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Table of Contents

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ON POINT: <i>Notes from Editor Tom Bucklin</i>	2
NEWS:	
<i>Fall Comdex Report</i>	4
<i>Badge Contest Winners</i>	41
REVIEWS:	
<i>Dark Castle - New fantasy action game brings a Mac favorite to Amiga</i>	6
<i>Word Plex - An adaption of a popular TV game show.</i>	8
<i>Photon Paint - This new HAM paint program will dazzle</i>	10
<i>Head Coach - A realistic Pro Football Simulation</i>	12
<i>PixMate - Professional image processing and picture manipulation</i>	15
<i>KindWords - A personal word processor with all the extras</i>	18
<i>Amiga LightPen - Inkwell introduces a lightpen for the Amiga</i>	22
<i>WBTools - Customize your WorkBench menus using clever new tools</i>	25
<i>Live! - The wait is over, realtime frame grabber is here</i>	27
<i>Newsletter and Studio Fonts - Two fontsets which advance Amiga typography</i>	31
<i>ProDrives - Plug compatible 3.5 inch drives from Progressive Peripherals</i>	33
<i>Gee Bee Air Rally - Flying can be old fashioned fun with this barnstormer</i>	34
<i>Arkanoid - The Arcade game comes home</i>	38
<i>Marauder II New Release - The backup continues</i>	40
<i>Amiga TrackBall - Amiga version of WICO's favorite</i>	45
<i>Custom Screens - Basic programs can be beautiful</i>	46
<i>ConSoundtration - Digitized sounds make this one unique</i>	48
<i>Read-A-Rama - Early reading games from Unicorn</i>	53
SPECIAL REPORT:	
<i>Protect Your Amiga from Power Problems</i>	50
ADVERTISERS' INDEX:	56



On Point

Notes from editor Tom Bucklin

December already, the Holiday Season is here, and we all know that brings the peak buying season for personal computers. Every manufacturer from Apple to Zenith is filling the airwaves and pages with praises for their latest technological wonders. Of course, Commodore is also heavily promoting the Amiga 500 and 2000. We still have the only personal computer with true multitasking, 4096 simultaneous color display, both CLI and mouse interface, 512K to 9 MegaByte memory capacity, 4 channel 9 octave stereo sound, and a Motorola 68000 all standard. We expect more than a few A 500's will be under the tree, if Santa can tear himself away from his own. We've tried

extra hard to report on some of the many new products, both hardware and software, which could be filling your stockings this Christmas. In these pages you'll find several new games, more new graphics software, a trackball, education programs, and a new wordprocessor. In the past two months the flood of new products for the Amiga, has changed the nature of our job. We now have the pleasure of sorting through to find the most interesting and significant products to report on. December also

means the end of the year, and what a year this has been for Commodore and the Amiga. The year started off with the exciting announcements of the 2000 and 500. Amigas would soon be in more homes and offices. This excitement however, was followed all too soon by the Rattigan incident. Irving Gould took charge, and with the help of Al Duncan and Rich McIntyre, the new Amigas made it into production. To top off a busy year, Mr. Gould very recently announced that Max Toy was the new President of Commodore USA. Mr. Toy must now find a way to relate his MSDOS sales experience to the much more unique features of the Amiga, and to deal with Commodore's weak reputation in the business world. We're sure that Mr. Gould has set some high targets for 1988 US sales of Amigas.

Also during 1987, several new Amiga software trends developed. The introduction of desktop publishing packages occurred as expected. However the development of many 3D animation packages was a pleasant surprise. The use of HAM mode has also expanded dramatically. Some of the 3D animators use HAM, as do several new paint programs. Even Ray tracing has become a "standard" application!

Amiga word processors now handle multiple fonts, graphics, fancy formats, and even color. With the expansion possibilities of the A2000, the next year may be even more revolutionary.

December also means that the Sentry is six months old. We hope that we have succeeded in our mission: to bring you the Amiga news in a timely, accurate, and interesting manner. We have tried to make each issue more informative than the last, while growing month by month.

As we look towards the coming year, we will be growing in size, enhancing our format, and adding a reader service card for your convenience. We will continue to expand our coverage of Amiga news as the community grows. We're also planning a couple of surprises as well.

Our thanks go out to our readers. Your positive response to the magazine has enabled us to bring you even more coverage of the things you want to know about. We also want to thank our advertisers. Thank you for your positive comments about *The Sentry*. Your support encourages us to create a medium for display of your products that is continually better. To all, have a safe and enjoyable Holiday Season and a Happy New Year!

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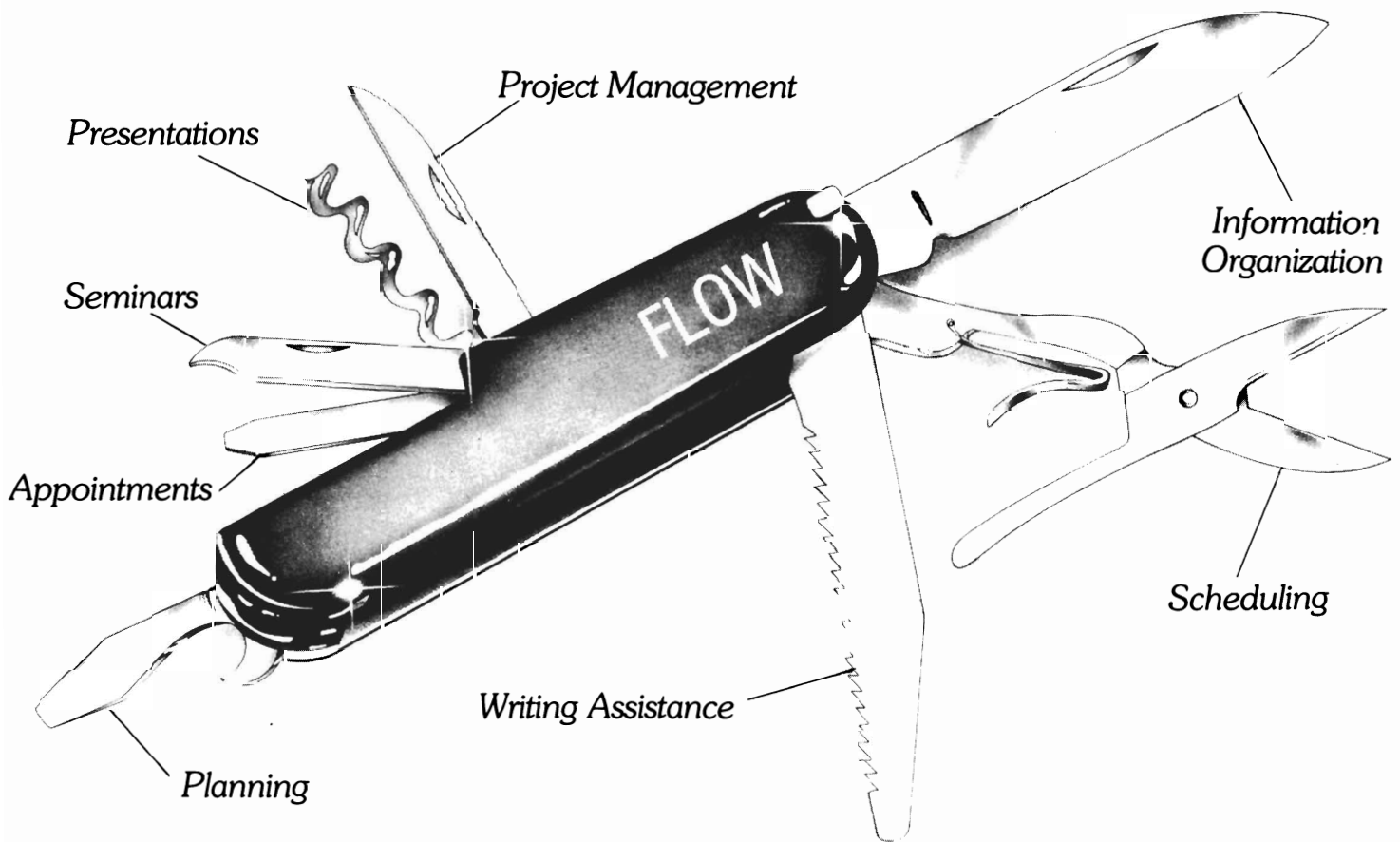
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COMDEX - Fall

Flooded, but not washed out

by Revé Valenz

The fall 1987 COMputer Dealer's EXpo (COMDEX) started out as a small get together for mini and microcomputer dealers. At that time CP/M and S100 systems were the hot personal computer products. Attendees were cigar smoking store owners, hardware vendors, and a few dedicated hackers. The most recent COMDEX was held at the end of October, in Las Vegas Nevada. Over 70,000 people attended — a new record for any computer show or exposition. The busy week was capped by torrential rains and flooding which trapped many attendees in their hotels but didn't dampen the excitement.

Over the years, Comdex has changed from a relatively small narrow-focus selling event, to the most important personal computer convention and conference of the year. MIS directors, Chief Financial Officers, and other corporate buyers rub shoulders with Bill Gates (Microsoft), Phillippe Kahn (Boreland), Tim Sculley (Apple) and many other computer luminaries. They come to see the latest hard-and-software and to hear the new announcements.

Unfortunately, during the past two years, Comdex has become

a MS-DOS stronghold. This is due to market trends and also to poor vendor decisions. Commodore skipped a couple of shows, so did Apple and several others. During this time IBM and IBM clonemakers were able to create the impression that they were the only serious personal computers. Fortunately, the folks at Commodore marketing realized that they have no choice. If you want to sell personal computers, you must exhibit at Comdex. This fall's show was about 85% MS-DOS, 10% Apple with the remainder spread among many other computer vendors.

You can get a sense of the show this true story. Ted Drude the publisher of Computer Shopper held a well attended awards ceremony during the first days of Comdex. "Best Buy: awards were given in many hardware and software categories. The Amiga 500 won the award for best computer buy of 1987. As Ted announced the winner, the hall filled with deafening silence.... Only a few die hard Amiga fans shouted, clapped and whistled. I doubt that you'll read about this award anywhere but here and Computer Shopper. Most of the press coverage and attention was directed at announcements by IBM regarding

their new OS/2 operating system. By the end of 1988 this new OS may allow PS/2 owners to do what Amiga owners have been able to do since September 1985: Multitasking, Windows, Auto-Config, address megabytes of memory, etc. Never mind. .. For the rest of this article we will focus on Amiga news.

The Commodore exhibit was not in the main hall, which meant that you had to search for it. (You need to know that Comdex is so large that it spreads over many buildings). It may have been hard to find, but the exhibit was kept busy with streams of enthusiastic attendees. AMIGA systems were only one part of the Commodore display this fall. Both 64 and 128 systems were given prominent positions. This is a change from recent Commodore Comdex strategies. The exhibit was divided into many areas, each one staffed by a third party vendor of Amiga hardware or software.

Commodore executives were present in abundance. Irving Gould, Chairman of the Board, Max Toy, Commodore USA's new president, Rich McIntyre and other executives were prominent. As usual, official meetings and announcements yielded no hard information. Rumors of

new products were neither denied or confirmed and sales figures remain a deep secret. However, sharp eyes and prying minds saw several interesting items at the Commodore exhibit. An Amiga was equipped with a 68020 accelerator board produced by Commodore. An 80286 version of the BridgeCard was also sitting quietly in the background. Neither of these boards were being demonstrated or discussed in the open. The most obvious goodie was a new Hi-res, non-interlaced monochrome monitor for desktop applications. This device was seen running CityDesk with a rock steady resolution of 1008 by 800 with four shades of grey. Reportedly the monitor contains a 75 Mhz special chip which combines two interlaced frames sent from the Amiga into one non-interlaced display. How much, when will it be available, will it work with the 1000 ?? All of these questions await answers.

Scanning the exhibit area, a new trend in Amiga products soon became obvious. There are lots of hardware add-ons being introduced. Up till now, you could count the number of third-party hardware marketers on one hand. When hard-nosed businessmen invest in manufacturing hardware products, they expect to make sales and money. Based on the explosion of new products, many firms must be counting on increased Amiga sales.

Even though AmiExpo was just a few weeks prior to Comdex, a number of new Video products sprouted like the green giant's peas. Mimetics announced that their AmiGen broadcast quality genlock will retail for \$199 and be distributed by Southern Technologies. Mimetics is also producing a framebuffer which sits inside the A2000 in the special video slot and can display over 2,000,000 colors. Newtek announced a

Three volumes of still sequences, men, women, and animals will be produced for use with animation software.

Other new hardware included two new 3.5 inch disk drives from Progressive Peripherals. The "Pro Drives" are for use with the 500, 1000, and 2000. (See review in this issue). These plug-compatible units represent another desirable trend. Successful computers thrive when third party vendors produce competitive solutions.

InkWell Systems introduced the first Amiga light pen. InkWell are well known for their C64 and IBM light pens. (See review in this issue). The Supra booth was busy selling their new 2400 low priced Supra Modem.

Supra will soon introduce a 10 MegaByte hard disk drive which works with their 4 X 4 controller. It will reportedly cost existing Supra owners only \$400 to add this flexible new storage unit.

We'll be kept busy testing and reviewing the many new hardware and software products introduced at Comdex. The Amiga presence was not limited to the Commodore booth. Liquid Light was a big draw at their own booth. They market a Polaroid Palette screen photography device. ALL of their demo units were hooked up to Amiga's and produced outstanding results. As usual, the Amiga gets attention for its graphics and the underlying processing power is glossed over...

A Boston area firm, Micro Way announced a \$599 color de-interlacing device. The "FlickerFixer" is scheduled for shipment in January 1988.

new ADO board which also uses the A2000 video slot to perform TV quality special effects including page peel. Live!, the original Amiga frame grabber, was actually on sale. This device will support all Amiga display modes, including HiRes HAM. Perhaps this is the long awaited answer to the problem of hi-res jitter.

Video related software was also evident. Electronic Arts announced Deluxe Productions, a special video effects production package. Byte-by-Byte introduced Animate 3D, the companion package for animating Sculpt 3D images. Right Answers Group were showing the Director, their new animation software. DevWare was discussing plans for new animation clip art.

Dark Castle

**THIS POPULAR MacINTOSH GAME
IS NOW AVAILABLE FOR THE AMIGA**

by Ernie Tapman

A black castle sits high atop a hill. Gray clouds partially cover the full moon and creatures of unknown origin lurk in the darkness. Lightning flashes and you hear the crack followed by the roll of thunder. The sound of music eerie enough to chill your bones flows from both speakers. So begins the medieval adventure game Dark Castle. You play the role of a Knight who must succeed on a dangerous mission - to overthrow the Black Knight.

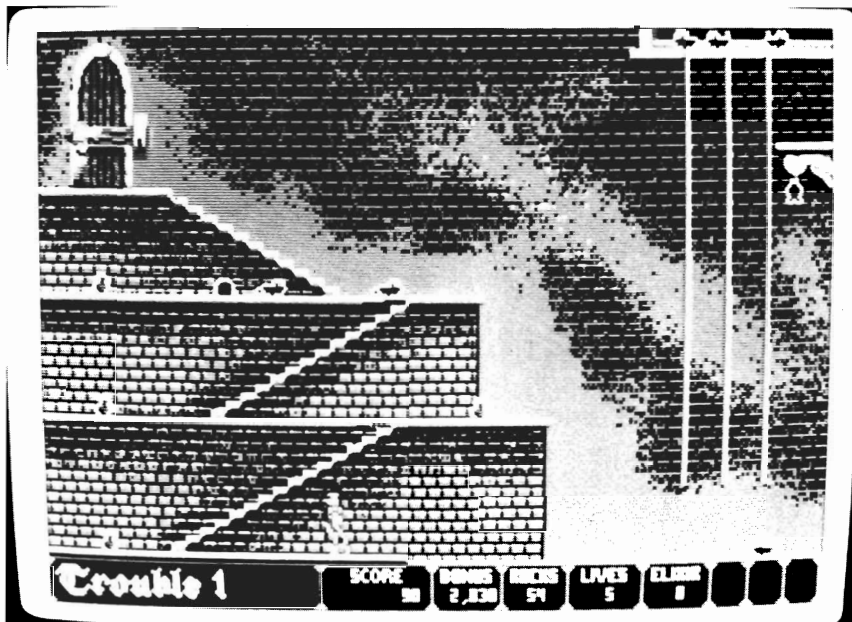
Click your mouse once to proceed to the drawbridge where your quest begins. Here you select an experience level which ranges from beginner to advanced. Other selections made with mouse clicks include: quit (not yet brave knight); demo (a preview of the various rooms); and info. Novice knights should select info to review information on how to complete the task. Now click the mouse button on "Play." The squeaky drawbridge lowers and you enter the Great Hall. You will be standing before several doorways feeling

confused and wondering which doorway to explore first. You must pass through fourteen dangerous rooms, each more treacherous than the previous one. Each room is guarded by rats, bats, vultures, mutants, robot guards, henchmen, dragons or gargoyles. You are given only five lives to achieve your goal. Be prepared to use them up quickly.

The fast pace and large quantity of dangers will require practice to survive. You use many rocks as weapons to throw at the evil creatures. Keep your eyes peeled for bottles of elixir which are scattered throughout the castle. You must find them in order to ward off bat and rat bites. As you master rooms, you will receive a mace, more rocks, and a magic shield to aid you in your fight.

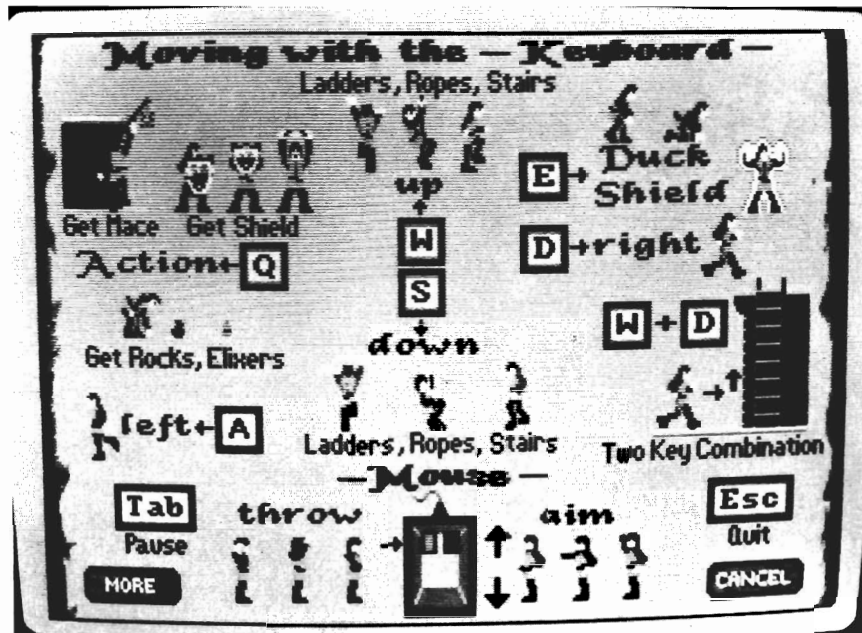
The fourteen rooms consist of dungeons, laboratories and caves. The terrain is varied and you will climb up and down ladders and ropes, jump over trapdoors, and slip by whip-cracking henchmen and Merlin the Magician. Of course, all of these characters kill first and ask questions later. The adventures vary in each of the fourteen rooms, but each one seems harder than

A host of squeaking rodents deter you from your quest



(continued on next page)

The help screen provides a graphic display of all the important weapons and their usage



the last. I will not describe the adventures in detail, as the mystery and charm of the game is experiencing them firsthand

One of the outstanding features of Dark Castle is its use of stereo sound and music. There are many unusual sound effects in each of its screens. The sense of fast action is complemented by squeaking rats, rustling bat wings, moans of Mutants, etc. The graphics are also sharp and very colorful. Our hero's movements appear realistic, and are sometimes humorous. When he falls, stars appear around his head and he yells woo-ooo. Other sounds made by the good knight include grunts as he throws rocks, and yeah! as he picks up valuables.

Dark Castle provides several options for game control. You can use keyboard, joystick or mouse. I found that using the keyboard was most responsive. The joystick seemed sluggish

and awkward in comparison. You can use the mouse to move about and to hurl rocks. Don't miss the INFO section at the drawbridge screen. A series of animated and illustrated screens presents every detail of the keyboard and mouse controls. This section is a masterpiece of clever presentation.

Three-Sixty Pacific Inc., the makers of this game, have limited the printed directions in order to enhance the mystery of these adventures. Fortunately the Info and Demo functions give you enough information to get going. The game consists of two disks, one of which is copy protected. There are keys to pause the action and to quit in the middle of a game, but there is no way to save a game in progress. Once you lose your fifth Knight, you will return to the Drawbridge screen.

I would suggest starting at the beginner level in order to learn

what to expect in each of the fourteen rooms. After a few games you will be ready to progress to the advanced level. If you enjoy fast-paced varied action games, Dark Castle will provide you with many frustrating fun-filled hours of adventure.

Dark Castle

Three-Sixty Pacific Inc.
2105 South Bascom Ave.
Campbell CA, 95008

WordPlex

The Wheel of Fortune for the Amiga (without Vanna)

by Carl Bennett

Par Software Inc. has introduced an Amiga version of the popular phrase guessing game Wheel of Fortune. One to six players may compete by "spinning" for dollars and filling in the blanks of a secret phrase. The game was written by James Sanders who has included many Amiga features and created a lively and educational program.

Wordplex will run on a standard Amiga with 512K and Kickstart 1.2. You begin by clicking the game Icon. If you

have extra memory, you can multitask Wordplex with just about any other program. To switch from Wordplex to other programs or WorkBench use the Left-Amiga-N key press. The game uses Amiga speech capabilities to enhance its educational value. If you get tired of all that talk, you can turn speech off.

The colorful screen is divided into three large areas. At the top of your screen the puzzle is represented by a series of blue boxes with white boxes representing spaces. On the lower left is a

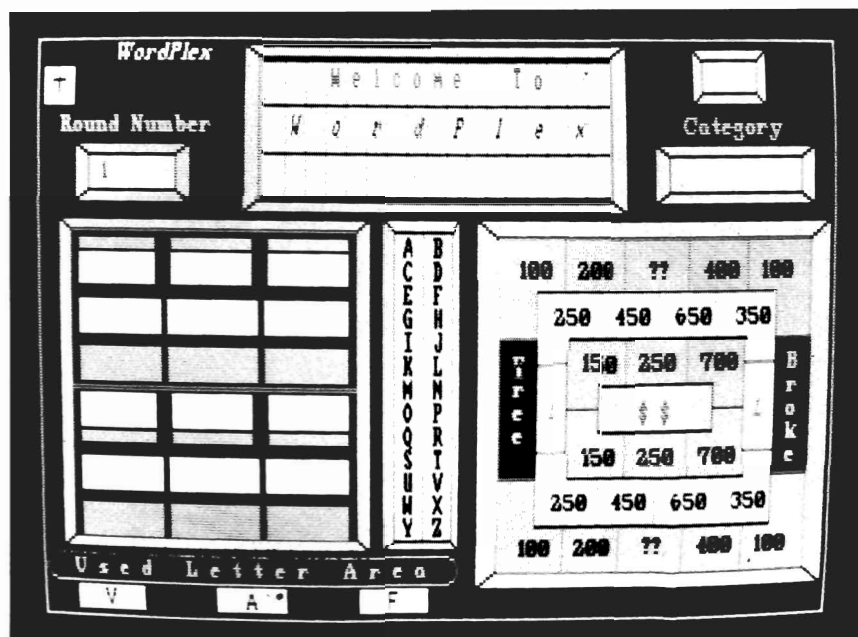
score board with space for up to six player names and scores. On the lower right the wheel is represented. Dollar values range from 100 to 700 with free spin and broke included. (The diamond rings and bonus prizes are not included in this version.) In between the score and wheel is an alphabet. A player clicks with the mouse pointer to guess a letter. The screen also includes a display of the letters which have been selected during the current round.

Game play is simple and direct. Each player gets a turn at spinning the wheel. He then guesses a consonant. For every occurrence of that letter in the puzzle points are awarded. When you see enough letters to figure out the phrase, press the help key. A requestor box will appear and the voice will prompt you to type solution. If you are correct the voice will repeat the phrase. What makes this implementation special is the wide selection of phrases and the Wordbase.

The program disk includes nine categories of phrases: persons, places, things, titles, phrases, events, quotations, people, and cliches. At the beginning of each game you use a pull down menu to select the "WordBase" you de-

(continued on page 54)

The Wordplex play screen



AVAILABLE NOW! StarBoard2

If you've owned your Amiga® for a while now, you *know* you definitely need more than 512k of memory. You probably need *at least* double that amount...but you might need as much as an additional two megabytes.

We want to urge you to use **StarBoard2** as the solution to your memory expansion problem –and to some of your other Amiga-expansion needs as well!

It's small, but it's BIG–

Since most of you want to expand your Amiga's memory without having to also expand your computer table, we designed **StarBoard2** and its two optional "daughterboards" to fit into a sleek, unobtrusive Amiga-styled case that snugly fastens to your computer with two precision-machined jackscrews.

The sculpted steel case of **StarBoard2** measures only 1.6" wide by 4.3" high by 10.2" long. You can access the inside of the case by removing just two small screws on the bottom and pulling it apart. We make **StarBoard2** easy to get into so that you or your dealer can expand it by installing up to one megabyte of RAM on the standard **StarBoard2** or up to two megabytes by adding in an Upper Deck.

This card has decks!

The basic **StarBoard2** starts out as a one megabyte memory space with 0k, 512k, or one megabyte installed. If you add in an optional **Upper Deck** (which plugs onto the Main Board inside the case) you bring **StarBoard2** up to its full two megabyte potential. You can buy your **StarBoard2** with the Upper Deck (populated or unpopulated) or buy the Upper Deck later as your need for memory grows.

And you can add other functions to **StarBoard2** by plugging in its second optional deck –the Multifunction Module!

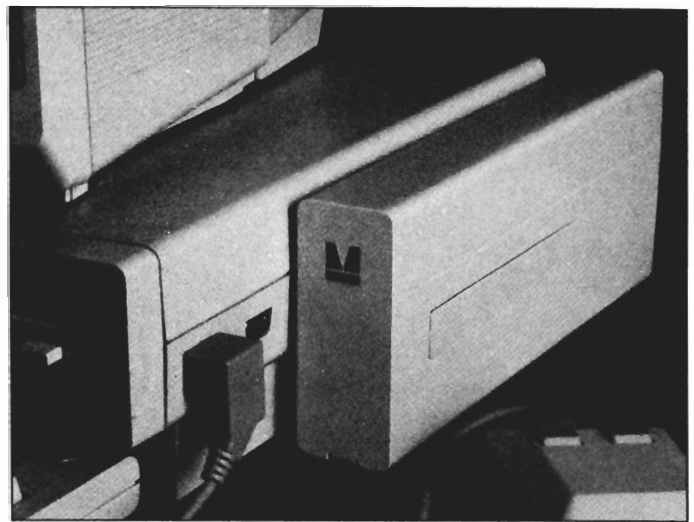
StarBoard2: functions five!

If we count Fast Memory as one function, the addition of the **Multifunction Module** brings the total up to five!

THE CLOCK FUNCTION:

Whenever you boot your Amiga you have to tell it what time it is! Add a Multifunction Module to your **StarBoard2** and you can hand that tedious task to the battery-backed,

**Auto-Configuring
Fast RAM
Zero Wait States
User Expandable
from 512k to
2 Megabytes
Bus Pass-Through
MultiFunction
Option: battery/
clock, FPU,
parity, Sticky-Disk**



real-time clock/calendar. A small piece of MicroBotics software in your WorkBench Startup-Sequence reads the clock and automatically sets the time and date in your Amiga. And the battery *is* included (we designed it to use an inexpensive, standard AAA battery which will last at least two years before needing replacement).

THE FLOATING POINT FUNCTION:

If any one aspect most characterizes the Amiga it's *fast* graphics! Most graphic routines make heavy use of the Amiga Floating Point Library. Replacing this library with the one we give you with your Multifunction Module and installing a separately purchased Motorola 68881 FPU chip in the socket provided by the Module will speed up these math operations from 5 to 40 times! And if you write your own software, you can directly address this chip for increased speed in integer arithmetic operations in addition to floating point math.

THE PARITY CHECKING FUNCTION:

If you install an additional ninth RAM chip for every eight in your **StarBoard2**, then you can enable *parity checking*. Parity checking will alert you (with a bus-error message) in the event of any data corruption in **StarBoard2**'s memory space. So what good is it to know that your data's messed up if the hardware can't fix it for you? It will warn you against saving that data to disk and possibly destroying your database or your massive spreadsheet. The more memory you have in your system the more likely it is, statistically, that random errors will occur. Parity checking gives you some protection from this threat to your data residing in Fast RAM. Note that the Amiga's "chip" RAM cannot be parity checked.

THE IMMORTAL MEMORY DISK FUNCTION (STICKY-DISK):

When you've got a lot of RAM, you can make nice big RAM-Disks and speed up your Amiga's operations a lot! But there's one bad thing about RAM-Disks: they go away when you re-boot your machine. Sticky-Disk solves that problem for you. It turns all of the memory space inside a single **StarBoard2**

into a Memory Disk that will survive a warm-reboot! When your Amiga attempts to grab a **StarBoard2** in Sticky-Disk mode, a hardware signal prevents the system from acquiring the **StarBoard2** as FastRAM (and thereby erasing your files) –instead it is re-recognized as a Memory Disk and its contents are preserved intact. If you want to work rapidly with large files of data that are being constantly updated (such as when developing software) you can appreciate the Sticky-Disk!

Fast RAM –no waiting!

StarBoard2 is a *totally* engineered product. It is a ZERO WAIT-STATE design, auto-configuring under AmigaDOS 1.2 as Fast RAM. Since AmigaDOS 1.1 doesn't support autoconfiguration, we also give you the software to configure memory in 1.1.

Any applications software which "looks" for Fast RAM will "find" **StarBoard2**. And you'll find that your applications run more efficiently due to **StarBoard2** on the bus.

A passing bus? Indeed!

What good is an Expansion Bus if it hits a dead end, as with some memory cards? Not much, we think –that's why we carefully and compatibly passed through the bus so you could attach other devices onto your Amiga (including another **StarBoard2**, of course!).

The sum of the parts...

A really nice feature of the **StarBoard2** system is that you can buy exactly what you need now without closing off your options for future expansion. You can even buy a 0k **StarBoard2** (with a one megabyte capacity) and populate it with your own RAM (commonly available 256k by 1 by 150ns memory chips). When you add **StarBoard2** to your Amiga you have a powerful hardware combination, superior to any single-user micro on the market. See your Authorized Amiga Dealer today and ask for **StarBoard2**

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StarBoard2, 0k (1 meg space):	\$349
StarBoard2, 0k (2 meg space):	\$395
StarBoard2, 512k (1 meg space):	\$495
StarBoard2, 1 meg (1 meg space)	\$595
StarBoard2, 2 megs installed:	\$879
StarBoard2, 2 megs & MultiFunction:	\$959
Upper Deck, 0k (1 meg space):	\$ 99
Multifunction Module:	\$ 99
<i>also available:</i>	
Standard 256k memory card:	\$129
MAS-Drive20, 20 meg harddisk:	\$1495
MouseTime, mouseport clock:	\$ 50



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PHOTON PAINT

Tap the Potential of the HAM mode

by Mark Smith

Photon Paint from Micro Illusions is a Hold and Modify paint program that does so much it's hard to believe. This review is based on a pre-production copy of the program and very preliminary documentation. Release of the product is right around the corner and even the limited documentation won't contain my excitement for the product.

The nature of Amiga's HAM mode makes otherwise easy routines more difficult. The desire for 4096 colors has caused some

problem for paint programmers of graphics software. In order to achieve a desired color value for a particular pixel, neighboring pixels have to be considered. In previous HAM paint programs, you did not always get exactly the color that you desired. But Photon uses unique routines to produce the exact color that you want not a computer picked approximation. Photon will also keep up with your real-time drawing while correctly calculating the background colors.

Also unique to Photon is the

use of the halfbrite mode. By exploiting the halfbrite chip which is standard in the Amiga 500, 2000's and present in some Amiga 1000's, the normal 32 color palette has now been upgraded to 64 colors. This is the first commercial program to make use of the halfbrite hardware. Halfbrite, for those that do not know, takes the normal 32 color palette and reduces the brightness by half thus creating 32 additional colors.

Boot Photon from it's workbench Icon. The screen will display a workspace and a fast menu that can be pushed back out of the way. Press the help key at any time to bring the fast menu right back to the front. This is a very helpful touch. The fast menu contains all of Photon's drawing tools, preset brushes, and palette. Along with the usual tools such as line, filled/hollow box, filled/hollow circle, and arc, the fast menu contains other unique features.

The Pix tool will take a portion of the screen and pixelize it. In other words, fat pixels are formed from the average color of the specified area. This effect is used often on television and movies to simulate computer and robot vision. It's ironic that this effect reduces the Amiga's high

Photon Paint is the most powerful HAM painting program available to date for the Amiga

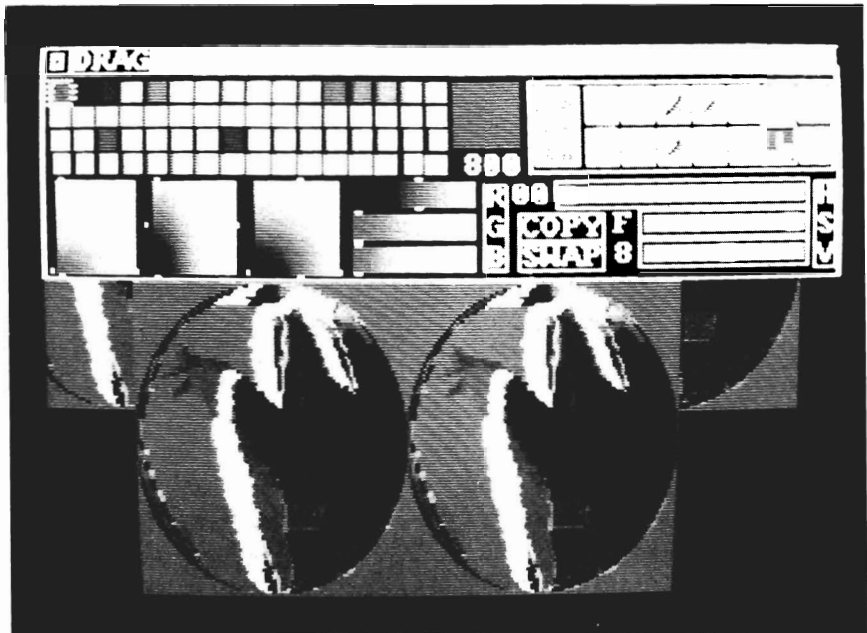


resolution and that you can use it to make the resolution appear quite low, almost mosaic or tile like if you will. The effect is quite impressive when combined with normal resolution backdrops. Try taking a picture of your grandmother and then making a smaller version of that same picture. Now pixelize it and put it on the wall behind her. The small version will look like a needlepoint self portrait. When Pix is selected, as the brush passes over the picture the color averaging takes place and that area is turned into fat pixels. The pixels range in size from two to nine with five being the default pixel size...

The Text Tool allows for the placement of amiga standard fonts on your artwork. This is another first for a HAM paint program. You can do many new things with text and the addition of so many colors. Photon can use the fonts provided on its disk or import others. The font style modes include italic, boldface, outline, and underline modes.

The Scissors tool allows you to cut your own custom brushes which are referred to as *pic* brushes. The current pic brush will always be saved as you switch to a standard brush. After using a standard brush, you may then recall the custom pic brush. Of course, this does not apply if you choose another pic brush instead of a standard brush.

Photon's menus are where the fun really starts. In the Blend mode, text, rectangles, circles, and pic brushes blend into the background of the picture. You can adjust the intensity of the



The automatic wrapping of a brush around a predefined shape represents one of Photon Paint's most powerful features

blending as well as set blending down and across the brush. The blending controls are a little hard to describe. But in a nutshell it's like drawing your own wave forms on many of the popular sound and music programs. Two graphs adjust the way that blending is distributed on the canvas. There are a myriad of new possibilities that can be achieved through the use of this particular interface. These very same techniques are applied to shading. While playing with the interface, I was able to shade a circle to give the appearance of a cats eye.

Picture Brushes, which are cut out from any of your pictures using the scissors tool can also be manipulated in all kinds of ways. This is the heart of this program in my opinion. The ability to take a HAM picture and manipulate it to the end of your imagination is the basis of image processing.

Pic Brushes can be flipped on their X and Y axis. They can also be resized. Resizing of brushes is extraordinarily flexible. When chosen, a pic brush will be ghosted by a rectangle and the pic brush will disappear. By dragging the rectangle larger or smaller and releasing the mouse button the pic brush will be resized to the confines of that rectangle. (I should mention that all of Photon's drawing, brush, and sizing routines are as fast as DPaint's. This is quite an accomplishment in HAM mode.)

After resizing your brush you may want to rotate it about the x/y plane. Rotating the pic brush can be done at preset angles or using Free rotation to gain the exact angle you desire. These brushes can also be rotated on the Z axis.

Select Tilt in the brush menu
(continued on page 14)

HEAD COACH

PRO FOOTBALL SIMULATION

by Don Di Giovanni &
Ernie Tapman

It's 4th down and 2 yards to go with 5 seconds remaining. Your team is down by 4 points and the crowd is going wild. What's your strategy? Maybe you should sweep left or make a screen pass, run up the middle or pass to the strong side. It's your choice because HEAD COACH provides for excellent game play whether you're an amateur or a serious football fan. HEAD COACH can be played simply or may require the utmost in concentration, preparation, and skill.

You can play with two players, a player and the computer or both teams can be computer controlled. This last will let you relax and enjoy the game. You participate in the game by calling plays and commands using the Amiga keyboard. The sequence for each play is as follows:

First the offensive team calls the offensive play, then the defensive team calls the defense. The probable results of the play are predicted, the play is then executed, and then the results appear on the screen.

Get ready now the game begins! It's time for kickoff, you



are ready to send in your first play. Take a deep breath and view the scoreboard at the lower portion of the screen. Displayed will be: Score, possession, ball position, down, yards to go, and time remaining. Take a look at your playbook and enter your offensive play, the defense is then prompted to comply; (We found it easier for the offensive player to sit at the keyboard and let the defensive player call his plays aloud. This way you don't have to keep taking turns at the keyboard).

The game includes 2 standard

playbooks which contain the most commonly used offensive and defensive plays. However, if you want to alter the standard playbook, you can, by simply editing the standard text file. A large number of plays ranging from running, passing, sweeps and just about every other play used in pro football are provided. You also have the power to construct your own team, specifying some or all of the performance information, according to your preference. In pro football, the offense has 30 seconds to begin

the offensive play. HEAD COACH lets you enable or disable the 30 second delay-of-game clock. You also decide if your players are identified by a player number or with a number specifying team status.

Realism is the main point to Head Coach. Before the game begins, you add to the realism by responding to a series of brief questions concerning playing conditions; (i.e. Where is the game being held? What are weather conditions? - wind, rain, snow, temperature, etc.) There is even a coin toss. The winner of the toss chooses to kick or receive. Much of the realism of HEAD COACH results from having probable play re-

sults calculated based upon player abilities.

There are many sport simulations for the Amiga user, but HEAD COACH is the first simulation that actually mimics pro football right down to the smallest detail; (i.e. slow motion/instant replays, substitute/injured players). One improvement that HEAD COACH offers over pro football, is that if you are undecided on a play the computer recommends the best possible solution.


HEAD COACH in our opinion, offers the most realistic, strategic gameplay, combined with good graphics and digitized sound effects. The manual is also well documented, providing

the novice user with a complete overview of pro football. After many enjoyable hours of play, we recommend this game to just about anyone who enjoys a good game of football.

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Photon Paint (continued from page 11)

and you can rotate your brush to your wildest expectations. Using the mouse and the keypad you have the ability to alter the perspective of the brush in all ways including pitch, roll, distance, and yaw. Using the SHIFT KEY allows for 3d movement about the fixed, invisible perspective center. After selecting the desired perspective angles, hit the space bar to plot your new pic brush in vivid 3d and color.

Of all the features of Photon Paint, Wrapping is by far the most interesting and pleasing. Wrapping acts as though your pic brush is a piece of wrapping paper. This is more impressive than it sounds since Photon allows you to wrap the "paper" around certain objects. These

objects include spheres and ellipses, cones, and cubes. There is even an option to create your own free form shapes. Playing with these functions is very contagious. This feature reminds me of the kind of feeling you get in a funhouse full of distorting mirrors. I enjoyed taking my digitized face and mapping it on cubes and cones of all shapes and angles. Another interesting effect is the twist command. Twist literally takes the opposite ends of the brush pic and turns them in opposing directions. Imagine a picture printed on a wide rubber band and then twisted once or twice.

If that wasn't enough these mapped objects can be shaded for further three dimensional realism. Selecting LUM allows the

movement of a light source to cast shadows on the mapped regions. This light source is very directional therefore it can be moved in any fashion to gain the right angle for the light. The light source also has an intensity adjustment.

I've reported on many of Photon's features, but a program of this complexity will be on the market for several month's before it's full potential is even realized. Based on what I've seen, this program is dynamite and is a must have for every graphics aficionado.

Photon Paint \$99.95

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PIXMATE

Advanced Image processing for the Amiga

by Mark Smith

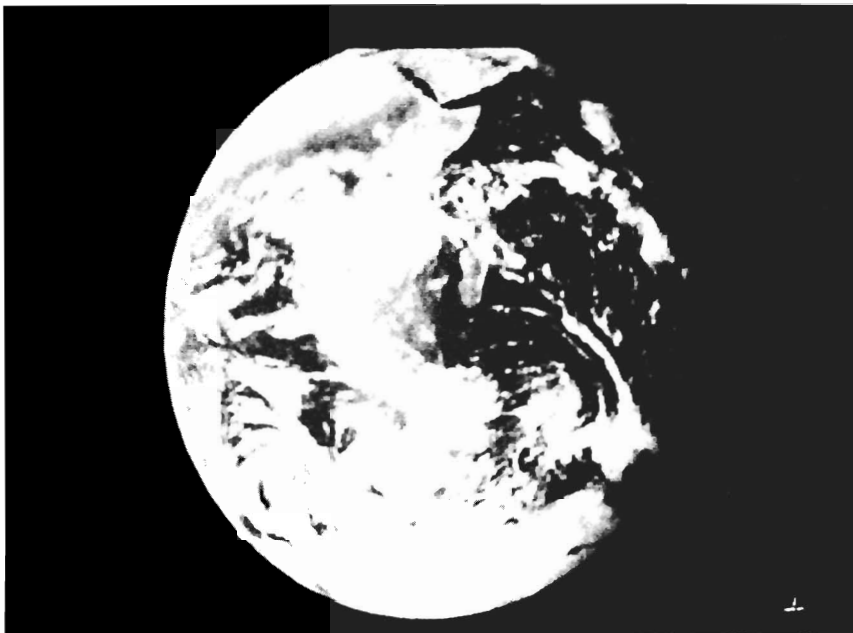
If you ever said to yourself about one of your IFF masterpieces "I wish that I could do this ", then a program that you might want in your disk collection is Pixmate from Pacific peripherals & Software. Pixmate is a full featured picture conversion/manipulator software package that does everything under the sun plus a little bit more to make your imagination run wild. Pixmate is menu driven and is separated into five separate parts Project, Edit, Color, Effects, and Info. In the Project menu

files are loaded and saved. This menu is done so thoroughly that it is almost funny. Pixmate will load in several different formats including old DigiView, raw data, and even Atari ST Neochrome! When you have finished your masterpiece you can save it in IFF format, the only standard that everyone should subscribe to. The EDIT menu is dedicated to the manipulation of whole screens. Because Pixmate uses a buffer conversions between pictures can take place such as comparing color palettes. The EDIT menu also allows includes an undo function to get back something that was

done by mistake or that didn't turn out like it was intended. In some instances you may not be able to find that extra memory to perform something memory intensive. Often times the Kill undo buffer will give you the extra chip ram. Other options in the edit buffer allow for the mouse pointer to be disabled (good for taking screenshots) and clipping out sections of your picture.

One interesting thing about the current and spare screen is that they can be different graphics resolutions, modes, and color palettes. This can be very interesting when using certain special effects involving both of the screens at the same time. One other feature worth noting is "grabbing" screens. While Pixmate is multitasking with another program running in the background, you can grab a screen and turn it into an image for processing. The Grab DeluxePaint function will search the system for the Deluxe Paint screen ignoring all the other programs you may be running at the same time. The Color menu has a wide range of operations for manipulating the color of an image. Most of the color operations are performed by the Spectra-Plus

(continued on next page)

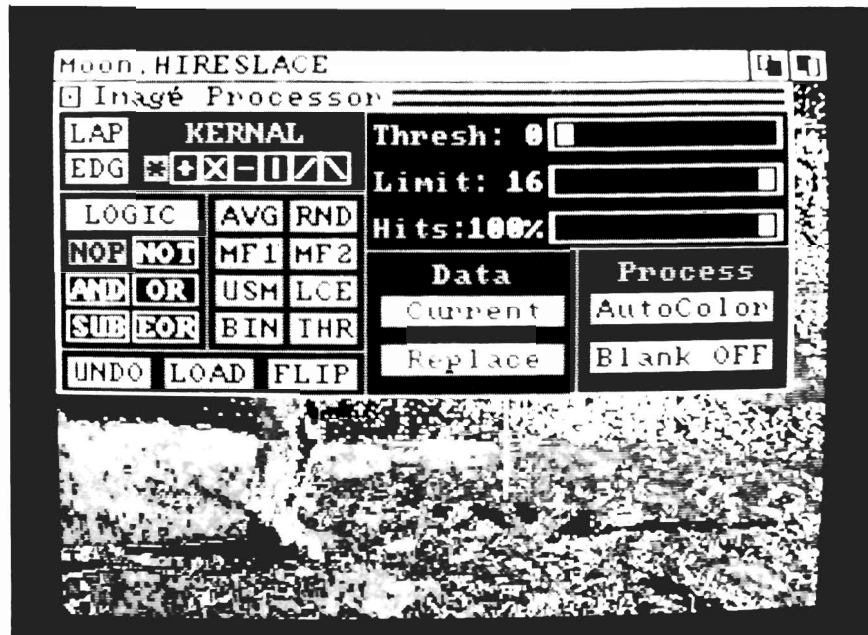


Pixmate (continued from previous page)

Palette window. This window is easily pushed aside and brought forward again as needed. Since PixMate supports every mode possible, the palette adjusts itself to suit the image. HAM palettes are displayed by showing the sixteen primary colors of the image while an Extra Halfbrite image palette will consist of sixty four colors. The color values are adjustable in the normal RGB and HSV modes. On the right hand side of the palette are eight edit gadgets: copy, swap, undo, exchange, spread, and a range setting for Pixmate's color cycling abilities.

The Effects Menu offers a set of wide and varied applications for processing your image. Here you will find the Display Control window. One of the ef-

The Pixmate Image Processor



(continued on page 49)

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KindWords

A wordprocessor with custom printer drivers and "Superfonts"

By George Rapp

KindWords is a new wordprocessor from The Disc Company. Formerly, the creative minds responsible for Kindwords were with Arktronic. They created a program for Commodore called Textcraft, and we were all impressed with the ease of use; we were, however, not impressed with the slowness and the lack of features necessary to call Textcraft a serious wordprocessor. KindWords bears some resemblance to that earlier attempt, but is much closer to MacWrite,

an excellent word processor that uses a mouse interface and keyboard shortcuts. KindWords has all of the most required text editing, page formatting, printing, and graphics functions. This makes for a complete package which can meet most individual demands.

When I first attempted to use KindWords, I was pleased to find that the manual while small, is complete and easy to read. I particularly liked the pages devoted to installing the program on a hard disk or a floppy sys-

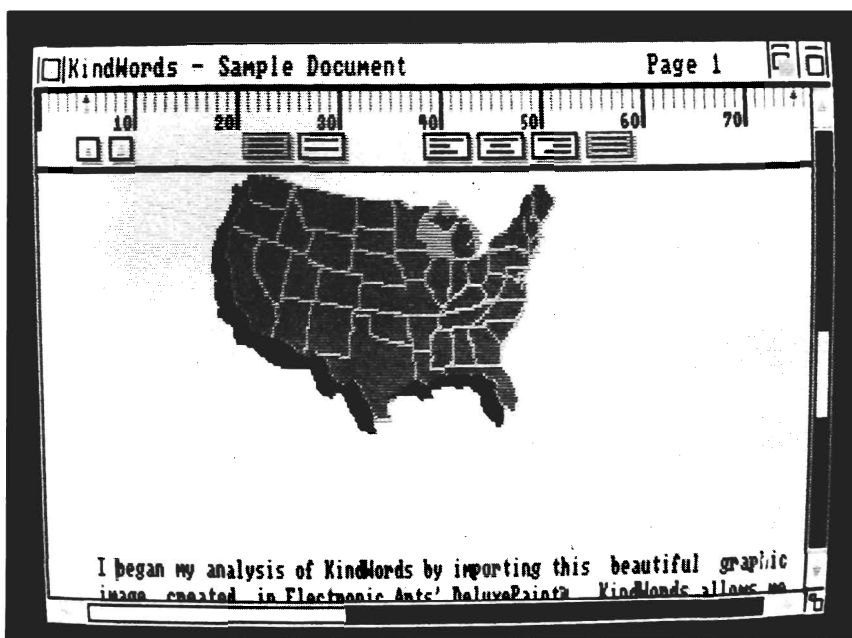
tem. The basic editing and formatting instructions are clear, but the advanced features section is too brief for my liking. There are also full listings of commands, requesters, and the key maps. The key maps show some common symbols and foreign language characters that can be incorporated in text or printed out.

KindWords differentiates itself from basic word processors by including a 90,000 word spell checker. I found that it was easy to use and does a good job of correcting typing errors. The spell checker will prompt you if you would like to install the dictionary in RAM and also will remove the files from RAM when you quit. Of course, this will speed up checking tremendously.

When an unrecognized word is found, Spell check displays a requester. You can correct the word manually, add it to the dictionary, skip the word in question, or choose from the list of suggestions. The spell check itself is not as fast as some nor as good at making suggestions as Word Perfect, but I find it adequate for personal writing.

There are other advanced features not often found in a personal word processor. One of these is an alternate symbol set that maps over the keyboard. Using

KindWords allows you to import and manipulate graphics, while providing automatic gray scaling



this set you can draw lines or boxes, include hearts, etc. These symbols are treated like text and are handled well by the special printing capabilities. Another advanced feature is the Print Merge function. I found this slightly better than its equivalent in VizaWrite. Double brackets around a name are all that you need to include it. I was also impressed that the text style of the "variable" sets the style of the merged text. However, it is a little more diffi-

graphic files and placing them in the document. The import routine is better than the one used in VizaWrite since KindWords allows 4,8 or 16 colors while VizaWrite allows only two. Unfortunately, the KindWords import routine is much slower since it has to recalculate the palette, and uses more memory. You must limit yourself to 4 colors if you have only 512K of RAM. The more colors that you do use, the better any graphics images will appear in

tional fonts for printing and additional print drivers for selected printers. You still have the choice of preferences' draft and letter quality print, but now there is a third option: Superfont printing. This is really graphics printing with four passes per line of text. This result is outstanding printing at the expense of print speed. The print quality is exceptional, producing bold, dark, round characters with almost no sign of broken, diagonal lines.

Printing With SuperFonts

KindWords comes with the unique SuperFonts feature that makes any dot-matrix printer output high quality fonts -- four times as many dots per character as the standard Amiga fonts. The tradeoff is speed. For printers that have a nice Final Print font, we recommend you use the Final Printing option from the Print requester. This mode will use the printer's internal final font for fast printing and use SuperFonts for Italics, Symbols, etc.. This combination will always give you the best printout with the best printing speed.

SuperDrivers

In order to use SuperFonts, KindWords uses its own drivers in conjunction with the Amiga printer drivers. KindWords has drivers for most of the Workbench supported printers except for the following ones:

Non graphic printers such as the Diablo 630
Diablo C-150
HP Laserjet and HP Laserjet+
Okidata 292
Okidata 92

A typical output using "Superfonts" with an Epson compatible 9 pin dot matrix printer

cult to create the source text for merging since you must type CTRL and Return to separate the lines of the text for each entry and a double return to separate entries. This is a logical system, but I found that it prone to mistyping. Like VizaWrite, KindWords allows for importing IFF

the printout since the additional colors translate to more gray shades on the printer.

Printing is the best part of KindWords, so I have saved it for last. Instead of settling for the preferences print drivers, TDC has included a set of "superfonts". These are addi-

Unfortunately, not everything worked as well as the printing routines. I frequently had problems with the file requester properly recognizing my 1020 drive and Supra hard disk's second partition. I could still access all my files but I had to type in the

(continued on next page)

Kindwords (continued from previous page)

drive and path myself. I would also love to see more print drivers supplied in superfonds, particularly the Canon PJ-1080A. This is a popular printer with the Amiga but has poor text printing. With KindWords and Superfonds, this could be an excellent combination.

There are also a few small quirks as well that I would like to change. The screen does have a front and back gadget to let you get back to Workbench but it is mostly covered by the text window so you have to use the access workbench command from the drop down menus. KindWords uses memory up faster than most other word pro-

cessors which means you can open fewer text windows in the same amount of memory. In my opinion, you will need at least one megabyte of RAM to make full use of your Amiga. I also do not like the large boxes that pop up as requesters for printing. This does not effect how well it works, but I find it distracting to have a large white box immediately behind my active window if I am multitasking while printing.

I am very happy with KindWords and it may replace my normal word processor. Viza-write has the same roots as KindWords but a slightly different focus. KindWords is better

suitable for word processing while Vizawrite is better at page formatting. KindWords is a well thought out package that is certainly worth a look if you need a word processor. TDC seems to be dedicated to supporting this program since they supply a customer support phone line and mailing address. Kindwords is a good step forward in useful, productivity software for the Amiga.

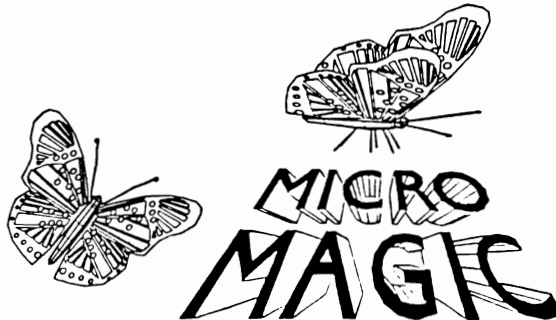
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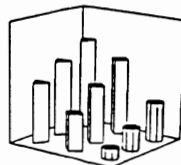
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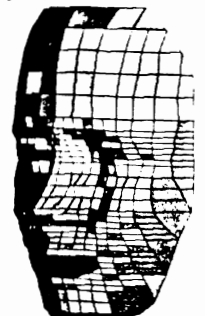
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Inkwell's Light Pen

A new light pen for the Amiga

by Steve Dock

Drawing with a computer is always a problem. Whether you try pens, pencils, crayons, or paint, all they'll do is mess up your keyboard and screen. The upside down track-ball we call the "Mouse" has become the accepted tool for moving around and pointing to the display screen. It too has its limits. Many traditional artists liken drawing with a mouse to drawing with a bar of soap or a brick. It just doesn't feel or act like a pencil. It may take several rolls to move from one corner to another. And just try drawing a circle using your mouse.

Enter InkWell Systems. The concept of a light pen is simple.

The user moves the mouse over the monitor screen, and software moves the pointer, or drawing pen correspondingly.

Inkwell has produced light pens for C64 and C128 computers for several years. Their Amiga model #184-A is an entirely new light pen designed for our higher screen resolution.

Inkwell developed two versions of their driver software to deal with the different Amiga models. In order to use the 184-A, you must plug it into the appropriate mouse port. For the 1000 and German 2000, use port #1. (The 500 and 2000 use port 2.) Now boot up as usual and then insert the Inkwell driver disk. Open the disk and click on

the 1000 or 500 driver Icon. Installation is complete.

The pen itself is a lightweight, black plastic cylinder which has three flat sides for easy holding. The cord is two feet long which allows free movement in most physical setups. There are two switches mounted on one side of the pen. They function as right and left mouse buttons. Recessed about 1/4 of an inch, a sensitive light diode sits in the pen's tip.

All this is obvious as soon as you take 184-A in your hand. Simply move it around the screen, and your mouse pointer follows. You can move quickly, in curving movements, and go directly from corner to corner. You don't even have to touch the screen. The pen works well up to 4 or 5 inches away from the screen. So far so good. But will it work with... The driver software works with just about every program you'd like to use. It also coexists with the mouse. You can keep your mouse in the unused port and use it for selections while you draw with the light pen. The driver leaves a small window on the screen so you can access software settings even after you have loaded Dpaint, Draw, or other applications.

The software selections include, reset, disable, and screen



flip (to return to the application). These are straight forward but the filter, scanner, and scroll options require a little explanation. Filter functions are provided to slow down the rate at which data is sent from the pen to your software. The options are full, none and variable where you use a slider to set the degree of filtering. Filters will give smoother curves and lines. The pen starts up in global scroll mode, the pointer follows your movements around the screen. The zoom scroll mode move one pixel at a time. Obviously this is useful when working on fine details. The scanner mode is needed since the light pen works by

sensing changes in light intensity. If you are working with a dark background or certain dark color combinations, the pen will not see well. These selections can be varied at any time which lets you experiment until the optimum settings for each program are found.

I fully expected to love the light pen, however actual use was marred by two serious problems. First and most important, the pen switches are very difficult to use. There is no click, or other indication of activation. I found myself pressing repeatedly never sure if the switch was activated. This made almost all selecting and dragging

operations very difficult. Inkwell's choice of silent micro-switches does not seem very practical. The other problem I discovered is a software bug. When using hi-res mode and the light pen, menu text is almost unreadable. Somehow, every other pixel disappears from the text. Turn off the driver and the text is restored. This doesn't interfere with actual operation of the pen, and will surely be fixed in a future release.

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WB Extras

Desktop Accessories Come to the Amiga

by *Walter Steuber*

WBExtras is another attack on the nuisance of the keyboard. We all hate the slowness and clumsiness of typing commands on keys, commands that may be rejected by the system because of some slight misspelling. Quite a few programmers have fretted over this problem and come up with programs that get around the keyboard. DirUtil, JoBS, CliMate, and DiskMan are all interesting and different approaches to using an Amiga without pressing a lot of type-writer keys. Now WBExtras,

written by Peter Dunlap, introduces a unique new method to replace the keyboard.

With WBExtras, your Amiga can be operated solely by clicking on icons and menus. Of course, the Amiga was originally designed to do just that, making it friendlier than other computers for the casual user. Much of the power of the system, however, somehow got hidden in the C-directory, and was not accessible through icons. Users had to get familiar with the CLI and type in CLI commands to utilize many of the most important features of

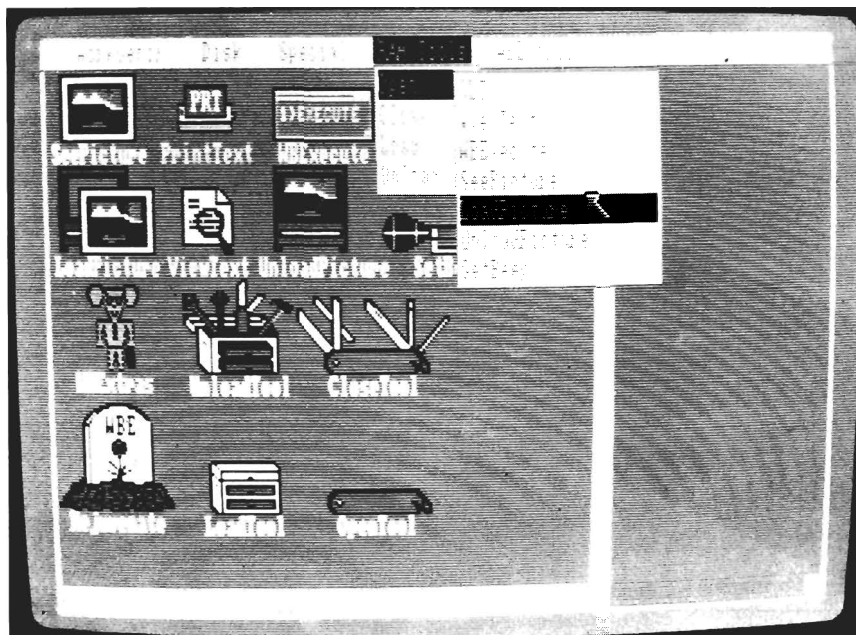
the machine.

WBExtras changes all that. Icons and Menu selections are provided for these CLI commands, so they are no longer hidden and you can use much more of the power of the Amiga without the trauma of learning CLI. To use WBExtras, boot up with the WBExtras disk in the inboard drive, in place of the usual WorkBench disk. Click on the disk icon to see an array of twelve drawer icons, representing the twelve directories on the disk. So far, things are about the same as always, but you'll soon see the differences.

Press the right mouse button and slide through the menus. You'll see two NEW MENUS. The first of these is RAMtools. This is an exciting addition to long-time Amiga users main pre-occupation, eg. customizing their Workbench. The first sub-menu lists a set of Tools including: Viewtext, Printtext, Loadpicture, Setbeep, etc. These are programs that would normally be used as CLI commands or as Icons which must be found and clicked. As Menu items they are always accessible and usually faster than mouse operations.

The real power of WbExtras is in how these tools were added to

WB Extras adds your favorite tools to your Workbench menu



(continued on next page)

WB Extras (continued from previous page)

the menu. They are not a fixed set of additions. You can use your mouse to ADD menu options of your choice!

Open the Utilities drawer and observe the fifteen colorful and artistic icons for some of same commands that have been added to the menu. One of the Icons is labelled LoadTool. Insert a disk with your favorite spell-checker, or some other program that you can't work without.

Click on the LoadTool Icon, hold the shift key and click on the Icon for the other program. When the disk activity stops, check the RAMtools menu. Your spell checker will now appear as a menu item. The Ramtools actually reside in RAM: and therefore load very quickly. Loadtool takes care of copying to RAM: and the WBExtras environment passes parameters from Workbench events to the Program. Of course you can fill up a 512K Amiga very quickly. Once again we see that more memory = more capa-

bilities.

Think of the implications. You can prepare a disk for a spouse or friend with your favorite extras already installed on the menu. No searching through drawers, no clicking on Icons, just a simple menu selection to activate a rollolex, a terminal program, or word processor. Or you might install a dozen CLI commands which you access often. This concept is familiar to MacIntosh users and is also available on GEM based systems. These programs added to menus are called "Desktop Accessories".

However, the WBExtras implementation for the Amiga is exceptional. You can add or delete to RAMtools at any time and every program that I have tried can be added. I'm sure that the menu itself must have some limit on the number of entries but I haven't found it yet. The second NEW MENU is WbExtras. Here you will find housekeeping se-

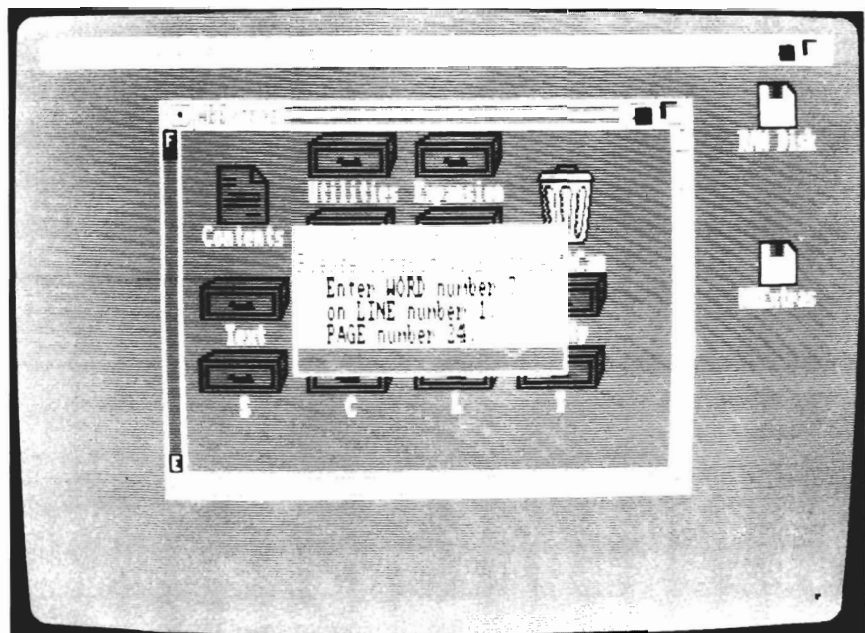
lections to reset WBextras and enable MultiSelect mode. MultiSelect lets you select many Icons without holding down the shift key.

This disk is chock full of value. Many of the WBTools perform unique functions independent of Wbextras. Viewtext and Wbexecute are two of these. Another valuable feature contained on the WBExtras disk is the drawer labelled "Text." It opens a display of three more drawers labeled "Tutorial," "Reference" and "Source." Clicking any one of these will result in the display of a dozen or so icons, each representing a document. Clicking on a document's icon very quickly snaps up a display of the pertinent text. Instructions for each tool along with source code make this a very educational process as well.

Peter Dunlap was very concerned, and rightly so, about people stealing all the work he

(continued on page 54)

**Your
WB Extras
disk will need
to be
"rejuvenated"
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Amiga Live!

LIVE! AT LAST

by Gary L. Gehman

Once upon a time — at the launch of the Amiga in 1985 — there was a fabled box that would attach to the computer's expansion bus and bring live moving images into it. That box, called Amiga Live!, continued to be a promise and a prayer for the next two years. But at long last, the promise has been fulfilled; and Amiga Live! has come to us finally in the form of LIVE! from A².

The reasons for its delay are many and fraught with the kind

of contentions and finger-pointing that characterized many of the development efforts of the Amiga's early years. Suffice it to say that A², Live!'s creators succeeded in wresting control of their product from Commodore and gained for themselves the right to finally bring it to market.

I received my LIVE! digitizer just a few days before the publishing deadline for this issue of SENTRY, so my review will be a preliminary one. Nonetheless, I have been using it very hard the last few days and feel well qualified to comment on the

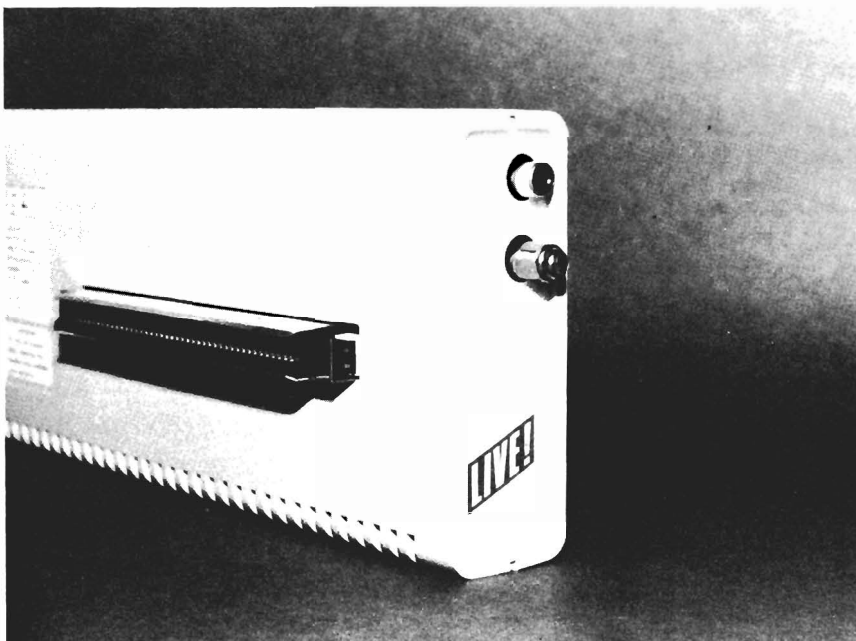
product.

LIVE! comes in a sleek, Amiga colored module that snaps onto the expansion bus. The case is just exactly the height of a Microbotics Starboard and about three inches deeper. It works flawlessly with other expansion devices (I use it outboard of a Microbotics Starboard and a Supra hard drive controller!). Unfortunately, LIVE! must be the termination of any bus-chain, since it fails to pass the bus through.

Aside from the 86 pin Amiga bus edge connector, the only other features on the LIVE! case are two RCA jacks on the front face. The top one accepts an incoming video signal, while the bottom jack feeds out an unprocessed signal. This allows you to patch the LIVE! board into an existing circuit without having to resort to a "Y" connector. (Splitting the video signal with such a connector before it gets to LIVE! will decrease signal strength to the LIVE! digitizer. Using the video out jack will not result in any signal loss.) The manual points out that using LIVE! with a cable plugged into this jack, but not connected to anything else, will effectively strengthen your signal. This works so well, in fact, that I intend to make a spare RCA

(continued on next page)

Amiga Live plugs into the expansion port of the A1000



Amiga Live (continued from previous page)

plug a permanent part of my digitizing environment.

The quality of your incoming signal is a crucial ingredient for successful image-making with LIVE! The digitizer will correctly synch up with almost any grade of equipment, and works with video cameras, VCRs and video-disk players equally well; but when using such equipment (particularly pre-recorded video tapes) the higher the quality image that comes in, the more information there is for LIVE! to work with in making its digital conversion.

When using a video camera, care must be taken to adequately light the subject; and as any television arts textbook will reveal,

this can be a science in itself. When using a "canned" source — such as a pre-recorded tape or disc — the material should have been recorded at the highest possible gain level and recording speed. If you're trying to capture images live from a closed-circuit television broadcast (users should be aware that the same conditions governing illicit taping also apply to digital image capture) then the signal should be properly tuned and cables used rather than aerial transmission.

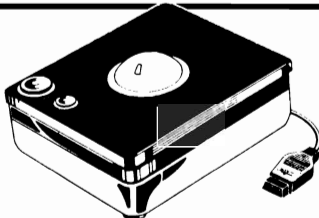
Once everything has been done to insure an optimal incoming video signal, we are ready to start up LIVE! and begin grabbing frames. The software that comes with LIVE! boots itself

automatically from Kickstart and comes up instantly with moving black & white images on the screen. If, for some reason there is no video signal coming through, Live! will inform you of the fact and wait for something else to happen. In Black & White mode, Live! samples at a rate of about sixteen frames per second.

LIVE! is completely intuition driven, but the best speed and responsiveness comes through the use of keyboard shortcuts. The most immediate of these is the use of the spacebar to freeze a frame for saving. Single frames are saved quite quickly in standard IFF format and can be freely loaded and edited by any

(continued on page 30)

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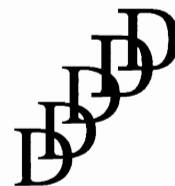
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Amiga Live (continued from page 28)

other IFF graphics program. Since LIVE! is a frame grabber, you want to be able to instantly grab a single frame before it's replaced by another one. This would be nearly impossible if you tried to use the menu options. But by simply tapping the spacebar, you freeze the frame instantly and a file requester appears. Similarly, you can use the function keys F1 and F2 to switch between Black & White and Color mode. Each of the other menu options have their own key equivalencies.

Picture quality can be adjusted using a slider control that allows for the setting of both high and low thresholds. This means that you can separately specify how bright the brights will be and how dark the darks will be. You can also make pseudo-colorizations in Black & White mode using one of twelve pre-defined color maps. These colorization effects are good for achieving some bizarre representations, such as might be used in MTV videos. The colorizations use the mouse as a color-control device; by dragging up, you brighten the colors, by dragging down, you deepen the colors; dragging left shifts the color values toward red, dragging right shifts through green to blue.

Beyond the obvious "play value," these transformations have a very limited utility. One thing you can do with them, however, is to approximate what is known in the printing trade as a "duotone," (the superimposition of a monochrome image over a tinted version of the same monochrome image). For a color im-

age that is useful for some purpose other than as "eye candy," you really have to move into the color modes.

LIVE! offers two color modes: a thirty-two color lo-res mode (this is available — as is Black & White — in both 320 x 200 and 320 x 400 screen resolutions), and a preliminary version of a real-time HAM (Hold and Modify — 4096 colors) mode†. In 32 color mode, the frame capture rate drops to about 12 per second. This results in some pretty weird effects any time there is dramatic or rapid movement of people or objects on the screen. Such motion smears out into a rainbow of separate red, then green, then blue images in different positions on the screen, until all three eventually catch up with each other and recombine to form a coherent image at rest. This effect is even more distorted in HAM mode, which drops the image rendering rate to about four frames per second.

Thirty-two color mode also has the same settings adjustment and mouse tinting options, as well as the ability to render the image in negative color.

One of the most exciting — but at the same time, least practical — features of LIVE! is its Capture mode. By selecting capture, LIVE! will fill up all of your available memory store with a series of frames. On a 512k machine, this means you can only capture about 4 frames. With my 2.5 megabyte system, I was able to get 46 frames before I ran out of memory. One can imagine using capture for video effects,

(continued on page 52)



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Newsletter / Studio

FONTS

Two new Font sets from the makers of The Calligrapher

by Bill Barker

Interactive Softworks has released two disks of fonts for the Amiga that are well suited to graphic arts and desktop publishing. If you use Dpaint II, Express Paint, Deluxe Video or any of the currently available desktop publishing programs then these fonts are for you.

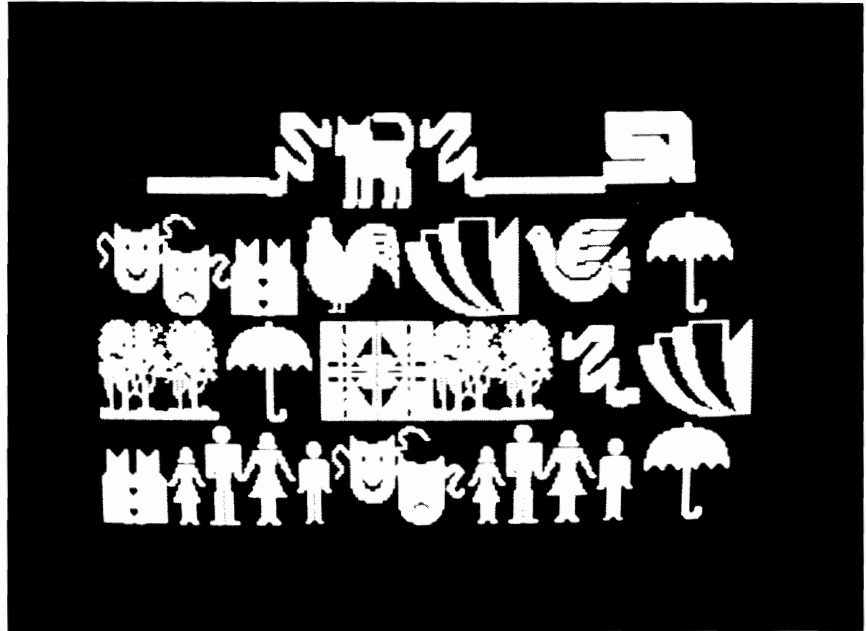
Studio Fonts consists of 3 font directories: 2ColorFonts, 4ColorFonts, and 8Color Fonts. The directory names reflect the number of colors that each font contains. Within each directory are "families" of fonts ranging in sizes from 29 to 68 points. The 2ColorFonts directory contains normal Amiga fonts, while the other two directories contain ColorFonts a new font type which allows up to 16 colors to be used in the font. ColorFonts were developed by Interactive Softworks and introduced with the Calligrapher. (See September Sentry) In order to use ColorFonts in Amiga programs a special program called ColorText is provided. Simply run ColorText and it will intercept calls to the standard Amiga font routines and replace them with the codes needed to allow ColorFonts.

The addition of "color" to fonts adds another powerful dimension to the toolbox of the

Amiga artist. I particularly like the wide variety and sizes of colorfonts provided. When used in DPaint II the large font sizes are nothing short of spectacular. Users of this fontset, will enjoy the added effects these fonts lend to their graphic endeavors. ColorFonts consume large amounts of memory and disk space. You

Quest, Reprise, and Pazazz. It should not take long before we see the creative use of these fonts in works produced in the Amiga community. I recommend using ANIMAX in your Deluxe Video productions. Turn on Cycle colors to achieve the shining effect often seen in movies and TV titles. NewsLetter Fonts is

"Studio Fonts" contains a variety of graphics



will not see them on program disks, they need to be on their own font disk as Interactive Softworks has provided them. Studio Fonts includes font names such as Diva, Sherbert,

designed to improve printed text from the AMIGA. There are five directories of fonts: Bullock, Miami, Mini, Roman and Helvetish. The fonts range in size from 9 to
(continued on next page)

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Fonts (continued from previous page)

68 points. Altogether there are over 100 fonts on this disk.

I was eager to try my hand at desktop publishing when the Amiga was released but had to wait for the introduction of software. We now have several to choose from but most desktop publishing programs suffer from the same problem, namely the poor printed quality of Amiga fonts. Only Publisher 1000 provided "new" fonts designed to work with their program, and even using the fonts from Publisher 1000 did not satisfy me. NewsLetter Fonts provides some of the most attractive fonts I have used to date with a 9-pin printer. The Helvetish and Roman fonts produced the best printouts with my printer an Epson JX-80. (There were only minor glitches with certain letter combinations, eg. "di and li" because of letter spacing). The fonts should look even better when printed using a 24-pin dot-matrix printers.

I made many printouts using most of the fonts on the NewsLetter disk and I am very pleased with the results. I have decided to use this font disk with all my desktop programs. These fonts allow me to produce good quality work for newsletters or documents with a special look not obtainable with a word processor.

The folks at Interactive Softworks have provided several other items with their product that deserve special mention: well written documentation, a very interesting Readme file and two utilities: Fontfixer and FontAssign. The readme file by Lion Kuntz of Lion's Amiga Art Studio (and provided in a slightly

different format on his own disks) is one of the most informative pieces on Amiga fonts you will find.

The FontFixer utility program allows the user to correct font header files and is run from CLI. A header file is used by the application software to display the available fonts in each font collection. If you have accidentally or purposely deleted a particular font size from a font directory, then the header file will not correctly reflect the the number of fonts in that directory. That is where Fontfixer comes in. It allows the user to go through each directory or an entire set of fonts and to delete font sizes, as well as to correct the header file for each directory. This is a useful utility as some application software will not even display the directory name if the font header file is incorrect

The other utility provided is FontAssign, which allows the user to enter a path name to assign fonts to other disks and directories.

If you need fonts, then these two disks are definitely worth checking out. They are reasonably priced, and the utility programs FontFixer and FontAssign make them very cost effective. Interactive Softworks is to be congratulated for their efforts in developing quality Amiga Software!

Newsletter Fonts \$30.00

Studio Fonts \$35.00

Interactive Softworks

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Pro Drives

An Alternative 3.5" Floppy Drive

by Walter Steuber

Everyone who buys an Amiga with its standard single disk drive realizes almost immediately that the system needs another drive. The first instruction in every manual, for instance, is "back up the original disk" and this turns out to be an exasperating operation with only one drive. The only option up till now has been to buy an Amiga 1010 add-on disk drive.

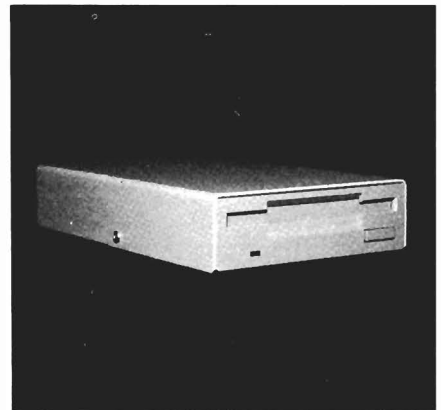
ProDrive is an alternative to the Amiga 1010 and in function is nearly, but not exactly, interchangeable with it. The 1010 does its job fine and has proved reliable, so why produce something different? A manufacturer would have to feel he is offering some substantial advantages to go against an entrenched product. ProDrive claims many ad-

vantages, including lower price, metal construction, no slide when a disk is inserted, smaller size, and quieter operation.

To get familiar with the unit, I copied and read 40 disks with the ProDrive in place of my Amiga-1010. It was a pleasant experience, and I thoroughly liked the device. The ease and speed of operation were identical with the 1010 and the products from both were perfect, a miracle of the digital age that I continue to marvel at. The ProDrive was clearly quieter, felt more substantial, and was only one-fourth (!) the size of the 1010.

What I would like to be able to report to people is the result of a careful five-year study of how many failures were experienced by thousands of users of each kind of drive. The property of a drive that most interests me, but one that is unknown with both of these drives, is long-term reliability in normal use. On the other hand, this may be a trivial concern, since hardware in the computer game generally becomes obsolete before it begins to show signs of age.

One major difference between the Prodrive and the Amiga 1010 is that the 1010 has a pass-through connection for another



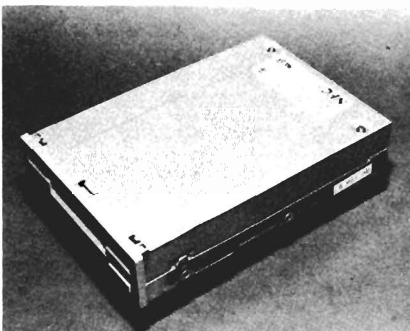
drive, and the ProDrive does not.

When you need one, the presence of a pass-through is an overwhelming consideration in selecting a drive. One of the main uses of a pass-through is to connect a drive for 5.25" disks so that your system can access IBM material. Another use is to connect another regular 3.5" drive into the system.

The Amiga 1000 computer generates only a little more power than it needs for its own internal operation. The 5.25" drive supplies its own power, so it isn't affected, so it is only tapping into the pass through for data transmission purposes.

The ProDrive uses substantially less power than the 1010, so three of them could easily operate on the available power, if they

(continued on page 51)



Gee Bee *AIR RALLY*

Take to the skies for a wild air race in this new offering from Activision

by Steve George

The latest game offering from Activision, Gee Bee Air Rally, came as a surprise to me. Kudos to those companies releasing software without the hype of announcing them 6 months before they are released. Are you listening EA? I am a HOPELESS game fanatic and have previously purchased all Activision games. So What Is A GEE BEE Anyway?? Airplane racing was very popular in the 30's, and the speed was unri-

valed anywhere. It was a small plane optimized for racing. It had a large engine, fixed wheels, and small stubby wings for quick turning. Top speed was in the mid 200 MPH (race cars were only going mid 100s then).

The race course was marked out using tall pylons and the racers had to keep in between them. Races were very competitive and this game attempts to recreate this atmosphere.

The game uses 3D effects by scrolling the ground towards you, when you move left to right the background follows the joystick movement. The artwork is VERY good. It reminds me of

"Pole Position" only in the air, with planes that come up in front, around the back, above and below you. It gets extremely hectic when you are in the middle of a pack of racers. Digitized sounds were used to create realistic engine sounds and for other parts of the game. Before play begins, you are presented with a choice of three difficulty levels. Your plane is yellow and will always stay in the middle of the screen with the back towards you. You also have a large cockpit on the bottom of the screen displaying various gauges: altimeter, compass, airspeed, ignition switch, throttle and warning lights for when you are running out of time.

The object of the game is to race the clock to the end of the event, gaining points while you are on the course. You must not run off the course, into other planes or hit the pylons. If you crash, a sequence of "cute" animations begin. (You can speed through with a joystick button press). First you see a full screen pilot bailing out with digitized parachute noise, then you fall into various sticky places like a pig sty, and a tree shared with an owl (with all with appropriate digitized sounds). Very nice detail. If you survive five or so levels



you go to a "special level" sequence where you free fly but must complete a challenge. I will not mention these to keep some parts of the game as a surprise.

Beginner level is very easy and the Ace level (the hardest) is very challenging. After a game, you can save your high score to your original disk (NOT recommended) or set the path to any other disk. This is evidence of proper consideration for Amiga-Dos.

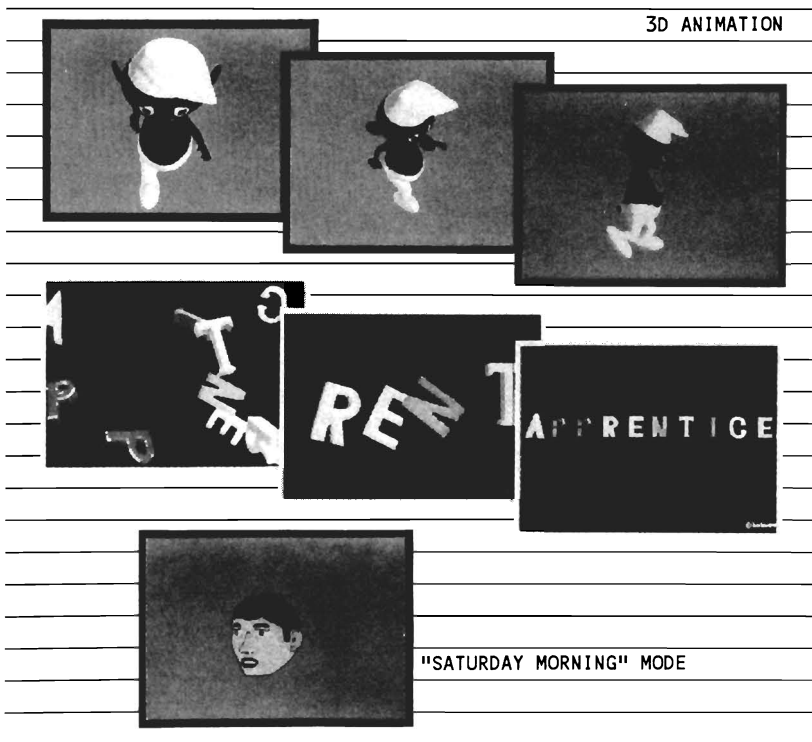
A final realistic aspect is the "Doppler" effect of the other plane's engines as you approach them or they pass you. In the left speaker these sounds get

louder as you approach and the effect is related to how fast the other plane is going. When you are in a pack of planes searching for a hole to pass (my favorite part) the din of the engines around you is phenomenal. When you crash, you stop and they speed by with a "whoosh" that gives the game yet another fine bit of realism!

The programmers of BEE GEE must have listened to the gripes of previous Activision game buyers because they have made this game enjoyable to play and use on a day-to-day basis. The requirements: Any Amiga with 512K and KickStart 1.2. I've played using an Amiga

2000 and an Amiga 1000 with a 68010 Microprocessor with no problems. A joystick is recommended. The game is copy protected, so it cannot be backed up. For those Amiga owners out there with expanded memory, here is the good news. A game that multitasks properly! I have a 2 megabyte Comspec memory board, and after the game is loaded up, I still have over 200K of chip memory to multitask with. You can now leave the game running, go back to Workbench to do something else, and then come back and play again. At last the promises of long ago are fulfilled.

(continued on next page)



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Air Rally

(continued from previous page)

You cannot ask for much more from a game program. The program retails for \$45, a bit expensive, but programmers are not making lots of money writing games these days. When you discover the game is about 700K you realize you are getting your money's worth! It comes in typical Activision fashion in a cardboard box, with a disk and newspaper-type manual. A feeling for the 1930s is conveyed through fonts, music, and the newspaper

planes on the course, the competitiveness of these planes (sometimes they pull up and let you under, in harder levels, they block you), and the twists of the course. On the easier levels there is not much variation. However, the ability to multitask, save high scores to another disk, being able to quit back to workbench, and the authors painstaking attention to details make this a worthwhile addition to any game-addict's library.



There are three different levels of expertise to chose from

is done in the style of Tass Times. It was written by Steve Cartwright and Gene Smith (of Hacker, Hacker II and Shanghai fame) and designed by Mike Nowak.

About the only complaint I have with this program is that becomes very repetitious unless you play at the ACE level. Almost all the variation is in the amount of

Gee Bee Air Rally \$44.95

Activision, Inc.
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Here's a playing tip for those of you who own FACCII, and expanded memory (and for those that do not know what FACCII is, read the November 1987 SENTRY for a review...). Run FACCII with lots of buffers (probably 1000 is fine). Then run Gee Bee (or ANY copy protected game that will start from WorkBench or CLI). As you play the game, the drive will be accessed and everything that is read will be in FACC's buffers. When you go back to that part of the game, the drive will not longer need to be accessed! After one round, Gee Bee will be running totally from RAM, saving wear and tear on your drives. Only one small caution...always leave the disk in the drive, if you remove it, FACC will dump the buffers and you have start all over again.

If you have two drives, (or a hard drive like in my case) you can Left-Amiga N to the Workbench and Left-Amiga M back to the game WHILE IT IS PLAYING. Not too many games do these successfully without gurning! When you quit, the program properly flushes itself and gives you your memory back (albeit a bit fragmented but it DOES give it back). You can then do something else. If you want to play again and left both FACCII running and the Gee Bee disk in the drive, it will still run like it was in RAM (FAST!) but will need to check the original disk for the copy protection (the drive light will go on briefly). I was even able to copydisks and run ED while GEE BEE was playing!

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Arkanoid!

Discovery brings the hot arcade game to the Amiga

By Elaine White

Arkanoid is an updated and much enhanced version of the classic game Breakout. Discovery Software International has licensed Arkanoid from Taito who developed the popular Arcade Version. You have to maneuver your "ship" in a line across the bottom of the screen and destroy the barriers that have been put in your way by some unknown and deadly adversary. As you destroy pieces of the barrier, some

fly off in your direction. You can capture these and put them to use. There are seven different kinds of pieces, whose functions may enhance your destructive capabilities or bridge to higher levels.

There are 32 levels in the game with one final level. Expect to spend many hours to get past the first ten. Fortunately, Discovery was kind enough to let us resume play from the point at which we were destroyed; with no score of course. The game is such a faithful reproduction of

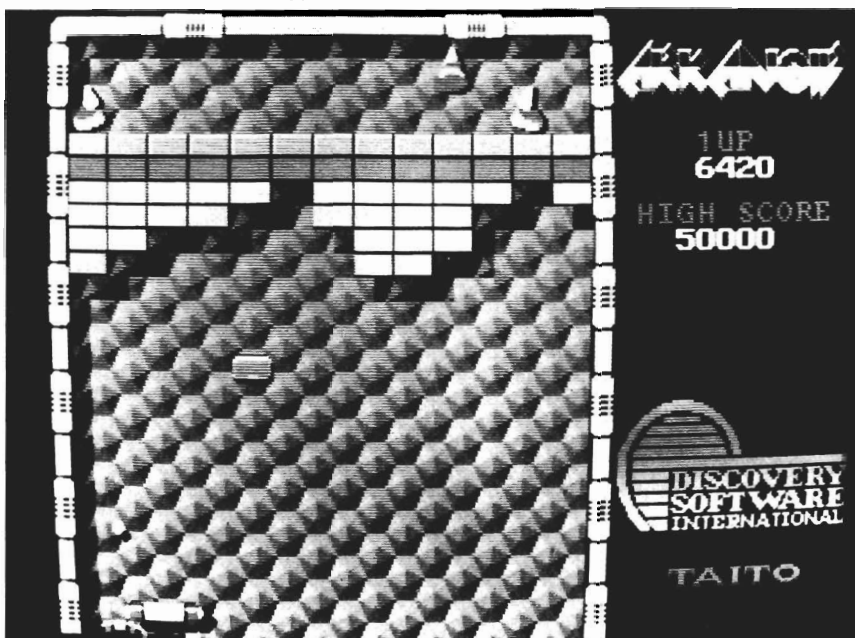
the Taito arcade game, that the Amiga asks for quarters! It has been reported that the people at Taito are so impressed with Discovery's rendition that they are negotiating future ports of their video games to the Amiga by Discovery.

The high quality graphics, stereo sound, and fast response make this a very enjoyable, if slightly maddening, game to play. Play does progress quickly, and there is enough variety that memorizing patterns does not help. Strategy is more important, since you have to decide in a fraction of a second which of the blocks that is falling towards you may be beneficial. Concentration, quick decisions, and quick reactions are the key to success in Arkanoid.

If you are unaccustomed to using the mouse for anything other than selecting menus, it may take some practice to master the hand-eye coordination necessary to achieve greatness at this game. I have found the control of my preference is the Wico Trackball for the Amiga. This responds as a mouse, and is much less tiring on the arm.

Arkanoid may be the first of a new generation of arcade quality games ported to the Amiga. With the agreement between

*Gameplay is fast and furious with
32 different levels to overcome*



Bally and Commodore for using Amigas as part of their video game line, and now Discovery and Taito working together, we should see much more to come

Arkanoid \$49.95

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Discovery releases new Marauder

Marauder II Release 1.2, Brain File 9, is accompanied by changes. Marauder, the first disk backup software available for the Amiga. In fact, the first release of Marauder backed up all 8 programs available at the time! Marauder II (M2) was a major advance over the original and has become the Dpaint of Amiga backup.

With Marauder II, Discovery Software introduced an interesting method of dealing with the ever changing world of protection schemes: the Brain File. Many of you know that this is a part of M2 which resides in the L: directory and can be replaced with newer versions. The new files are available free of charge

to registered owners. A bulletin board is operated by Discovery through which you can order the updates. M2 has been at Brain 8 for some time now and much of the newer software has remained dangerously protected. Music Mouse, Dark Castle, Black Cauldron, Test Drive, and Hardball! to name a few. So registered owners of M2 will be pleased to know that the next Brain file is available. Discovery has done more than update its backup list though. The program has gone through a major rewrite. The keyword copy protection scheme is gone! No longer do you have to keep the manual handy. The only other visible change is the addition of

82 track copying. Yes that's right some software goes beyond the standard 80 tracks on a 3.5 inch disk. The Readme file now includes instructions on installing M2 on your hard disk (mine at least) and a new utility has been included to check the version of some protected software. Discovery states that M2 will automatically deprotect the copy protection of most disks to date.

Marauder II V1.2 \$39.95

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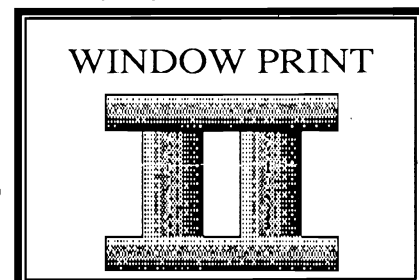
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The *BADGE* contest

Some ground breaking animations highlight this West Coast competition

by Mark Smith

In June of this year *BADGE* (Bay Area Amiga Developers Group) announced their *BADGE* Killer Demo Contest. The purpose of the competition was "to provide some impetus to the creative and sometimes demented developers and users of the Amiga." Rules were posted and the games began. This competition was meant to excite the senses and to send winning examples to dealers around the nation in

order to create a larger installed base of Amigas.

Prizes were donated by many hardware and software companies. The competitors were divided into seven categories including first place in class A (512K), first place class B (1meg), first place class C (>1meg), funniest, best sound, best graphics, and first through twentieth overall. The rules were very precise and detailed. Judging was based on a 100 point system in five categories. The "Technical" and "Nift" categories

were worth 30 points apiece. Use of Graphics and Use of Sound categories had a possible 15 points apiece while Amiga Specifics could add 10 points. In the technical category it was important to show that the demo could be run without problems such as gurus and that when finished it would return you to the operating system cleanly. The "nift" category was based on the awe that the demo inspired. Graphics and Sound are self explanatory. The Amiga specifics category awarded points if the demo could not be pulled off as nicely on another machine. In addition to the prizes, the winning entries would be submitted to Fred Fish for inclusion in his collection of PD software.

Well the winners are in and the results are quite impressive. The demo "RGB Hazard" took the grand prize for first place overall, won for first in class B, and was judged the Funniest. The genius responsible for this feat is Joel Hagen. (You may be familiar with Joel as the creator of "Probe Sequence" which has been widely circulated in the public domain and was broadcast on a California television station). "RGB Hazard" like "Probe Sequence" is an animated

(continued on next page)

A scene from "First place overall" winner, "RGB Hazard"



Badge *(continued from previous page)*

graphic done using The Director from the Right Answers Group. "RGB Hazard" is a funny piece demonstrating the hazardous effects of monitor radiation on the skin of the user. Joel suggests in his demo that this radiation causes extreme dermal elasticity and an overwhelming urge to stretch one's facial features out of proportion. This demo is a cute and funny must see!

Taking second place overall, first place class A, and best graphics is "Kahnankas." This entry was submitted by Ken Offer and shows just how impressive Amiga graphics can be. "Kahnankas" is a three dimensional, HAM, ray traced animation of a popular desktop toy. For those of you who don't know, Kahnankas are the large chrome pinballs which are suspended by wires from a wooden support. Sculpt 3D was used to ray trace the individual cells to mind boggling reality. The imagery is so clean that every metallic surface reflects even the smallest details. The pinballs reflect the pencil on the desk, the brass desk lamp, and the other pinballs as they collide then move apart. The balls even reflect their own shadows cast by the desk lamp. Very impressive!

Third place overall and first place class C prizes also went to Ken Offer. This offering (bad pun intended) was ROT Amiga, which is another 3D ray traced animation. As three dimensional letters spelling "AMIGA" rotate, they are reflected in a three dimensional red crystal apple which lies in the background. These images will make owners

of expensive graphics work stations wonder why they spent so much money! Really nifty!

The best sound award went to Mark Riley for his "Nemesis" demo. The sound is quite beautiful, but could you really expect less from the man who wrote Sonix for Aegis. The display has you drifting in space past a planet in an eclipse while soothing music plays in the background. As

winners, here are some choice pics and personal favorites. I truly enjoy "The Dream Goes Berserk" from master display hacker Leo L. Schwab. "Berserk" is a spoof of "Red's Dream" a high quality animation produced by Pixar, which is a high end graphics workstation manufacturer. In 'Berserk' an Amiga Boing ball juggles little red unicyles. "Marketroid," Leo's second entry spoofs the ar-

A rather painful scene from "RGB Hazard"



you circle the planet and watch the stars float by the music becomes menacing. The nemesis is a fast approaching black hole sucking everything into it's path including light! This simple fact is that the music is key to the mood of the demo. Watch this one in the dark.

These demos represent the cream of the crop on the Amiga. Although space will not allow me to describe each of the overall

cade game "Robotron" from Williams Electronics. In the "Marketroid" world many little nasties try to foil the plans of the legendary Amiga developers. "Rocker" is a three dimensional, ray traced animation from Eric Graham, who is the author of the software was used to create "Kahnankas" and "ROT Amiga." Eric wrote Sculpt 3D and the public domain "Movie" to create animations after enormous re

sponse to his now famous "Juggler" demo. The wooden rocking chair rocks back and forth in three dimensions casting shadows on the ground. The wooden look of the chair has a spectacular intensity not unlike fine laquered oak. Lastly there is "WaveBench" which is in the tradition of the neat and nifty display hacks affectionately called "Schwabie"s on the BBS circuit. The only way to really describe "WaveBench" is that it makes the workbench act as though somebody was using the hair dryer in the bathroom at home while you were watching TV. The entire screen waves up the screen. It's quite hypnotic.

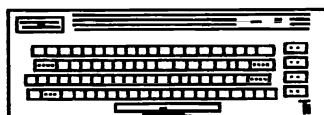
One has to wonder with the advent of the Amiga 2000, rumors of a fatter Agnes, and a slew of new software, what is ahead? How will these talented Amiga fanatics possibly outdo themselves next year? Do yourself a favor and collect all of these demos, then go over to a friend's house to sell him an Amiga just by showing them off.

Below is a complete list of the winners. Most, if not all, of them are available on BBS and Public Domain software disks. Hats off and three cheers to all who made the Badge Killer Demo contest a success.

First Place Overall	"RGB Hazard"	Joel Hagen
Second Place Overall	"Kahnankas"	Ken Offer
Third Place Overall	"ROT Amiga"	Ken Offer
Funniest	"RGB Hazard"	Joel Hagen
Best Graphics	"Kahnankas"	Ken Offer
Best Sound	"Nemesis"	Mark Riley
First Place Category A	"Kahnankas"	Ken Offer
First Place Category B	"RGB Hazard"	Joel Hagen
First Place Category C	"ROT Amiga"	Ken Offer
Fourth Place Overall	"Killer"	Robert Wilt
Fifth Place Overall	"Nemesis"	Mark Riley
Overall Placer	"The Dream Goes Berserk"	Leo L Schwab
Overall Placer	"Halfbrite Hill"	Kevin Sullivan
Overall Placer	"Car"	Allen Hastings
Overall Placer	"Fant Player"	Steve Hales
Overall Placer	"Rocker"	Eric Graham
Overall Placer	"Focus"	Joel Hagen
Overall Placer	"Interceptor"	Bob Dinnerman
Overall Placer	"Marketroid"	Leo L Schwab
Overall Placer	"El Gato"	Kevin Sullivan
Overall Placer	"Wire Demo"	Matt Dillon
Overall Placer	"WaveBench"	Bryce Nesbitt
Overall Placer	"Ripples"	Allen Hastings
Overall Placer	"HAMmmm"	Phil Burk
Overall Placer	"WorkBench Lander"	Peter daSilva
Overall Placer	"Mandelin"	Kevin Clague & Kevin Sullivan

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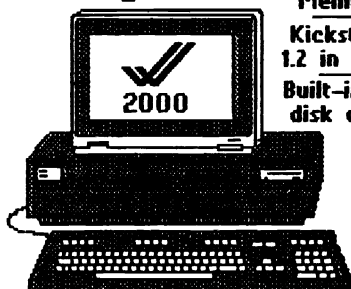
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Amiga Trackball

A very responsive trackball controller for the Amiga

by George Rapp

Some people just do not like mice, or at least the Amiga mouse. The mouse is a pretty good input device since it lets you access all the menus and icons and you can even use it as a "paint brush". Still, for a mouse to do all of these things, it needs room to run, and room on a computer desk always is scarce. Thanks to Wico, we now have another choice, the Amiga Trackball.

For those unfamiliar with a trackball, it is the same basic idea as a mouse except now the ball is showing at the top. The cursor is controlled by moving the ball in the desired direction. The obvious advantage here is that the trackball does not move across the desk top. A second benefit is that the trackball can coast after it is started. With some practice, this allows quick and fairly accurate movement of the cursor across the screen with a minimum of effort.

The part that does present a small problem is the use of the mouse buttons. There are two buttons on the trackball that serve as the left and right buttons, only this time, they are large and small ones. The large button is the same as the left but-

ton and is easy enough to click on. The second and smaller of the two corresponds to the right mouse button and is much more difficult to hit because of the small size. A additional problem is that the pull down menus are only displayed as long as the "right" button is held down. The trouble is that it takes one hand to show the menu and another to roll the ball over the option. To avoid an uncomfortable reach, Wico has included a pass through for the mouse that lets you keep the mouse on the opposite side of the keyboard so one hand can make the button clicks and the other can run the

ball. This is not a bad arrangement unless the software that you are using requires frequent use of the keyboard.

There are some applications that work even better with the trackball over the mouse. One that comes immediately to mind is Marble Madness! from EA. The arcade version of the game uses a trackball and it works very well here, even though you must select mouse from the game controller menu. Flight Simulator II also runs well with the trackball even if it is slightly unconventional. There is a better feel for the plane with the trackball since

(continued on page 55)



Custom Screens

A preview of a new Basic utility for generating code from graphics

by George Rapp

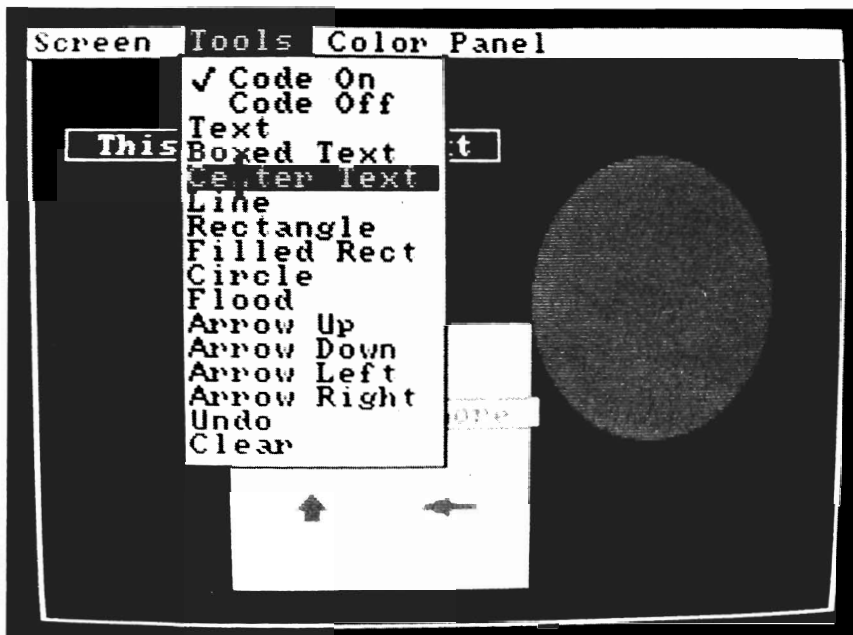
Custom Screens, from Soft Touch, is an interesting package in that it will produce AmigaBasic program segments from hand drawn screens or IFF (Deluxe Paint) files. Producing a program that can generate another computer language code is one of the more difficult tasks a programmer can take on. Custom Screens shows the difficulty of this task. Custom Screens is broken down into three main portions, the code generator, the program builder, and the graph-

ics import sections. Most of Custom Screens was written in AmigaBasic and compiled using the AC Basic Compiler. The various text windows and disk file requesters let you type and edit file names but you must hit a return after completing the line or the program will not recognize what is typed. The code generator does produce remarkably, clear and readable AmigaBasic code. It will also print out the code or a coordinate list of the graphics used so you can easily modify what is generated. The code is set up as a subroutine which can be merged into an

existing program or combined with other segments and BMAP (bit mapped graphics) files in the program builder. The final results will almost always run as is but expect some small changes to be necessary to get the results you may want. The code also looks like it will compile in the AC/Basic compiler without major modifications. It is mentioned in the manual that Custom Screens is written in compiled basic itself and from the appearance of the screens used, they probably were generated by a version of Custom Screens.

Customs Screens is a programming utility that could become a standard part of every basic programmers arsenal of tools, allowing them to produce good looking screens and teaching more about programming. For the more advanced programmers, Custom Screens would be a shortcut and a time saver in developing some screens.

Custom Screens offers a variety of tools for creating your screens



Custom Screens \$69.95

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ConSoundtration

The game of "Concentration" goes to school

by Fred Freeland

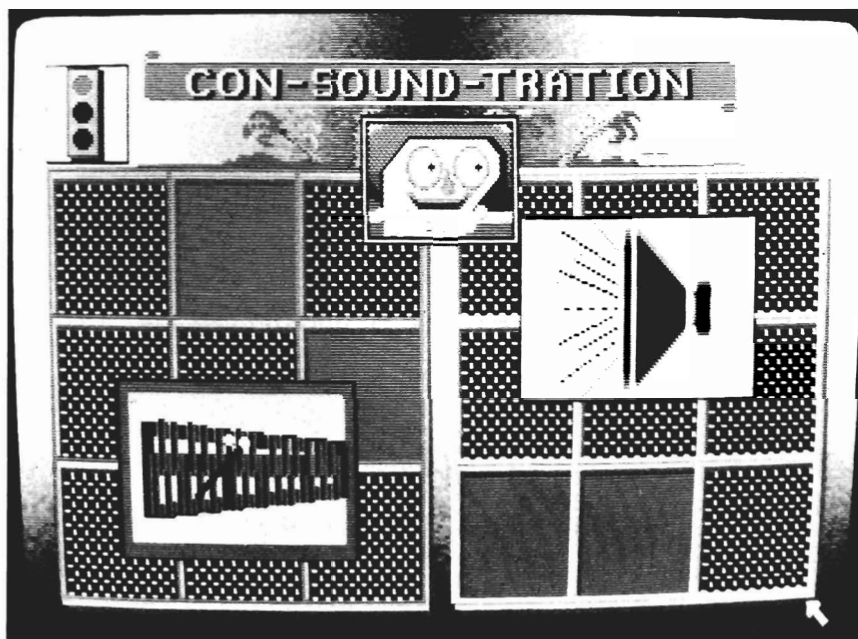
Remember the TV game of Concentration? The one where a board contains pairs of objects, or letters and you win by guessing at the pairs. Well Con-Sound-Tration is a preschool variation on that theme with added twist of digitized sounds.

The opening screen includes a picture of Con-Sound-Tration's mascot; a cross between Gumby and a circus clown. This character will be present throughout the game, like him or not. The

next screen is the control panel for the game. There are selections for one or two players, ABC's, Numbers, or Animals, and the number of squares you wish to play with. Non readers can quickly use this screen, since easy to understand pictures accompany the words. Click on the green light to begin. The disk will spin for quite a while in the higher levels. Pictures and sounds are loading. At the simplest level, the play screen shows two sets of four cards. Each set is a different color. The first player clicks on a card using

the mouse. A very clear voice will speak a Letter or Number, and the second player must click on the other set of cards hoping for a match. If the guess is correct, the clown's smiling face will appear. If the guess is wrong, a sad clown will look down on you. Your kids will want to skip the letters and numbers and go right to the animals. Here they will see pictures of elephants, pigs, horses, etc. The sounds are very realistic and entertaining. It will not matter if many matches are made. Once they have mastered the 4 card level, children may begin to test their memory by advancing to 12, 16 or 15 cards. A typical game at the lowest level takes just a few minutes. At the higher levels, ten minutes can pass before all the pairs are uncovered. You can quit back to the control panel at any time, by clicking on a red light visible at the top of the screen. This is a simple game in concept but has been executed well. The graphics are crisp and colorful to keep young minds interested.

The digitized sounds are ones that a child can relate to



ConSoundTration \$39.95

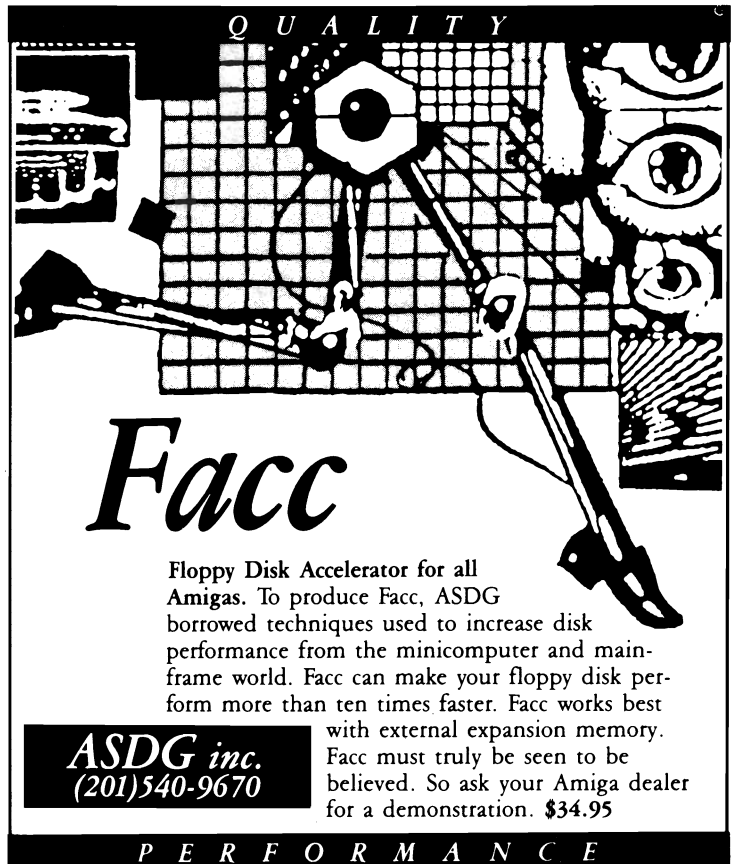
Aloha Fonts
P.O. Box 2661
Fair Oaks, Ca 95628-2661

Pixmate (continued from page 16)

fects possible deals with the extraction of bit-planes from an Image. When an image is loaded the window will indicate the number of bit planes used by the display. Pixmate will cut certain bitplanes at the click of a mouse showing the results immediately. This can produce some unusually nice results. As with most operations, Pixmate will let you recall your original display. Bit plane information can also be shared or copied to another bit plane, further enhancing or altering your original. As if that wasn't enough the size of the bit planes can be altered as well. If for no other reason, you will want PixMate for it's format conversions. PixMate will change, with a little logical thought on your part, any image mode into any other. Artists and other serious users of Amiga's powerful graphics will understand the significance of this. Pixmate will even consider Extra halfbrite palettes, mentioned earlier, when converting resolutions and display modes. The size of an image can also be changed. This is controlled by four sizing gadgets labeled "thinner", "shorter", "wider", and "taller". These gadgets in turn contain Size factor gadgets which confine the sizing to "2X" and "3X" their normal displayed size. In addition to size changes, images can be flipped about their x and y axis. The combination of size and flipping is very versatile in actual use.

There is a multitude of interesting things that can be accomplished with Pixmate. I have but scratched the surface of the possibilities of this software. Once again, I'd advise anyone who enjoys using paint programs to add Pixmate to your collection. This is a quality piece at a good price, and should not be ignored.

PixMate \$69.95
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Protecting Power

Your computer is under attack!

by George Rapp

For most of us, our Amigas represent a substantial investment that we expect to use and keep safe for a long time to come. It comes as a surprise then that our machines are already under a subtle, insidious attack that can change contents of memory, hang the computer, or ruin some of its components. Worse still, the source of this assault is throughout our homes and offices.

Seriously, the power lines that we hook our computers and home electronics to are a potential source of damage. This is not the fault of the various utilities around our country. Most if not all power companies do an incredible job of supplying us with continuous, clean power. So, what are the power problems that we face, where do they come from, and what can we do about them?

What we are up against are voltage problems. There are three types of voltage problems: black out (no voltage), brown out (under voltage), or over voltage conditions. Blackouts are generally rare and are the result of damage to the power companies equipment or a circuit failure on site. There is no problem identifying a black out! Under

voltage conditions or brown outs occur when the power company can not meet the demand for electricity. Low power can produce erratic results but it too is easily identifiable when the size of the images on the screen shrinks, or the intensity of incandescent lights dims. That leaves the over voltage conditions which are often called spikes, surges, or transients. These are potentially the most dangerous since there is usually no indication that they are present and the damage that they do is cumulative. Noise is another type of electrical problem. It is interference that can travel down the power lines and produce glitches in the computer.

Dangerous over voltage conditions and troublesome noise are almost always local in source. It is often home appliances or utilities that are the problem. Electric motors can produce noise while running and large surges in voltage when first starting up. The larger motors, like those found in refrigerators or air conditioners are the worst offenders. Over voltage conditions from these sources are very high in voltage and short in duration.

Fortunately there are steps that we can take to protect our electronic equipment. There are three

basic methods of protection that have their own advantages and faults. They can be combined to enhance the overall protection benefit. The basic criteria for protection are how much power can be shunted away from your computer, and how fast can the protection device respond. Naturally, the terminology used to define these parameters are very technical and dull to most of us. The Institute of Electrical and Electronic Engineers (IEEE) has developed a standard, IEEE 587, that covers surge suppressors. Any commercial device that lists compliance with this standard should be adequate for almost all home applications.

The first of the three protection devices is a filter circuit. This is a cheap and efficient method of reducing noise and some of the smaller spikes. The second device is a metal oxide varistor or MOV. This small device is probably the most common because of its size, low cost, and good response. The last device is most often called a spark tube or spark arrester. These respond the slowest of the three, but handle the most power. Most of the better commercial products will have one filter, and three MOVs or spark tubes.

There is a reason for using

three MOVs or spark tubes. Most modern wiring systems use three wires at each outlet. There is one wire called the line that carries the power to the outlet, one called the neutral that acts as a return and the round hole at the bottom that acts as a ground or shield. One of these protective devices should be connected between each of the wires. The combination of devices in a commercial product should have been tested to ensure effectiveness.

There are a few numbers to look for in the specifications given on the box or on an insert. The first of these is the rating of the device. This represents how much power the protector can handle safely. The better ones will go up to 1875 Watts or 15 Amps continuous duty. The next parameter is the energy disipation which represents how much energy that the device can get rid of. This number will be expressed as Joules or Watt-seconds and the higher the number the better. Equally important is the response or reaction time which is measured in nanoseconds. Here the smaller the number the better since if the spike is of a very short duration and the protector responds slowly, the whole spike can hit your equipment. A last measure is the noise rejection or reduction. There can be a few numbers for this measure. The first part is a range of frequency in kilohertz that the noise will be reduced. Basically the wider the range and the lower it starts, the more protection from noise you have. The amount of reduction is measured in decibels and again the higher the number the more

protection is given. Sometimes, the decibel reduction is also given as a range as well. This is a result of the action of a filter improving with increasing frequency of the noise.

These are rather confusing numbers and terms for the uninitiated. What is most important, is to look for UL listing and the IEEE standard. Prices can range from a few dollars for a basic unit, through the fifty dollar range for some of the better protectors, up to hundreds of dollars for an "uninterruptable power supply" (UPS). (A UPS is a good choice for businesses who need to use their computers even if the power fails).

So far we have not talked about lightning as a source of surges. This is probably the most dangerous source of high voltage spikes because lightning can hit power lines or phone lines and direct large amounts of power right into your home. There is no safe method of protecting electronic equipment from lightning other than completely disconnecting. A UPS can help in this situation since it can supply power to a computer for a short time while it is unplugged. Again, because of its cost, this is not an option for home use.

If you are not going to be using the computer for some time, it is best to unplug the computer, monitor, modem, printer, and any other self powered accessory. With these steps and a small investment in a protecting device, your computer (or stereo, or VCR) can give you longer trouble free service.

ProDrive

(continued from page 33)

only had pass-throughs.

The ProDrive has a 27" cable which is 12" longer than the 1010, allowing more leeway in its placement in the workspace. (This is even more important with the Amiga 500 because of the connector location.) There is a spring-loaded door on the ProDrive that closes the slot when there is no disk in the drive. If you've ever taken apart your 1010, you realize how much dust accumulates within the drive mechanism from not having a door like this incorporated into it's design. That about sums up the visible and audible differences.

Progressive Peripherals also makes a ProDrive for internal use in the A2000. Both devices contain industry standard, NEC FD 1036 A drives.

Should you purchase a ProDrive? Certainly, I would immediately recommend the ProDrive to purchasers of the Amiga 500. When, used with the 500, the 1010 drive just about defys connection without undo strain. Beyond that, if small size, a longer cable, quieter operation, and lower price mean anything, than the ProDrive would seem to have better specifications going for it from the word go.

ProDrive:

External \$239.95
Internal (A2000) \$189.95

Progressive Peripherals &
Software Inc.
464 Kalamath Street
Denver Co. 80208
(303) 825-4144

Amiga Live (continued from page 30)

but only with the maximum 8 megabytes of RAM. A captured sequence can be saved in LIVE!'s "riff" format. Riff writes out a compressed data file of the captured images that are playable from a Public Domain program called PlayRiff, included with the LIVE! distribution disk. PlayRiff has the capability of saving individual frames as a

whole sequence of frames and then, through PlayRiff, save each individual frame as an IFF file for further editing or incorporation into an animation. If you can manage to capture a short loop with LIVE!, this can be played back as a seamless circular loop in playriff. PlayRiff also allows you to step through the frames so as to analyze motion or

versal acclaim and would certainly have sold thousands of units. In the intervening years we have seen the real exploitation of Amiga's HAM mode, and a new digitizing standard has been set by New Tek's DigiView. The LIVE! we have today seems to produce the same quality images as those on the original A² demo disk we saw in early 1986.

To be fair, DigiView and LIVE! are two completely different products. Nevertheless, Amiga users have come to expect at least 4096 colors in their digitized video-representations. The LIVE! folks are trying to accommodate this new state of affairs, but it's a mighty tall order to fill. Live!'s present HAM mode does a nice job with a stable image, but any movement becomes severely distorted and unrecognizable. Even if you can get a nice HAM image on your screen, you better run Grabbit! if you want to be able to save it, because right now, LIVE! will only let you watch.

† Note — The software that accompanies LIVE! is titled "Beta". Not all the features claimed in the manual work. The most disappointing omission is that, in HAM mode, none of the menu options (not even a simple screen save) are available for use.

LIVE! \$295.00

A² DISTRIBUTIONS

6114 LaSalle Avenue, Suite 326
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Author, Gary Gehman, tries out Live! with a self portrait

standard IFF files. If you meant to capture a sequence of consecutive frames from a video performance, you could not do it from the standard LIVE! screen. No matter how fast you tried to save the first frame, your system would be held up for as long as it took you to enter the name and have the file written to disk. All this time, your video is still running and frames are being lost.

Capture gives you the ability (albeit limited by the amount of memory you own) to save a

between-frame changes.

Being the first real-time video digitizer, LIVE! represents a long-awaited breakthrough for the Amiga owner. For the first time, it is possible to bring into one's computing environment images from standard video sources. But the success or failure of LIVE! as a product will depend on A²'s commitment to enhance an already dated product. Had it come to market in the earliest days of the Amiga, LIVE! would have met with uni-

Read-A-Rama

*An Educational Program from
Unicorn Software*

by Steve Dock

Computers have proven themselves useful tools in classrooms and many parents look for educational software for home use. Unicorn is dedicated to meeting that need. They produce products for the MacIntosh, Atari ST and Amiga. Read-A-Rama is one of fifteen titles available in Amiga format. It is designed to build reading skills for 5-8 year old children.

The software comes packaged in a colorful plastic case, with two diskettes, a color flyer, and a

short instruction card. Read-A-Rama does not have a Work-Bench Icon, and therefore is not designed to multitask. The author preferred to load the program directly from the startup-sequence. I have no problem with this since 5-8 year olds probably should concentrate on one task at a time. Once the introductory screens have passed the child is shown a ticket booth and a menu of five activities.

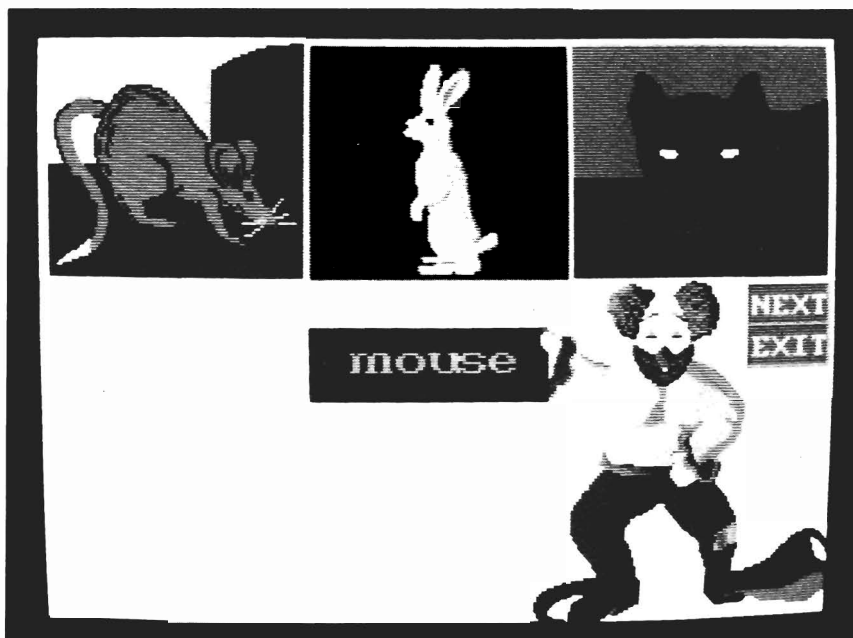
All choices are made by pointing with the mouse and clicking either mouse button. The list of

activities includes: Word-A-Rama, Read-A-Rama, Spell-A-Rama, Read & Remember, and Spell & Remember. Each activity includes plenty of color, sound, and speech. Lets start by looking at Word-A-Rama. This module is basic picture and word association. The child first selects one of fourteen categories; from body parts to pets. (While the chosen module loads, a bright piano fanfare plays). The screen will soon contain three pictures a clown and a mouse pointer. The child clicks on a picture and the word will be printed on screen and spoken aloud. The child may move on another set of pictures or exit using onscreen options.

If exit is selected the Ticket Booth returns and you can choose Read-A-Rama. Once again you select a category of words, but this time the screen will have six pictures shuffling around. The voice directs you to press a key and the movement stops. Now the voice asks you to find each object. Once again basic word picture associations are developed. You may press the ESC key at any time to return to the Ticket Booth. You will see a score screen after this activity.

Spell-A-Rama develops spelling (and typing) skills. After the

(continued on page 55)



Wordplex (continued from page 8)

sire. PAR is selling additional Wordbase disks to keep the game interesting. We had an opportunity to try the nature disk which includes: trees, flowers, birds, animals, insects and reptiles. This selection of phrases was very educational and entertaining. Other WordBase disks include America, and the Bible.

The author has also provided a program to add to, or modify the databases. The WordBase program runs via an Icon. You select a category by clicking on it with your mouse. Then you can Print, Review, or Enter phrases. You can use WordBase to adjust the reading level of phrases as needed. Mostly you will use it to add new phrases.

The game comes in an attractive plastic binder with a thorough and readable manual. WordPlex is not copy protected. Along with the forthcoming data disks, the entire series can be copied to a hard disk for those marathon games of Wordplex.

My conclusions are that Wordplex is an entertaining program that incorporates an educational potential. It's not Marble Madness or Defender of the Crown, but my family and I have enjoyed WordPlex and expect to continue playing.

WordPlex \$34.95

Wordplex Data Disks \$24.95

Par Software Inc.
P.O. BOX 1089
Vancouver, WA 98666
800-433-8433

WB Extras (continued from page 26)

has put into designing and writing this program, so he put much of his effort into inventing a new (at least to me) way of protecting it. He offers his method of protection to other developers, and if it takes off, it will be a significant contribution to the world of Amiga. The disk can be copied as much as you want, as though there were no protection, but the copies die in ninety days! They let out a little whimper about their time having expired and just die! Before the ninety days are up, the copy can be rejuvenated and be given a fresh ninety days by a little operation that requires the use of the original disk. Isn't that slick? He backs this protection up with another, more familiar, procedure that asks you to refer to the manual and enter some word that appears on page so-and-so. This amount of protection is clearly a fortress against the casual user, but I expect will be taken as a delightful but brief challenge by serious thieves.

The small manual that comes with WBExtras takes the reader carefully through the use of the program, with tutorials and examples. It gives step by step instructions on making your Ramtools selections permanent by modifying the Startup-Sequence. A full list of the disk's contents is also included.

The major premise of WBExtras is to encourage Amiga users to stay with the WorkBench and never deal head-on the the CLI. This will be appealing to many new Amiga owners and to those who want to add CLI power to Workbench menus. Ironically, to make fullest use of WBExtras, one needs a fairly good acquaintance with the CLI. If you have no desire to learn the CLI, or prefer the convenience of Menu selections, or want to prepare "Turnkey" disks for others, WBExtras is a good way to broaden the horizons of your Amiga use.

WbExtras \$39.95
Lynn's Luna C
P.O. Box 1308
Canon City, CO 81212
(303) 275-5858

TrackBall (continued from page 45)

there is more immediate control of the rate of change of the wing surfaces. Graphics packages like Deluxe Paint II can get also some benefit from the trackball. There is slightly better fine control, especially if you set the mouse movement rate at 4 in preferences. With the trackball's coast, the slow rate does not bog down Workbench use or take up all the desk for drawing a long line on the screen. It is also possible to get some very interesting effects with custom brushes by rolling the trackball while painting.

The trackball coast also works well with spreadsheets since it is easy to zip around the screen as well as the mouse. That is about the only productivity based software that the mouse helps. For word processing, it is much more difficult since it requires two hands to use and this breaks up typing. The trackball does make a valuable addition for inputting on the Amiga but it is not a real substitute for the mouse. The selling price for the trackball has been under \$50 making it a fairly safe investment. It is less expensive than many other alternate mouse devices that do not work as well or are likely to be as reliable. The Wico rendition is built solidly and has a very smooth rolling action. The buttons have a slightly soft and springy feel to them but should hold up to heavy use. It would be nice to see a "right" mouse button that could latch to keep it a one handed operation but there are few other changes to make to this excellent product.

Command Control Trackball \$49.95

Zebra Systems, Inc.
78-06 Jamaica Avenue
Woodhaven, NY 11421
(718)-296-2385

Read-A-Rama (continued from page 53)

child chooses a category a picture of a stage with red curtains appears. The center stage is used to present a picture of an object and the voice asks the child, "What is this picture." Throughout all five modules, positive reinforcement is given. Your child often hears, "Great Work" and "You're Smart." If a wrong answer is given, the child will be told "That is not the right answer, try again."

Read & Remember is like concentration. Six pictures will appear and wait until you click the mouse. Then a screen of clowns will cover up the objects. The voice will ask you to find an object.

The final activity is Spell & Remember. Here you can create your own lists of ten words for spelling practice. This selection requires a formatted blank disk so have one ready. The child can choose to recall a previous list or create a new one. A bright yellow screen contains ten empty boxes. The Amiga Voice instructs you to type one word in each box. Then click on save or use. Once you select a set of words, a clown pulls each word from his bag of tricks and holds it up for a specific number of seconds. The word then disappears and the child is asked "Please spell the word."

Unicorn advertises "Classroom Tested" on the packaging, and I your choice. When you uncover believe it. Using Read-A-Rama is fun, consistent, and trouble free. The second disk contains the same activities but using more advanced words. Level 1 seems appropriate for K-1, and Level 2 for grades 2-3. If you are looking for high-quality educational software which uses Amiga graphics, sounds, and speech write to Unicorn for their catalog. Better yet ask your software dealer to stock several titles. Read-A-Rama is a good reason to share your Amiga with your children, or a good reason to buy an A500 for them

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ASDG, Inc.....	49	New Horizons Software.....	3
Cardinal Software	32	Quality Computing	49
CDA, Inc	23	Pacific Peripherals.....	39
Central Coast Software	29	Peacock Systems	16
D-Five Associates	28	RGB Video Productions	13
Discovery Software.....	17	Sedona Software	30
Hash Enterprise	35	Soft Touch	37
Interactive Softworks	14	Software Visions, Inc.....	Cvr II
Lynn's Luna C	14	Supra, Inc.	Cvr III
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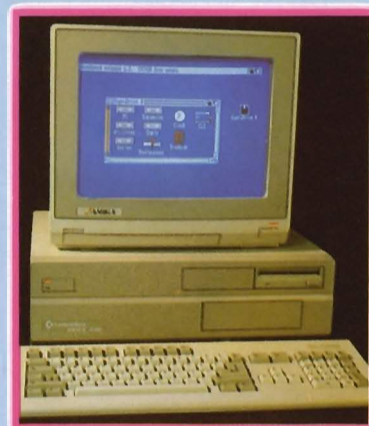
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