done in hardware is different. An interface will translate the signals from MIDI format (current loop) to RS-232 format (voltage levels). This means that we will have to write routines to deal with data flow to and from the serial port. Also, we have to make sure that if more than one process is sending data to the

serial port, messages won't get mixed up.

As I mentioned in last month's column, MIDI messages are made up of a status byte followed by one or more data bytes. We have to make sure that a message is sent completely before another process sends its message. This can be done by implementing a message passing system like the one supported by the Exec (Amiga's Executive Kernel). Therefore, we must program at a very low level of the computer, which can become complicated.

Considering every program for MIDI will need these features, it would be interesting to have a library of functions to deal with this. This is what the MIDI library is all about. This library, which comes as a standard disk-based Amiga library, contains all the low level routines needed to write MIDI applications, freeing you to concentrate on your particular needs. This library con-

By Serge Boucher

tains the foundations on which every MIDI program can be built. It was written by Bill Barton of Pregnant Badger Inc. and he placed it in the public domain. Along with the features listed above, the library contains other niceties: Unlimited message merging, message filtering, usable from C, Assembler or BASIC, supports multitasking, supports full MIDI specifications and all this in a library smaller than 10K.

THE MIDI LIBRARY

As hinted before, the MIDILib is based on a message passing system. This is the same type of system used by Intuition to pass messages to your program. Messages are sent and received at node structures, these nodes can be either public (they are named when created and other programs will be able to access them), or private (where access is reserved to the program that created the nodes). This might seem complicated at first, but remember that the library contains all the functions necessary to create the structures needed. There are two types of nodes, Source and Destination nodes. Source nodes are where you will place messages to be sent, and Destination nodes will be where you pick up messages.

The next step will be to create routes between the different nodes, these routes will serve as links to other nodes, it will be the distribution network of the messages. It's interesting to note that you can have more than one route between two nodes. This means that certain applications become very easy to write. For example, if you want a program to play a chord when you play a single note on the MIDI keyboard, just link two nodes with more than one route, and for each route, specify a different note offset.

This brings us to another useful feature of the MIDILib, message filtering. When you create a route between two nodes, you must initialize a RouteInfo structure. In this structure you can specify the type of filtering or modification that will be done to the MIDI messages passing through this route. This is done by setting flags in the the RouteInfo structure. Flags can determine such

things as what type of message will pass, what MIDI channel is supported, if an offset is applied to the channel number or the note number, and for what System Exclusive ID or controller number the message is intended for.

There are two specialized nodes for dealing with the serial device. These nodes are public and are named "MIDI-In" and "MIDI-Out." When you want to send a message to a MIDI device, you must create a Source node where the message will be placed, and link this source to MIDIOut using a route.

STEP-BY-STEP

Here are the steps needed to send or receive messages to your MIDI synthesiz-

**It is usable from C,
Assembler or BASIC,
supports
multitasking,
supports the full
MIDI specifications,
and all this in a
library smaller than
10K.**

er. For more detailed information, please refer to the documentation files on this month's AmigoTimes disk. In either case you must first open the MIDI library. This must be done in order to access the functions in the library, the procedure is the same as for any library, and uses the OpenLibrary function. If you want to send messages you must first create a source node, this is done by using the CreateMSource function. If your program wants to receive MIDI messages, you must first create a Destination node using the CreateMDest function. You must now define a RouteInfo structure that will be used to create a Route. This is where you will specify the processing that will be done by the Route.

Now you have all the parts necessary to create the Route. The function

used to create the route will depend on the type of nodes used. If the route is to link two private nodes, you must use the CreateMRoute function, if the two nodes are public, then MRoutePublic is used. If the source is private and the destination is public, then use MRouteSource. The opposite case is handled by MRouteDest. Remember that the parameters passed by these four functions are in order: the source, the destination and the route info. If the node is public you must use its name to reference it, if it is private use a pointer to the node structure. The RouteInfo structure is always referenced by a pointer to the RouteInfo structure.

Now that we have a sender and a receiver, we can send or receive messages. If you want to send a message, use the PutMIDIMsg function, and to use as its parameters, the source node pointer and a pointer to an array containing the message. Message reception is done with the GetMIDIMsg function; its parameter is a pointer to the Destination node.

WAITING FOR MESSAGES

In order for our program to multitask, instead of creating a programming loop in which we will test for the presence of a message, we will use the Wait function available in Exec. Please refer to the examples on the AmigoTimes disk, the example programs that comes with the MIDILib shows the proper way to wait for messages. If you want to use the MIDILib for creating programs that will run in the Intuition environment, you will also need to wait for Intuition messages also, this implies creating a multiple wait system. Waiting for multiple signal bits is covered in the book "Amiga Rom Kernel Reference Manual: Exec." (To help you getting started, I have included on the AmigoTimes disk a section of the source code for the "Dynamic MIDI Note Chart" program found on the V1.2 of the AmigoTimes disk.)

To recapitulate, the steps are:

1. Open the MIDI Library using the OpenLibrary function.
2. Create a Source node for transmis-

sion, or a Destination node for reception of MIDI messages.

3. Fill a RouteInfo structure specifying what processing is to take place in the route.
4. Create the route between the Source node and the "MIDIOut" node for transmission, or between the Destination node and the "MIDIIn" node for reception.
5. Send messages using PutMIDIMsg, or get messages using GetMIDIMsg.

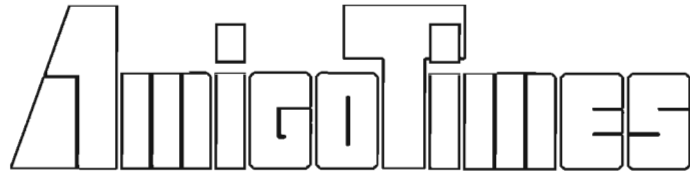
This may seem complicated at first, but you will see that when you become familiar to the MIDILib, it makes MIDI programming very easy and that it is much easier than programming at the device level.

AmigaBASIC programmers can also take advantage of the library, the BASIC examples on the AmigoTimes disk will show you how it is done. Jim McConkey from Triangle Audio has graciously contributed BASIC examples to the MIDILibrary. These programs and others on the AmigoTimes disk are part of the MIDI Library. Unfortunately there was not enough disk space to include all the files on the MidiLib distribution disk. However all the files needed to compile source code written either in Lattice C or Manx C are included on the AmigoTimes disk. For those who want to get more seriously into MIDI programming, I suggest you get the complete Library and supporting files from Bill Barton, he will send you the most recent version of the MidiLib for a minimal fee, his address and phone number are at the end of this article.

Now that we have the tools we were looking for, let's get back to those compilers and start writing the programs that will make our MIDI setup sing! □

Bill Barton
Pregnant Badger Software
 1111 El Sur Way
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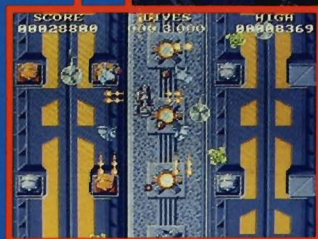
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