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(see page 51)

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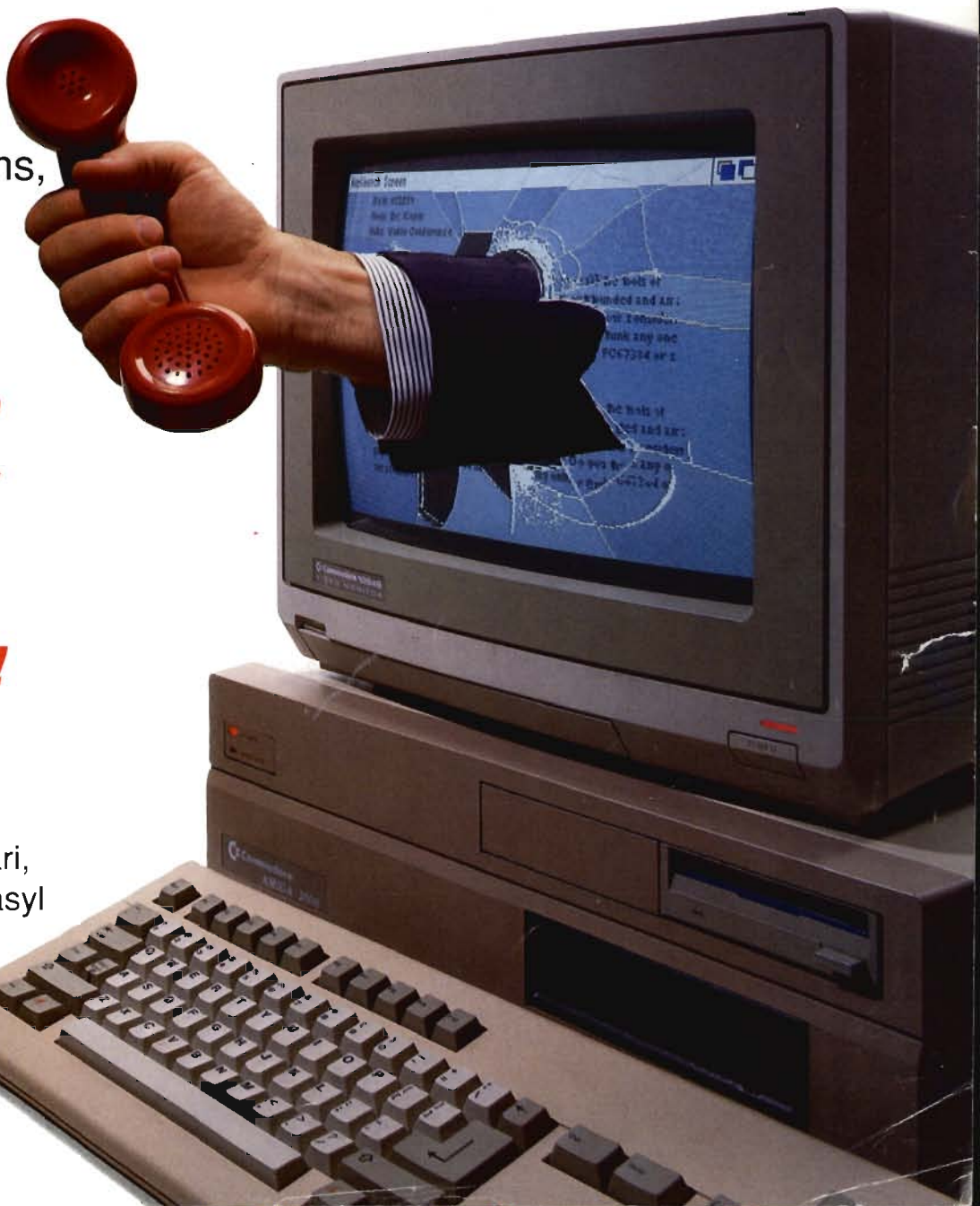

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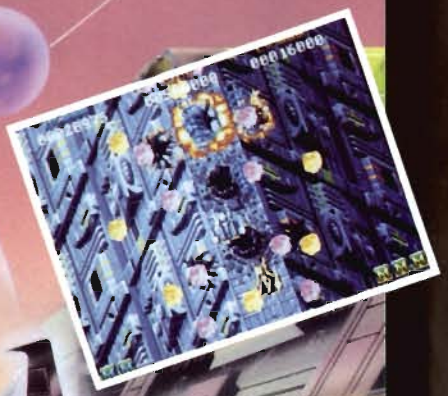

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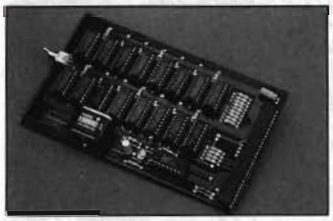

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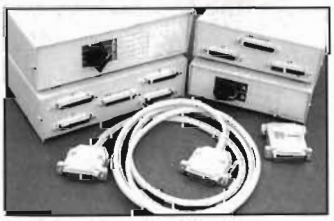

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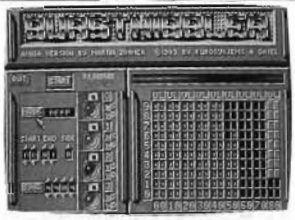

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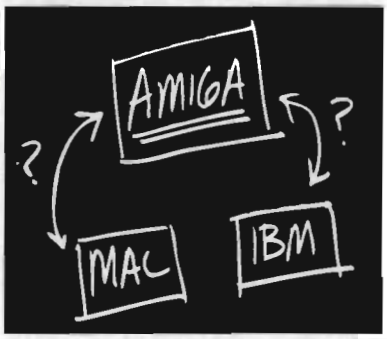

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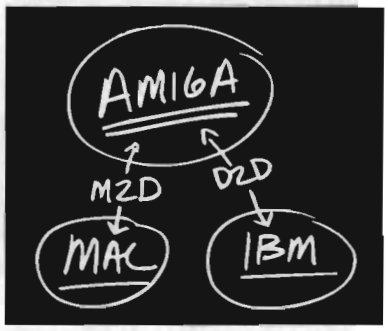

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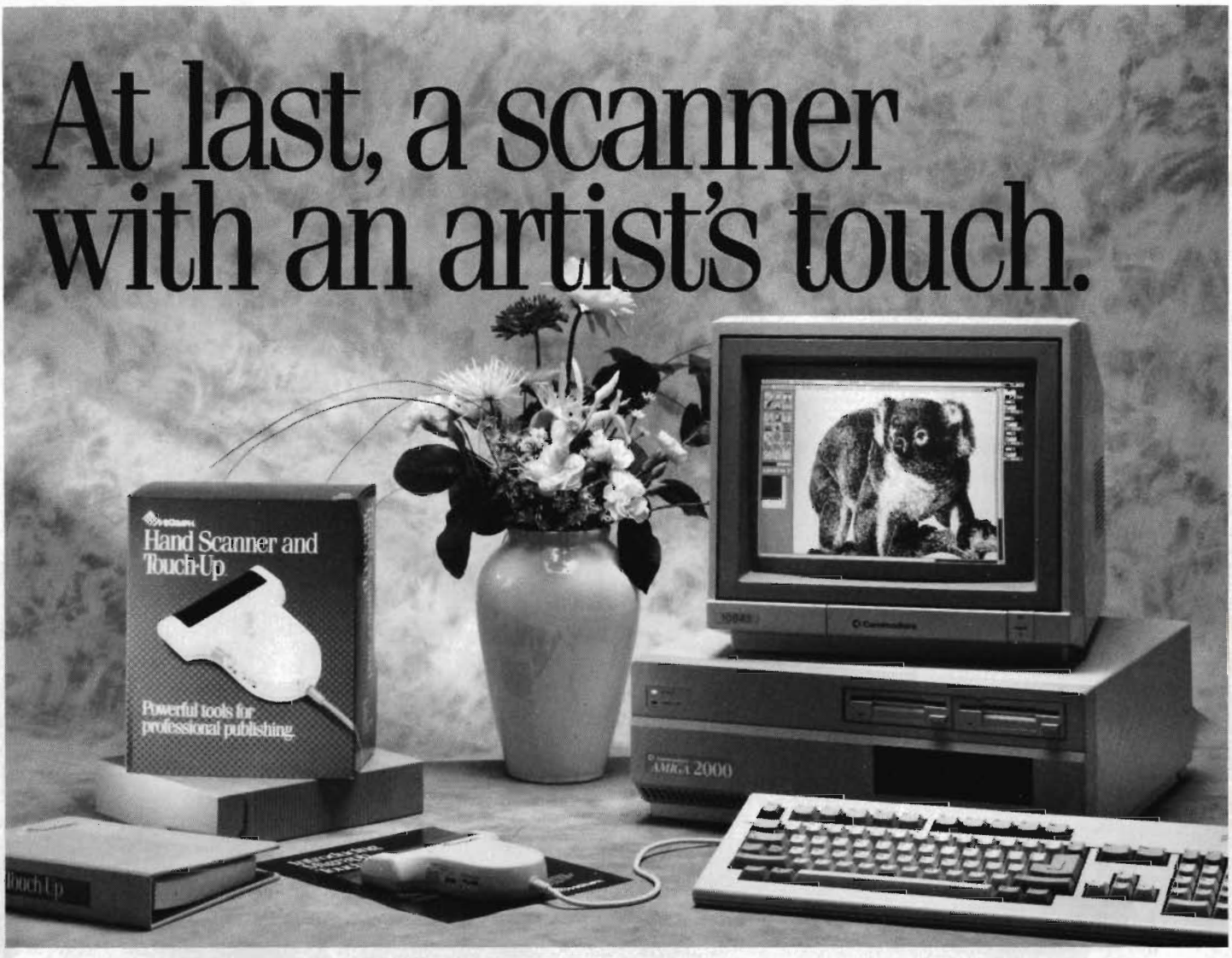

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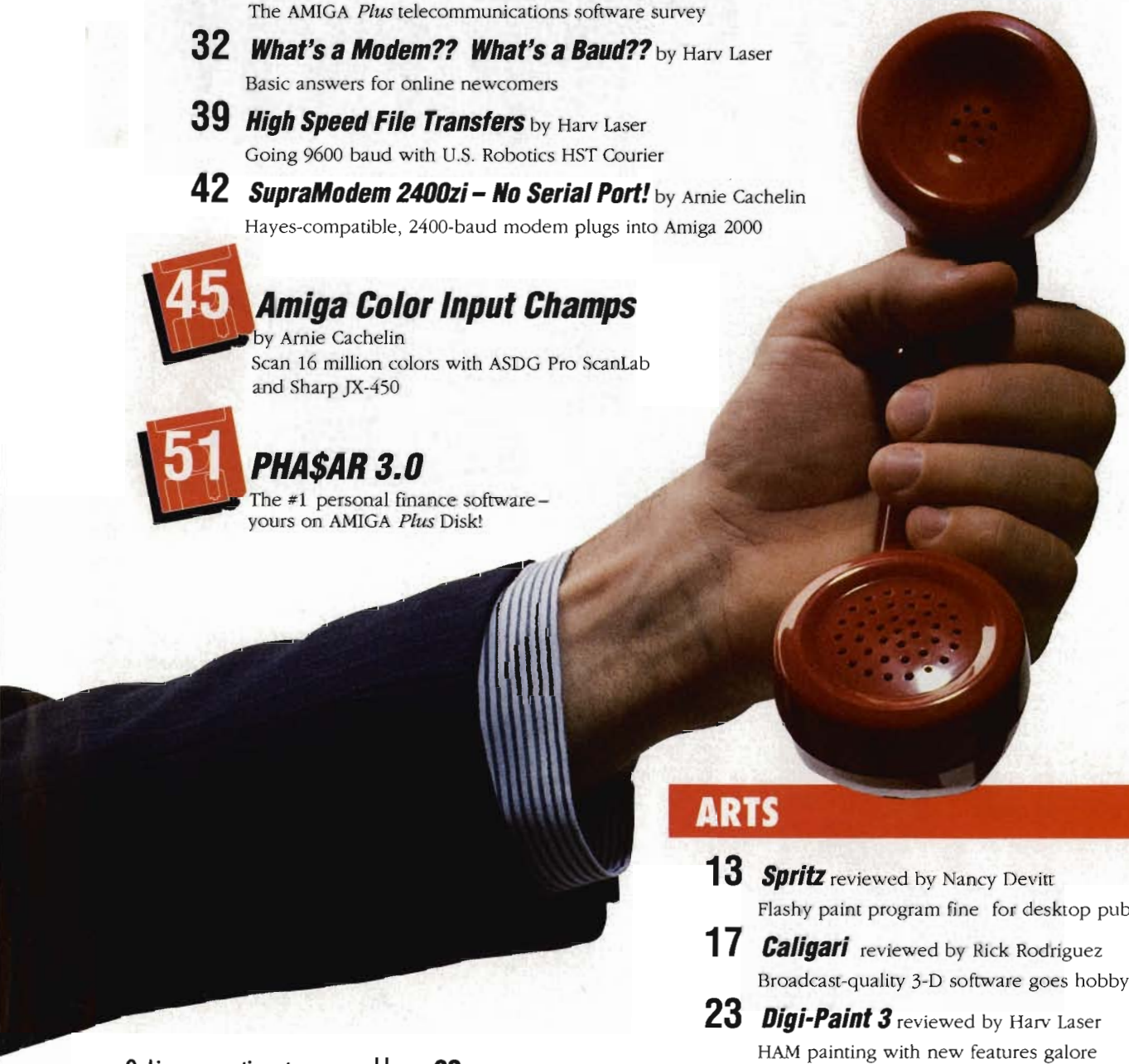

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ON DISK

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All articles marked with the disk symbol have programs or graphics on this month's AMIGA Plus Disk! If you bought this magazine without the disk, here's how to order yours now!

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EDITORIAL

I would like to express my deepest thanks to all the AMIGA *Plus* writers, advertisers and readers who phoned to find out if the people at the magazine were okay after the Semi-Great San Francisco Earthquake.

Tuesday, October 17, 1989 started out as the first day of our "time to get serious" editorial push for this issue's stories. Then, of course, at 5:04 p.m. our building started shaking for what seemed like a very long 15 seconds. As it happens, Antic Publishing is the sole tenant of a big, old brick building on the flatlands a couple of blocks from the bay. We are also only a few blocks from that Bluxome Street building where the top-floor brick facade fell out and killed two MacUser editors leaving a software company interview.

All this would seem to put AMIGA *Plus* in a relatively high-risk category. However, when the shaking stopped, our building had not dropped one brick or one pane of glass. (A couple of panes did fall out of the building across the street.) No cracks had appeared in our walls, and hardly anything even fell off our typically-magazine-office crowded shelves. The worst thing which happened to AMIGA *Plus* was that our part of town didn't get electricity turned back on for two days, so it wasn't until Friday that Antic Publishing re-opened for business and began answering the phones. Afterwards, we were happy to learn that our building is built on solid bedrock, not landfill.

Since the San Francisco end of the Bay Bridge is only one block away from AMIGA *Plus*, we did have two staffers actually driving home across the bridge at 5:04. But they didn't get far enough through the rush-hour traffic to reach the section that gave way. Another two staffers were apartment renters in the Marina district. One still is. (Two months free rent while the landlord earthquake-proofs the structure.) The other was red-tagged, but fortunately had local relatives to stay with during a house-hunt.

The bottom line is that nobody at AMIGA *Plus* was hurt in the 7.1 quake and most of us were not even terribly inconvenienced — which was about the way it went throughout the entire Bay Area, except for those unlucky few whose stories have been televised in such great detail.

Only three days after the earthquake, the AmiExpo at nearby Santa Clara Convention Center went on as scheduled. Most exhibitors had to arrive early to set up their booths, flying via San Jose Airport, which had been quickly reopened after a brief shutdown. AmiExpo attendance was surprisingly high, with plenty of users clearly in a buying mood. It was a good atmosphere for Amigans to get back into a "life-goes-on" mindset. There were even some hot new products shown. You can read more AmiExpo news in this issue's Alert Box section.

Nat Friedland

Nat Friedland
Editor, AMIGA *Plus*

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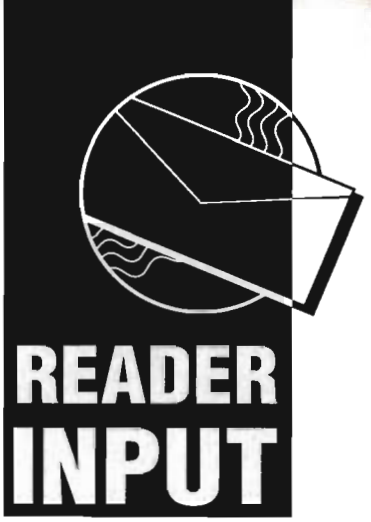


Your letters to AMIGA *Plus*

Style a Sham?

As a Sculpt-Animate 4-D and Photon Paint 2.0 artist, I am very angry about an article in AMIGA *Plus* #4, "Doing it with Style" by Dr. R. Shamms Mortier. When Shamms says that he distorts artists' works so he is not committing any copyright infringements, he not only is, but he is also greatly insulting the artist.

Shamms' "art" looks like very bad doodling to me. I just hope his intentions are not to block positive artists by getting on AMIGA *Plus*' masthead. Boot him out.

Brian Linwell
San Francisco, CA

Borrowing images for use in art has a long, venerable tradition, particularly in Modern Art, where collages and distorted images abound. Part of the Amiga's appeal is that it lets artists take scanned and digitized images and adapt them as elements of their own works. (In general, it is legal to use a non-copyrighted image as your own if it is "significantly" altered. But you should NOT use copyrighted characters, such as those from Disney, Lucasfilm, Charles Schulz, etc.)

Your complaint about "bad doodling" has been made of such artists as Monet, Degas, Cezanne, Picasso, and many more. Dr. Mortier's article makes the point that one way to know when you're developing an individual artistic style is that some people will react strongly against it. AMIGA Plus *encourages artistic originality by publishing pictures representing the entire spectrum of style.* — + EDITORS

Animation Contest?

I am a frequent reader of AMIGA *Plus*, and would like to know if you plan to have an animation contest in the near future. I would be interested in submitting an animation, if so.

Jess Simons
Richmond Hill, Ontario,
Canada

Be sure to check out our upcoming First Anniversary issue (April/May 1990) for a major announcement. — + EDITORS

Winning Applications

Your magazine and disk are a winning combo and contain something for everyone! I especially like the top-shelf applications programs that you include on the disk, particularly "Promise," the commercial 95,000-word spell checker in the AMIGA *Plus* #4, and the MaxiPlan Income Tax Template in your premiere issue. Keep those applications coming.

Robert McLean
West Yarmouth, MA

We've got lots more programs lined up that you'll hopefully like. On this month's disk be sure to check out ***Phasar*** *version 3.0, the award-winning personal finance program, which already includes a 1988 tax template that you should be able to use for 1989 with only minor modifications. We'll try to inlude those modifications on our next issue's disk.* — + EDITORS

Fun Paint Cartoons

I enjoy your magazine very much, and every day I use your "Fun Paint" program from AMIGA *Plus* Disk #2. It's better than some commercial programs. Cartooning is a hobby of mine, but I hope to sell my ideas some day.

Richard Hall
Downey, CA

It's very satisfying to see good results from one of our programs, and the charming, simple cartoon files Richard sent us show he's putting Fun Paint to good use. — + *EDITORS*

Ad Agency Talent Scout

I represent the advertising agency which created the new Amiga ad campaign — the TV commercials where young "Stevie" solves problems for famous people, and the print ads with real people using the Amiga in business and at home. We are interested in learning other creative ways people use the Amiga daily. Send us disks or printouts of your, art, music, graphics, anything. (Sorry, we can't return the material.) Your work need not be professional, everyone's story is of interest to us.

Jeff Berg
M.V.B.C.S.
375 Hudson Street
New York, NY 10014

A good source of creative Amiga user info is the Alert Box section of this magazine, Jeff. — + EDITORS ■

Your technical questions answered here

By the AMIGA *Plus* Staff

Colors Beyond Control

Q: I really enjoy being able to reset my Workbench screen colors with Preferences. The problem is that whenever I stumble upon a particularly beautiful combination, it seems that my icons look rotten, and some text is practically illegible. What is wrong with my colors...or is it the icons?

Also, how can I put more colors in my own icons? I use a shareware program (Hermes' IconLab) to convert brushes made in DPaint into icons, but my icons still don't seem as nice as some commercial icons I have seen.

Hugh Kolar
Green Bay, WI

A: *The four standard Workbench colors are chosen so that color 0 is a dark background (blue) for color 1 (white), which is used for text. These two colors should contrast, so if you make your background light, you will want a dark foreground. Color 2 (black) is used for shadows while color 3 (orange) is used as a highlight color. If you arrange your palette with these functions in mind, your icons should still look reasonable.*

Without adding more colors to your Workbench screen, you can't add more colors to your icons. One useful technique for creating the appearance of more colors is the dithered fill. In Deluxe Paint, this can easily be achieved by using the magnified mode to make a two-pixel square checkerboard pattern with two colors, cut this as a brush, then set the fill mode to "From Brush". You now have a fifth color which is between your original two. With this technique you can create a virtual palette of 10 dithered colors from the original 4 colors — check out this issue's disk for an example. (A variety of icon utilities is available on AMIGA Plus *Public Domain Library disk WB9 — see the DevWare ad in this issue.)*

TASS User ASKs Away

Q: I just received your October/November disk (#4) and followed the instructions for MakeTass. All I got was a CLI message: "Unknown command ASK." What can I do to get this script to run?

Geryl Strong
Seattle, WA

A: *ASK is a standard AmigaDOS command used in script files to ask simple yes/no questions. It should reside in the C: directory of your Workbench disk with your other DOS commands. Apparently, some of the earliest releases of Workbench 1.2 did not include this command. If this is the case, you can get ASK from anyone with a newer release (either 1.2 or 1.3). For example, try your local Amiga store. You might also search for ASK in the C: directories of your bootable, non-copy-protected, applications. When you find the command, copy it to your Workbench C: directory, and execute MakeTass again.*

Pointer Praise

Q: It was fun exploring the different mouse pointers offered in the Pointers drawer of AMIGA Plus Disk #4. Some of those little pointers are drawn well. How about telling us who the artists are so that we can attach their names as comments to the pointer data files using the CLI's FILENOTE command? I especially like the bird (Bird.p) and the unicorn (Prancer.p). But my overall favorite is the Christmas tree (XmasTree.p).

I did notice that the pointers all had one thing in common — all used the "sleepy-Zz cloud" as the "wait" pointer (the Amiga default). Do you know of any programs that allow you to edit and save the "wait" pointer?

I would like to see more pointers occasionally released on your disk as sort of a "running feature," perhaps using them as fillers for those issues where the disk would otherwise be just short of full capacity. Included are a couple of original pointers I drew.

Tim Gannett
Davenport, IA

A: *Our custom pointer program was a lot of fun to put together, and in fact most of the pointers on the AMIGA* Plus *disk were the collaborative effort of our staff. The three pointers you mention were by Associate Editor Carolyn Cushman, an inveterate doodler.*

As for the sleepy-cloud "wait" pointer, we don't know of any existing programs to change it. Our technical staff was unable to find out where the wait pointer resides in memory. (If it is in Kickstart ROM, it can't be touched). If anyone out there knows, please send us the details!

We enjoyed seeing your pointers, and we'd be interested in publishing more pointers created by readers as occasional fillers. — + EDITORS ■

ALERT BOX

News Notes for the Amiga Community

Southern Technologies Goes Belly Up

Southern Technologies, one of the largest distributors of Amiga products, has gone out of business, hurting quite a few Amiga developers. On August 30, 1989 Newbeck Financial Corp. sent out a "bulk transfer of goods" letter to a number of developers. This letter stated that effective September 11, 1989 Southern Technologies would be transferring to Newbeck "all stock in trade, fixtures, equipment, inventory, receivables, tangible and intangible properties and supplies."

However, no mention was made of debts owed to dozens of Amiga developers and manufacturers who had been doing business with Southern on a 30-60 day net basis. Word in the industry is that Newbeck (or someone) would be trying to settle accounts — but only to the tune of 30 cents on the dollar over the next two years. Needless to say, many Amiga developers are upset, and some have suffered considerable financial damage.

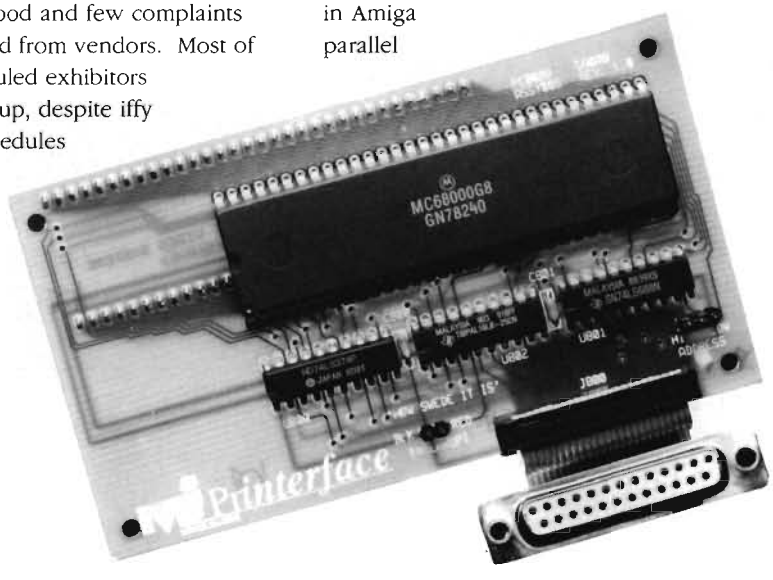
In fact, the Southern Technologies downfall has been suggested as a key factor in the recent shutdown of several respected Amiga developers — including Aegis, which has now been bought out by Oxxi. — GUY WRIGHT

AmiExpo Santa Clara '89 News

Starting only three days after the October 17 earthquake, the Santa Clara Convention Center AmiExpo drew quite respectable crowds. Amiga users in attendance were in a buying mood and few complaints were heard from vendors. Most of the scheduled exhibitors did show up, despite iffy airline schedules earlier that week.

Another pleasant surprise was the number of new hardware and software products premiered at the show — much more than at other recent all-Commodore events. One promising debut was Spirit's **AX-S** expansion box, which enables the Amiga to run a host of inexpensive IBM-PC cards.

IVS was showing off their **PrInterface** hardware, which takes over printer communications and frees the built-in Amiga parallel port for use with video/sound digitizers, etc.



The PRINTERFACE from IVS communicates with your printer, making it possible for Amiga artists to have a digitizer or other parallel-port device connected at the same time.

We also saw a wealth of multi-media/hyper-media software:

Mike Lehman demonstrated his newest version of **UltraCard** (1.4) and some new stacks. Running with a genlock it looked hot.

Joe Chen of Tensor Productions

was demonstrating **Vidi-Mice** which uses uses the LIVE! video digitizer and a video camera to transform your movements on camera into mouse movements, clicks, key press events etc. Its sister, MIDI-Mice, uses incoming MIDI events to generate these Amiga events.

A-Squared was running **Focus Video** (reviewed in this issue) with their LIVE! video digitizer board as well as the **Art of GO**, a long-awaited Amiga version of the ancient oriental strategy game. The Art of GO was about to be released a year ago when Infinity Software shut its doors.

Nearby, Virtual Reality Laboratories was showing another Infinity refugee, **Distant Suns**, version 3 of the Galileo planetarium program with a full screen sky view, detailed deep sky objects and expansion disks of stars.

Two new structured drawing/illustration programs were present in pre-release form: Scott Anthony was showing his **LaserUp! Draw** PostScript drawing program and Taliesin introduced themselves and **ProVector** which will feature 256 dithered colors on screen in hi-res mode and hi-res output to Preferences printers. — ARNIE CACHELIN & NAT FRIEDLAND ■

Eye Research and the Amiga

Studying vision by tracking responses to graphic images

By Rob Griffith

Scientists at San Francisco's Smith-Kettlewell Eye Research Foundation and Institute of Visual Sciences have found a powerful new research tool in the Amiga. Because of its special capabilities, the Amiga has become an essential part of the Smith-Kettlewell laboratories where scientists study visual perception by creating graphic images as stimuli. The subject's response to these stimuli are observed and measured.

Senior research scientist Ken Nakayama says, "The Amiga has changed the way I do research." Rather than coming up with a theory about how the eye works, and then trying to prove it or disprove it, Nakayama prefers an exploratory approach. "It's hard to discover something unless you have lots of things happening. That's why the Amiga is such a good medium."

Nakayama and his associates spend a lot of time just sitting in front of the computer, playing in much the same way that an artist might play. He makes extensive use of electronic 3-D eyeglasses. In the course of manipulating 3-D images, he may notice something about his perception of an image which he doesn't understand or which surprises him. Why does one image seem to imply a greater whole, while another image seems fragmented? By asking questions like this, he is trying to understand how the eye and brain communicate and make sense out of what we see.

We sat in a darkened laboratory and I placed the 3-D spectacles on my eyes. These are the same kind of specs used in 3-D games like Haitek's Space Spuds. Using a customized version of Deluxe Paint, Nakayama placed a simple white cross in the middle of a black screen. Then, he created a red circular brush with a radius a little smaller than the ends of the cross. With the stencil function of DPaint, he placed the red circle so it appeared to be behind the cross and therefore partially hidden by it. Using a custom feature that one of the programmers at the lab had put together, he created a 3-D effect where the visible part of the red circle seemed to be a few centimeters behind the black screen.

Why does one image seem to imply a greater whole, while another image seems fragmented?

Then he asked me to turn the glasses around, placing the left lens on my right eye and vice versa, so the part of the red circle visible through the cross would reverse dimensions and appear to be a few centimeters in front of the black screen. When I did this, I was surprised to note that I could see the entire circle! The black area outside of the cross seemed to be covered with a red circular cellophane. Even though only that part of the circle within the area of the cross was actually there, somehow my eyes hallucinated the rest! My brain had taken the sensory stimuli from my eyes, and somehow predicted and created the rest of the image. Discoveries like this are clues to solving the mystery of how the brain processes visual information.

Programming wizard Greg Yates told me about another experiment in which a baby was placed in front of an Amiga monitor. Electrodes on the baby's head measured EEG brainwaves. The EEG was also connected to the parallel port of the Amiga, and synchronized to a succession of DPaint images on the monitor. In this way, the scientists were able to determine what types of visual stimuli babies reacted to at various ages, and how these reactions compared to adult reactions to the same stimuli. According to Yates, in the past the same experiment would have required several separate pictures, several programs and several computers. Now, a single Deluxe Paint picture with various palette settings can do the same thing much cheaper and quicker. ■

Spritz

Flashy paint program is outstanding for desktop publishing

REVIEW BY NANCY DEVITT

+++ 1/2

Bargain-priced Spritz is a little-heralded but surprisingly good graphics program, with some unique advantages for desktop publishing. Shaky memory management and a cryptic manual are minuses.

It's not unusual to open a long-awaited and much-advertised software product to find that promised features don't exist or don't work. Once in a while, however, the opposite holds true — as in the case of **Spritz**. Happy surprises and useful treasures catapult this new $79.95 program from the category of "ordinary" to "indispensible." Developed by Stephen Vermeulen of Express Paint fame and filling a niche in the low-end graphics market, Spritz contains features for not only the beginning or casual Amiga artist but also to the more sophisticated graphics designer and, particularly, desktop publishers.

Using a feature called Smart-Link, Spritz can communicate with other programs or with multiple versions of itself, sending and receiving images, brushes and palettes with one simple command. It can instantly generate borders from any brush and can flip, pixelize, and convert the colors in any image to their complements.

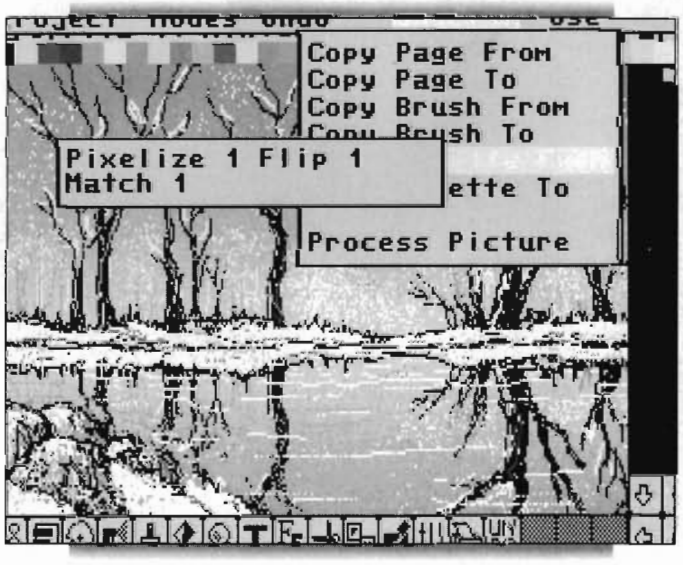
However, awkward documentation makes the learning curve steep. To implement one major feature requiring only a simple point-and-click, I had to consult five pages in three sections of the manual, including an Appendix.

Scrollable Pages

Express Paint, Spritz's more powerful big brother, was the first commercial paint program to let users edit scrollable pages larger than screen size. Spritz also supports this feature, providing a startup menu with options for defining screen and page resolution, width, height and number of colors. Particularly useful to desktop publishers, this feature allows the generation of full-page high-resolution borders and graphic images. Converted Macintosh graphics, with their generally larger screen (pixel) requirements can be manipulated easily.

Since you can define the exact screen size, Spritz supports both the NTSC (North American) and PAL (European) video standards.

There are some memory constraints to this feature, however, and the manual only touches on them. Spritz holds the image in memory while editing and in addition to definable page sizes offers unlimited undos and redos. The program records your every movement and holds it in RAM, mostly chip RAM. Although Spritz provides a "flush memory" feature, it doesn't warn you that you are running out of RAM. Once you exhaust your memory the program will not allow you to flush, and rebooting becomes the only alternative. I advise turning off the undo feature while



SPRITZ is an inexpensive but impressive paint program with a plethora of unusual features – many of which would be of special interest to desktop publishers.

NEW EXPANDED LISTING!

GAMES

- 3D Pool $27
- 4th & Inches $30
- 688 Attack Sub ..... Call
- AB Zoo ..... In Stock!
- Action Fighter $28
- Afterburner ..... Call
- Airball $28
- Airborne Ranger $36
- Alien Legion $36
- Alien Syndrome $28
- Alternate Reality $29
- Amiga Karate $24
- Andromeda Mission $28
- Annals of Rome $27
- Aquaventure ..... Call
- Archipelagos $29
- Arena $15
- Arkanoid $23
- Arkanoid II ..... Call
- Art Of Chess $24
- Astrarath $36
- Aunt Arctic Adventure $27
- Auto Duel ..... In Stock!
- Baal ..... In Stock!
- Bad Dudes $31
- Balance of Power $31
- Balance of Power 1990 ..... In Stock!
- Ballistix $22
- Barbarian $27
- Barbarian II $29
- Bard's Tale II $43
- Batman $34
- Battle Chess $34
- Battle of Britian ..... Call
- Battle of Midway ..... Call
- Battle Squadron $29
- Battle Tech $34
- Battlehawks 1942 ..... $36
- Battleship ..... In Stock!
- Beam $23
- Better Dead Than Alien $23
- Beyond Zork $35
- Bionic Commando $28
- Black Cauldron $29
- Black Jack Academy $29
- Black Magic $27
- Black Shadow $25
- Blitzkrieg/ Ardennes $42
- Blocker ..... Call
- Blood Money ..... In Stock!
- Blood Wych $36
- Bobo $24
- Bomb Busters $23
- Bombuzal $29
- Boomer-Ald ..... In Stock!
- Boot Camp $31
- Breach $29
- Breach Scenario $19
- Bridge 5.0 ..... $27
- Bubble Ghost $29
- Buffalo Bill $36
- California Games ..... In Stock!
- Capone $28
- Captain Blood ..... Call
- Captain Fizz ..... In Stock!
- Carrier Command $33
- Cashman $24
- Casino Fever $29
- Casino Fever $26
- Centerfold Squares $24
- Charon 5 ..... In Stock!
- Chessmaster 2000 ..... $30
- Chessmaster 2100 ..... Soon!
- Chrono Quest $34
- Circus Attractions $29
- Colossus Chess $27
- Combat Course ..... In Stock!
- Conflict Europe $36
- Contra $31
- Corruption ..... In Stock!
- Cosmic Bouncer $21
- Cosmic Pirate $37
- Cosmic Relief $27
- Craps Academy $26
- Crash Garrett $27
- Crazy Cars $27
- Crossword Creator $35
- Crystal Quest $38
- Cyber Complex ..... Call
- D.R.A.G.O.N Force ..... Call
- Daily Double Horse Racing $24
- Danger Freak $29
- Dark Castle $35
- DataStorm ..... HOT!
- Deathbringer $29
- Deep Space $21
- Deja Vu II ..... In Stock!
- Denaris $28
- Detonator $28
- Devonaire ..... Call
- Distant Armies ..... In Stock!
- Dive Bomber $37
- Dominator $29
- Dominoes $18
- Downhill Challenge $24
- Dr. Doom's Revenge ..... Call
- Dragon's Lair $38
- Dream Zone $31
- Dungeon Master $29
- Dungeon Master Editor $24
- Dungeon Quest $34
- Earl W. Commisioner's Disk $15
- Earl Weaver 88 Stats $15
- Earl Weaver Baseball $35
- Ebonstar $28
- Eliminator $28
- Emmetic Skimmer ..... Call
- Empire $36
- European Scenery $20
- Evil Garden $16
- Exolon $28
- F/16 Combat Pilot ..... Call
- F40 Pursuit ..... In Stock!
- Face Off $18
- Faery Tale $34
- Falcon ..... HOT!
- Falcon Scenery $20
- Famous Course Disk $17
- Fast Break $30
- Femme Fatale $28
- Fernandez Must Die $29
- Ferrari Formula 1 ..... $36
- Feud $18
- Final Mission ..... In Stock!
- Fire & Forget $27
- Fire Brigade $33
- Fish $31
- Flight Simulator 2 ..... $32
- Forgotten Worlds $29
- Formula One $21
- Foundation Waste $24
- Four By Four $31
- Four In One $22
- Fright Night $28
- Frost Byte $21
- Galactic Invasion $19
- Games, Winter Edition $34
- Ganymed $22
- Garrison $36
- Garrison II ..... Call
- GeeBee Air Rally $28
- Gemini Wing $29
- Genius $29
- Gettysburg $42
- Ghouls & Ghosts ..... Call
- Global Commander $29
- Grand Prix Circuit $30
- Gridiron ..... In Stock!
- Guerrilla War ..... Call
- Gunship ..... At Last!
- Gunshot $24
- Harrier Combat $35
- Head Coach $39
- Heroes of the Lance $29
- High Steel $28
- Hillstar $36
- Hit Disk! ..... In Stock!
- Hole In One $25
- Hole In One Courses ..... Call
- Hollywood Poker ..... Call
- Holmes ..... Call
- Hometown USA $29
- HoneyMooners ..... Call
- Hostage ..... In Stock!
- Hot & Cool Jazz Disk $19
- Human Killing Machine $28
- Hunt For Red October $36
- Hybris $26
- I Ludicrous ..... In Stock!
- Indiana Jones (Doom) $28
- Indy Jones: Adventure ..... Call
- Indy Jones: Arcade $29
- Insanity Fight $29
- Interceptor $35
- International Soccer $28
- It Came From The Desert ..... Call
- J Nicklaus Golf $37
- Jackal $31
- Japan Scenery $20
- Jaws $29
- Jet $35
- Jinks $31
- Joker Poker $33
- Journey ..... In Stock!
- Jug $27
- Kampfgruppe $46
- Karate Kid II $28
- Keef the Thief $36
- Kennedy Approach $30
- Kickstart 2 ..... $17
- Kid Talk $34
- Kikugi $20
- King Arthur $37
- Kingdoms of England ..... In Stock!
- Kristal $35
- Lancaster $31
- Lancelot $29
- Land of Legends ..... Soon!
- Las Vegas $19
- Last Duel $26
- Last Inca $28
- Leatherknecks $29
- LED Storm $29
- Legend $29
- Legend of Djel $36
- Licence to Kill $29
- Life and Death ..... Call
- Lombard Rally $29
- Lords of the Rising Sun $33
- Magic Johnson Hoops ..... Call
- Major Motion $27
- Maniac Mansion ..... Call
- Marble Madness $19
- Mean 18 ..... $27
- Menace $24
- Metropolis $31
- Might & Magik II ..... Call
- Millenium 2.2 ..... $37
- Mind Roll $22
- Mission ConBat ..... In Stock!
- Moebius $36
- Momentum Check $25
- Neuromancer ..... Call
- NightDawn $25
- Ninja Mission $18
- Nuclear War ..... Call
- Obliterator ..... In Stock!
- Off Shore Warrior ..... In Stock!
- Ogre $25
- Omega ..... Call
- Omni Play Basketball $37
- Operation Clean Streets $28
- Operation Wolf $26
- Out Run ..... In Stock!
- P.O.W. $26
- PacLand $29
- Paladin $29
- Paladin Scenario $19
- Paranoia Complex ..... Call
- Persian Gulf Inferno ..... Call
- Phantasm $24
- Phantasie III $31
- Phaser Gun $45
- Phobia $37
- Pioneer Plague $27
- Pipe Dream ..... Call
- Planet of Lust ..... In Stock!
- Platoon ..... In Stock!
- Pocket Rockets $29
- Poker Solitaire $24
- Police Quest ..... In Stock!
- Pool of Radiance ..... Call
- Populous ..... HOT!
- Populous Worlds Disk $21
- Ports of Call $36
- Postman Pat $29
- PowerDrome $29
- Power Sticks ..... In Stock!
- Power Struggle $29
- Prime Time $27
- Prison $28
- Puzzle Storybook $29
- Qix ..... HOT!
- Quest For Time Birds $36
- Questron II $35
- Rambo III ..... Call
- Rampage $27
- Reach For The Stars $33
- Realm of the Trolls $37
- Realm of the Warlock $25
- Rebel Charge ..... In Stock!
- Red Heat $39
- Reel Fish'n $32
- Renegade $28
- Return To Atlantis $19
- Revenge of Defender $27
- Rhyming Notebook ..... Call
- Rick Dangerous ..... HOT!
- Ringside ..... In Stock!
- Road Raider $27
- Robbery $18
- Robo-Cop $36
- Rock Challenge $27
- Rocket Ranger $33
- Rockford $26
- Roger Rabbit $31
- Roll Out $27
- Romantic Encounters $29
- Rubicon Alliance ..... Call
- Rush'n Attack ..... Call
- RVF Honda $31
- Santa Paravia ..... In Stock!
- Scary Mutants $27
- Scenery Disk 7 or 11 ..... $18
- Scenery Disk 9 ..... In Stock!
- SDI ..... Call
- Seconds Out Boxing $21
- Sex Vixens From Space $29
- Shadow of the Beast $34
- Shadowgate $33
- Shanghai $29
- Shinobi ..... Call
- Shufflepuck Cafe ..... HOT!
- Side Arms $29
- Sidewinder ..... In Stock!
- Silent Service $24
- Silicon Dreams $25
- SimCity ..... HOT!
- Sinbad ..... Call
- Skate Wars ..... Call
- Sky Blaster ..... In Stock!
- Sky Chase $28
- Sky Fighter $19
- Skytox II $19
- Slaygon $29
- SlipStream $17
- Smooth Talker $36
- Snake Pit ..... In Stock!
- Solitaire Royale $22
- Sorcerer Lord $28
- Space Cutter $20
- Space Harrier $36
- Space Racer $21
- Space Ranger $18
- Space School Simulator $24
- Space Station ..... In Stock!
- Speedball $29
- Spherical $29
- Spin World ..... Call
- Spitting Image $29
- Star Goose $29
- Star Ray ..... Call
- Star Wars Trilogy $35
- StarFlight ..... Call
- StarGlider $33
- StarGlider II ..... In Stock!
- Stellar Crusade ..... Call
- Stock Market Game $19
- Story So Far $29
- Street Cat ..... Call
- Street Fighter $29
- Strider ..... Call
- Strip Poker Data (each) $15
- Strip Poker II ..... In Stock!
- Sub Battle $34
- Super Scramble $29
- Sword of Sodan ..... In Stock!
- Swords of Twilight $36
- Synapse ..... In Stock!
- Tale Spin $37
- Tanglewood $27
- Tank Attack $22
- Targhan $36
- Targis ..... In Stock!
- Techno Cops $34
- Tele Epic ..... In Stock!
- Telegames $26
- Telewar $29
- Telewar II ..... In Stock!
- Terrorpods $28
- Test Drive II $30
- Test Drive II Data (Each) $15
- Tetra Quest $27
- Tetris $25
- Three Stooges $31
- Thud Ridge ..... Call
- Thunder Boy $26
- Time Bandits $28
- Time & Magik ..... In Stock!
- Titan ..... Call
- Tom & Jerry $27
- Tracers $27
- Transputer $24
- Triad $36
- Triple X $29
- Trivia Pursuit $29
- Turbo $17
- TV Sports Basketball ..... Call
- TV Sports Football $36
- Twilight Zone $29
- Ultima III $29
- Ultima IV $39
- UMS Data Disks ..... Call
- Under Sea Commando ..... Call
- Uninvited $31
- Univ. Military Sim. ..... In Stock!
- Universe III $35
- Vampire's Empire $17
- Vegas Gambler $30
- Vigilante $29
- Virus $21
- Vortex ..... Call
- War In Middle Earth ..... In Stock!
- Warlock $28
- Wayne Gretzky Hockey $34
- Where Sleeping Gods Lie $36
- White Death ..... Call
- Willow $28
- Wizard of Wall Street ..... Call
- Wizard Wars ..... Call
- Wordplex $25
- World Class Course Disk ..... Call
- World Class Leader Brd $29
- World of Flight $109
- World Snooker Billiards $22
- World Trophy Soccer ..... In Stock!
- Xenon II ..... HOT!
- Zak McKracken $36
- Zany Golf $19
- Zero Gravity $21
- Zoom $20
- Zork 0 (w/Graphics) ..... In Stock!

BUSINESS

- Advantage ..... Call
- Analyze! 2.0 ..... $74
- Budgeteer $34
- Critic's Choice $178
- Desktop Budget $48
- Easy Ledger ..... In Stock!
- Impact $54
- Investor's Advantage $79
- Jet Set $35
- Jet Set Font Sets ..... Call
- MaxiPlan 500 ..... $49
- Money Mentor $39
- Nimbus 1.3 (New Version) ..... Call
- PHASAR 3.0 ..... $61
- Project Master $130
- Publisher's Choice $139
- Securities Analyst $56
- Take Stock $34
- The Accountant $189
- The Works! Platinum $199
- WordPerfect Library ..... Call

DATABASE

- DataRetrieve $59
- DataRetrieve Professional $149
- Maildex $35
- Micro Base $25
- Microfiche Filer Plus $115
- Nag Plus $54
- Organize! $63
- Superbase Personal II $99
- Superbase Professional 3 ..... $229
- Who What Where When ..... In Stock!

WORD PROCESSING

- City Desk 2.0 ..... In Stock!
- CygnusEd ..... Call
- Excellence! (Req. 1MB) $159
- Flow $69
- Gold Spell 2 ..... $34
- Kind Words 2.0 ..... Call
- Micro Text $25
- Page Setter $39
- PageStream $129
- PageStream Fonts ..... In Stock!
- PageStream Forms ..... Call
- Pen Pal $99
- Pro Templates $38
- Professional Page 1.3 ..... Call
- ProFonts (each) $26
- Promise $39
- ProScript $33
- TriaText $139
- ProWrite 2.5 ..... $75
- Reason ..... Call
- Scribble! Platinum $99
- Transcript ..... Call
- WordPerfect (Updated!) $179

CAD

- A Cad $146
- Draw 2000 ..... Call
- Home Builder's Cad $139
- Home Bldr's Choice ..... In Stock!
- IntroCAD $63
- Professional Draw ..... In Stock!
- Structured Clip Art $38
- X Cad Designer II $115
- X Cad Designer II Prof ..... In Stock!

MUSIC

- AMAS ..... In Stock!
- Amiga Sings $12
- Audio Master 2.0 ..... $63
- Bars & Pipes ..... Call
- Deluxe Music $63
- Dr. T. Patch Editors ..... Call
- Drum Studio $35
- Dynamic Drums $59
- Dynamic Studio $144
- Fat Sounds $46
- KCS $177
- KCS Level II ..... In Stock!
- M $149
- Master Tracks Pro $259
- MIDI Recording Studio ..... In Stock!
- MidiMagic $98
- Music Mouse $49
- Music X $165
- Pattern Splatter ..... In Stock!
- Pro Sound Designer ..... In Stock!
- Sonix $49
- Sound Lab Amiga $239
- Sound Oasis ..... In Stock!
- Sound Trax 1 or 2 ..... Call
- Soundquest Patch Editors ..... Call
- SoundScape $130
- SoundScape Complete $259
- Studio Magic $75
- Synthia $75
- Synthia Professional ..... Call
- Texture ..... In Stock!
- The Copyist Pro $149
- Utilities 2 ..... In Stock!
- Utilities I $40

GRAPHICS

- 3 Demon $72
- Animator/Images $67
- Award Maker Plus ..... In Stock!
- Award Maker Sports Disk $20
- B Paint $27
- Board Master $74
- Butcher 2.0 ..... $25
- Calligrapher $69
- Chroma Paint $54
- Comic Setter $74
- Comic Setter Data Disks ..... Call
- Data Disks For PageFlipper ..... Call
- Deluxe Paint II $84
- Deluxe Paint III $99
- Deluxe PhotoLab $104
- Deluxe Print II $61
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working with large pages in high resolution.

In addition to oversize pages, Spritz can also use oversize (overscan) screens, a welcome feature for users with high-resolution monitors. Two utilities implement overscan mode, OverscanOn and OverscanOff. With OverscanOn, the Amiga rewrites the overscanned portion of the Workbench, so caution is required, particularly for hard disk users. If memory runs out you won't be able to use the OverscanOff feature to restore the Workbench.

Basic Features

Spritz accesses an unlimited number of fonts from disk or from your system Fonts: directory. With high-quality fonts at 300 dpi you can obtain a very attractive printout. Spritz will print either the entire image or a boxed portion of it. ColorFont compatible, the program lets you load the special ColorFont palettes through the Palette Tool. (See Digi-Paint 3 review in this issue.) This tool also lets you create smooth tonal ranges between defined extremes, useful not only for shading or smooth-tone airbrush painting but also for setting up gray scale palettes for publishing operations.

Spritz provides most of the basic drawing features, accessed either with the mouse or through keyboard commands, though it lacks the ability to vary the drawing line. The brush tool's paste mode sets exactly one copy of the current brush on the image for each click of the mouse button. You can quickly assemble images requiring repeated symbols such as circuit diagrams, floor plans, or organizational charts.

Two box modes add to Spritz's graphic capabilities. Complement can be used to highlight areas by "flipping" the pixel colors in the boxed region. The reverse video effect produced in this manner could be particularly useful in the production or conversion of clip-art for desktop publishing applications. Power Borders uses patterns defined in cuts to quickly produce frames around regions of the display. The manual explains this nicely-implemented feature well. Because the most attractive borders require a uniform cut size, a ruler or grid option in the Cut Tool would be welcome.

Because Spritz allows the loading of entire drawers of cuts at one time, you can easily create libraries of related cuts or drawers of cuts selected for specific projects. This feature would be enhanced if the program included a utility which would allow directory manipulation from within Spritz.

Using a feature called Smart-Link, Spritz can communicate with other programs or with multiple versions of itself

Special Utilities

Spritz communicates with its subprograms and with Express Paint only through Smart-Link, which is activated by the press of a mouse button through a utility labeled Port Manager. Because of the limited compatibility of Smart-Link, an ARexx port would be useful.

For desktop publishing purposes, two of the most interesting subprograms are Pixelize and Match. Pixelize lets you create blocky pixel effects from digitized pictures, simplifying the conversion of images to line art for black & white printing applications. While documentation on this feature is sketchy in the extreme, readers might find the article "Digi-Tricks" in the AMIGA *Plus* #3 helpful. Match can harmonize the palettes of two images so they are easily combined, or remap an image to a custom palette such as gray-scale.

Recommendations

Although Spritz itself is a small program, its more powerful features are memory-intensive. For this reason, the lack of a memory-warning feature and the need to reboot if chip memory is exhausted are serious shortcomings. While users can partially compensate for this lack through the use of a public domain memory monitor such as Disk Storage Deluxe by Khalid Aldosari, the problem needs to be corrected.

More annoying than serious is the awkwardness and lack of organization of the manual. While most of the powerful features are described in detail, others are not. The absence of an overview and focus makes use of the program difficult and could cause a user to completely overlook some of its most powerful aspects.

Spritz utilizes the ARP (AmigaDOS Replacement Project) file requester system, and provides the necessary ARP.library file on disk. This file must be installed in the Libs: directory of the System disk for the program to work properly. The manual does not mention this fact until Page 22 of the User section, nor does Spritz provide a script file for the installation of ARP.library.

Even with its limitations, I highly recommend this program. A bargain at its list price of $79.95, Spritz offers a number of features not available elsewhere at any price. In addition, my experience as an Express Paint user has been a happy one, with excellent support and regular updates provided. ■

Nancy Devitt of Edmonton, Alberta is a university education consultant. She has compiled a popular Canadian series of public domain disks. She shares her home with two Amigas and six cats.

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CALIGARI Consumer

Broadcast-quality 3-D software goes hobbyist

REVIEW BY RICK RODRIGUEZ

++ 1/2

A revolutionary interface makes Caligari Consumer an excellent introduction to 3-D graphics, but users will outgrow its many limitations and quirks after only a few sessions.

Few programs for the Commodore Amiga have as long a history as Caligari by Octree Software. Shortly after the Amiga's introduction, a preliminary version of the software produced a stunning 3-D animation which was featured at the 1986 SigGraph conference. The Caligari demonstration provided some of the first evidence of the Amiga computer's capabilities in this area.

In fact, many credit Caligari creator Roman Ormandy for unleashing the wave of 3-D rendering and animation packages which continues unabated to this date. Ironically, Caligari was among the last to arrive on dealers' shelves. After years of delays, Octree began selling a pre-release version of Caligari Professional for $1,995 last summer. The recently-released **Caligari Consumer** retails for $249 — virtually an identical product, but without the animation and VTR control software. A fully functional demo version of the professional software is widely available for only $10.

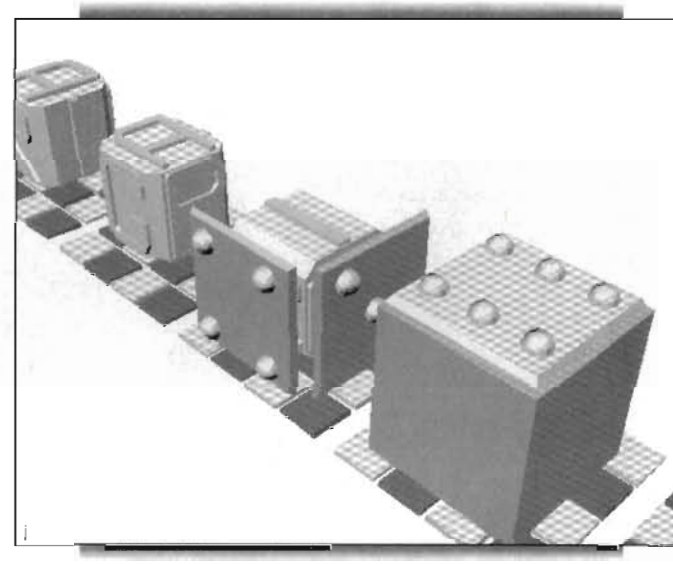
Attractively packaged, Caligari Consumer comes with a 100-page looseleaf manual and introductory VHS tape. Shipped on one unprotected, self-booting disk, the program includes two sample scenes with several pre-made objects and a set of fonts and numerals. A documentation drawer includes information about installing the software on a hard drive.

Caligari's work screen features six gadgets at the bottom of the high-resolution display. Caligari forsakes Intuition's pull-down menus in favor of a hierarchical control panel. A single click on any button reveals another set of controls for that particular function.

Like most 3-D software, Caligari is broken into three distinct modules — Object Design, Scene Design and Rendering.

Object Design

Caligari's Object Design offers the most elegant object editor available on the Amiga. Modeled after the interfaces found only on the highest-end graphics platforms, Caligari makes the task of creating three-dimensional objects simple, lightning-fast and, best of all, highly interactive.



The professional broadcast version of CALIGARI is known for its elegant, high-end user interface, which it shares with the new lower-priced version. Sleek geometric images are the program's forte.

The Caligari interface operates as a window onto a 3-D landscape. The controls at the base of the screen act much like the control panel in a flight simulator, allowing you to manipulate not only your vantage point, but the objects on your landscape as well. A tiled surface plane helps you keep your bearings as you fly around, zoom in and out, or pan and tilt to

your heart's content.

Object manipulations are displayed in real time. If your object is too complex, a simplified boundary box appears and speeds up screen refresh. Once your move is done, the program instantly redraws the object.

Besides the default perspective view, Caligari offers the traditional orthogonal (front, side, top) tri-view for precise placement of your objects, which can be translated, rotated or scaled on any local or global axis. Performing any of these operations can be as simple as clicking on a gadget and holding the left or right mouse button while dragging the cursor in the workspace. Anyone who has ever played an Amiga game will immediately get the hang of it, while the Undo command makes it possible to quickly recover from any serious mistakes.

Although Caligari tries to make it superfluous, a status window is available, displaying numerical information about your object and the viewpoint's precise placement. Selecting the Etcetera gadget calls up a control panel which allows you to type numerical inputs for all of the various settings and also includes handy utilities like quick leveling, object find, object center and grid controls.

Caligari lets users create objects using a large set of primitive objects — sphere, cube, cone, hemisphere, etc. Once on the work surface, the primitives may be manipulated extensively and combined to create intricate objects.

To create an object by hand, select the Tools gadget and choose Extruder. Much like a CAD program, the Extruder allows you to draw a freehand polygon on its grid surface. Once you're happy with the shape of your polygon, select Close Poly. If your object will have a hole in its center, you may continue to create another polygon within the first, or you can select from the Extrude, Lathe and Flat options which appear along the menu.

Extrude will give your polygon the amount of depth which you specify. You can also preset the amount of shearing of the extrusion along the x or y axes and set a "cone scale." This unique function creates an extrusion which converges toward one point, as in a cone. The Lathe will spin your polygon around one of its edges or any axis you create. The angle of rotation may also be selected for objects to be swept less than a full 360 degrees. Flat allows you to place your polygon on the work surface without any modifications.

Once you're happy with your object, you can save it for later loading in the scene design module. Caligari's requesters will require some study. Be careful not to save anything with an already existing name! The program does not issue a warning that it cannot do this and simply bombs out. Another peculiarity is that the Caligari file requester is case sensitive, which means that ROBOT and Robot would be considered two different objects.

The object design module has a render button which will only allow you to see the currently selected object. Once the object is rendered, you may assign it color attributes in the color menu.

Scene Design

Once you have created or loaded all the objects that will be in your work, you exit the Object Design module and enter Scene Design.

Strikingly, this module is virtually identical to the object designer. The major difference is that objects cannot be modified in the scene module.

The two tools available for scene composition are lights and copy. Copy allows you to create clones of your objects which can be individually moved. Due to the nature of Caligari, copies of objects are rendered much more quickly than new objects with slight modifications. Also, the program stores the copied object's geometry only once within the scene, reducing the amount of disk space each scene requires.

The Light tool lets you add an unlimited number of light sources to the scene. Definitely not Caligari's most interactive tool, setting lights requires entering x, y and z coordinates for the light source, as well as information determining intensity and softness.

Scenes are rendered by selecting the Render button in the Scene Design module. For the first computation of a scene, Caligari may take several minutes to draw a screen. Subsequent renderings go much faster, even if the viewpoint has changed. The program's rendered images are done in 16 colors, 640 x 400.

Color Control

Caligari's weakest attribute, color control definitely requires practice to achieve tolerable results. The Renderer uses a limited number of color ranges to achieve its faceted shading. You assign an object's color in the object design module. The hue, specularity and intensity of the object can be set in scene design. With the object selected, clicking on any of the color ranges will make that the object's current color. Using the right mouse button, you can add or delete colors from the range, which affects the other colors in the palette. Using the hue, saturation and value sliders, you can affect the *brightest* color in the range, but all the ranges start with black.

In addition, sliders are available for specularity (highlighting) and diffusion settings. The sliders are misleading because the program only recognizes the values as being on or off. When you think you've got the settings you want, select Set Material and the object will take on the new attributes the next time the scene is rendered. Exit the color menu and select Setup to re-render the scene or choose a low resolution, 32-color screen for rendering.

All rendered scenes can be saved as IFF pictures for touch-up in your favorite paint program. Despite its overscan Object and Scene Design screens, Caligari Consumer only cre-

ates non-overscan files.

Summary

I want very much to like Caligari, because it sets so many standards for ease of use and the professionalism of its interface. But after working with it for several weeks, I can't recommend the program for anyone but the novice who wants to explore the basics of 3-D object creation. Of course, Octree does not represent Caligari Consumer as a professional level product, but many of my complaints about the package are evident in the higher priced version as well.

Even the object editor, the strongest feature of the program, has its limitations. The most significant of these is the inability to edit the points which make up an object. Once a point has been placed, it cannot be moved, even in the Extruder tool. This makes the creation of precise logos or smoothly curved surfaces virtually impossible.

The program is best suited to the creation of highly stylized, erector-set objects. Not being able to animate these objects is another major drawback. Even the professional version relies upon single frame recording for replaying animation. Perhaps users who need to create 3-D views of very geometric objects for business presentations might find Caligari Consumer useful, but if you want those bars to move, you'll have to achieve the move with another program.

The crude renderer makes Caligari's output virtually useless. Besides its 16-color, faceted output, the program has serious problems with sorting intersecting polygons, resulting in back objects obscuring all or part of a front object. Smooth shading in HAM is not available in either the consumer or pro versions. With so many 3-D rendering packages available for the Amiga, why bother?

Syndesis has announced that it will be releasing an Interchange module for Caligari which will allow its objects to be exported into other animation products like Sculpt-Animate and Turbo Silver. Only with the availability of this product would I recommend Caligari as a dedicated front end. But be prepared to spend quite a bit of time fine-tuning your object in the destination program. ■

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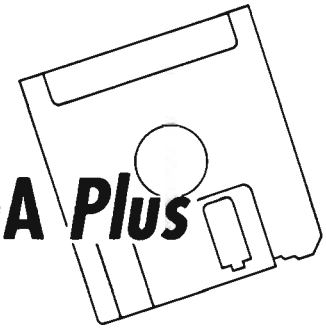

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Easyl Drawing Pad

A Painter's Evaluation

REVIEW BY LEWIS TILLEY

+++

The Easyl is a natural for artists who don't like drawing with the mouse. This pad makes it easy to digitize paper drawings and can be useful for cel animation. Slightly slow onscreen line display could be distracting for some users.

The **Easyl** drawing pad has been around long enough for serious Amiga artists to evaluate it in depth. Overall, I found the Easyl to be a well-developed professional tool suitable for artists who find the mouse a less than ideal way to draw. The Easyl makes it easy to convert a drawing originated on paper into digitized form for enhancement with popular painting software. It can also be very useful as an aid to traditional animation.

I had first entered the world of computer graphics with the Commodore 64 and a KoalaPad. I learned to think of the screen as the place where the drawing was made, not the surface of the KoalaPad. So I was a little disturbed to find that the Easyl seemed to contradict this principle.

With all the programs I tested, I couldn't watch the screen while drawing on the Easyl pad. For me, the Easyl's slight delay in displaying line positions onscreen disturbs the continuity of the drawing process. Attention must be focused on the pad, so the drawing actually takes place on the paper, not on the screen. Yet for some artists this could be a great advantage because the pad does make using the Amiga more similar to traditional drawing techniques. I found myself working in a style more similar to my technique in watercolors, as you can see in the sample illustration Angel Wing Begonia.

Angel Wing Begonia demonstrates watercolor-like technique on the Easyl.

Easyl Set-Up

The Easyl comes in a well-padded professional shipping package. Clear instructions made it easy to install the interface card inside my A2000. (Easyls are also made for the 500 and the 1000.) Installation was a simple matter of pressing the circuit board into an empty Amiga slot. Accompanying the well-written manual, the separate card with Quickstart instructions had me using the pad immediately.

The Easyl software offers so many choices that it may become confusing. Drivers let you operate the pad under the U.S. NTSC video standard or the British PAL. With both you have a choice of automatic "pen down" or manual buttons corresponding to the functions of a mouse. You may set up either choice for drawing with the right or left hand.

A stylus is no longer part of the Easyl package because teflon tips were found to wear down too quickly. The manual recommends using paper and a pencil or ballpoint pen.

To keep that paper firmly anchored on the pad, a clever set of self-adhering rubber pegs are included.

The generous 8 1/2 x 13 inch drawing surface provides a resolution of 1,024 by 1,024. The pad samples coordinates at an effective rate of 250 pairs every second. This feedback tells the computer the position of your cursor. It works rapidly enough when using the single-pixel pen brush point in high resolution and the drawing software especially designed for the Easyl by its developers. Unfortunately, the manual states that "to create a driver which works with popular graphics packages, this coordinate capture rate is somewhat crippled to simulate the mouse coordinate capture rate."

If you plan to use the Easyl with software such as Deluxe Paint III or Photon Paint II, be prepared to accept this slowdown. Response also slows when using Easyl's wide brushes. After making a drawing on the pad you can often sit back and watch the line animate itself as it catches up with the captured coordinates.

Preliminary Drawings

The pad makes an excellent tool for transfer of preliminary drawings from paper to the electronic storage of IFF files. The drawing goes on the registration pegs, covered with a piece of tracing paper. Trace your drawing, the resulting transfer can then be saved and developed into a more elaborate image through the use of a paint program.

Rather than the usual "magnification" tool found in paint programs, the Easyl software uses drivers (in the Prodriver tool box) to provide a much more effective way for working on the detail of an area. By selecting the drivers, the artist specifies the size of window in which a drawing appears onscreen. Incredibly detailed drawings that take up the entire surface of the pad may appear in a tiny window.

More Than Drawing

The use of registration pegs, so essential if the features of the Easyl are to be used at their fullest, makes completion of "in-betweens" for traditional cel animations easy. Just put the "extremes" on the pegs and draw the subsequent frames on overlays. Easyl works in both high and low resolutions, so you can prepare black and white line cels for most animation programs. Save each cel as an IFF file and you can easily import it into a paint-animation program to be filled with color. ■

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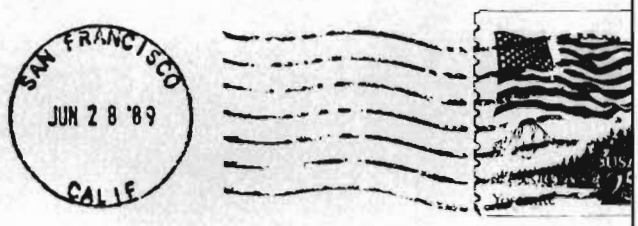

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Digi-Paint 3

HAM painting with new features galore

REVIEW BY HARV LASER

+++

Some unique new features have been added to this pioneering HAM paint program, which can dish up glorious painterly images and effects. Still, certain other features could be better or are lacking.

NewTek's Digi-Paint was the first HAM paint program for the Amiga. In HAM mode, all 4,096 possible colors of the Amiga's palette can be displayed at once, making possible extremely realistic imagery and wonderful effects that are just not possible with only 32 colors in the "normal" Amiga modes. With these capabilities also come some drawbacks, because when colors are applied to a HAM screen you often see an unwanted effect known as "fringing" where areas of one color meet another. Working in HAM mode often seems to make pictures that are less precise than in non-HAM modes. Some Amiga artists get downright religious about which modes they prefer and some won't use HAM at all.

Digi-Paint, good as it was for its time, lacked some basic features and forced hindrances on users. The program had no facility for text entry at all. You couldn't switch from one screen mode to another without quitting and reloading the program. Many owners were upset at the use of "look-up" copy-protection.

Digi-Paint 3 overcomes these restrictions and incorporates enough new features to almost qualify it as an entirely new program. But if you spent much time with the original Digi-Paint, then Digi-Paint 3 will definitely have a familiar feel to it. Both programs sprang from the fertile mind of the same developer, Jamie Purdon.

NewTek's DIGI-PAINT 3 makes it easy to create the richly textured surfaces of Amiga HAM pictures. Virtually all the quibbles about earlier editions of this software are now fixed.

Digi-Paint 3 is not copy-protected. No more plowing through the manual every time you run the program. Any Amiga with 512K can run it, although more RAM is certainly beneficial. Digi-Paint 3's spiral-bound documentation is 130 pages of useful information, beginners' tutorials and references, copiously illustrated. All it really lacks is an index.

A second disk contains a program called Transfer 24, which is basically a subset of NewTek's Digi-View digitizing software. If you are not familiar with Digi-View, suffice it to say that it's an image processing program with which you can manipulate pictures of any color mode and resolution in many different ways. It's particularly useful for transforming digitized images from one mode to another, changing their color balance, brightness, saturation, palettes, red/blue/green ratios, and so on.

Toolbox Tour

Once up and running, Digi-Paint 3 presents you with a jet-black painting area and a bar of gadgets and buttons across the bottom quarter of your

screen. NewTek calls this bar the Toolbox. This is the control panel designed by Jim Sachs, one of the most prolific and talented computer artists around. (*See Sachs' anti-aliasing lesson in AMIGA* Plus *#5.* — + EDITORS)

Across its top, the initial Toolbox holds 14 gadgets to select your paint brush size and shape, and another seven for the drawing tools — freehand, dotted or continuous, polygon, circle, rectangle, filled or unfilled. Below are more buttons where you may opt to make the Toolbox vanish, go to other Toolboxes, play with the palette, switch to magnify mode, use "scissors" to clip out a brush, and a little window which displays your current painting mode.

Clicking on "controls" brings up a much larger Toolbox which replaces the first one. More gadgets allow you to play with dithering, tiling, "warping" a brush to a selected shape. This panel holds an amazing array of 11 gadgets and two sliders to control all aspects of transparency, specular highlighting (hotspots) and texture mapping. A Text button takes you to the new font facilities.

Common to all the Toolboxes (although not always located in the same place) are the Undo and Repeat buttons. Repeat is unique to Digi-Paint. Whatever you just did, repeat makes it happen again. This is terrific for applying subtle color layers or peeling them away.

Atop each Toolbox is the color strip. This is an improved version of the palette tool of the old Digi-Paint. HAM mode uses a base palette of 16 colors and you use the color strip to choose one of those 16 colors to paint with no HAM fringing. When you hold down your left mouse button on the Current Color gadget, up pops the full 4,096-color palette where you can modify your 16 base colors or pick *any* color as the current one. A separate little Artist's Palette gadget displays that same full HAM palette area but leaves it onscreen for you to fiddle with. By setting a begin and end color, the Range gadget gives color-spread painting or instant rainbows.

Digi-Paint 3's Toolboxes eat up a lot of screen real estate, but a close gadget on each one will remove it, leaving your entire screen free to paint on. And if you leave a Toolbox visible and move your mouse pointer towards it while painting, when you reach its edge that Toolbox will vanish out of your way. A right mouse-button click will make it visible again. But you can't slide the Toolbox up and down on the screen as you could with the old Digi-Paint.

Menu Tour

Behind the Toolboxes is a bevy of pull-down menus. You access these menus by holding down your right mouse button and wiping your pointer across the top of the menu bar. Here's where you'll find the usual controls for loading and saving pictures and brushes. The file requester is unusual and reminiscent of the old

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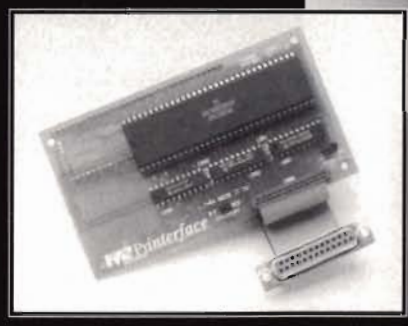

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Digi-Paint. There are gadgets only for DF0:, DF1:, DH0:, the root (:) and the parent (/) directories. All other directories and devices scroll into a window below the gadgets as volume names and drawers (subdirectories). Different shades of text alert you to which is which.

Digi-Paint 3 can load any resolution mode or picture size without forcing you to quit and re-run the program, another major improvement. During picture loading you'll be told if what you're trying to load is a different mode than the existing screen you've been working with. You'll see options to keep using that mode or switch to the incoming picture's mode and/or palette, but as before, Digi- Paint 3 saves *only* HAM mode pictures.

While working on a picture, the size requester lets you change the working size of the screen all the way up to 1024 x 1024 pixels (a Super Bitmap depending on the amount of RAM in your Amiga), turn interlace on or off, or restore the work area back to the default 320 x 200 sized screen. When painting on an oversized screen your picture won't shrink to fit. Instead you simply push your mouse pointer to any screen border to scroll the picture around inside a "virtual" window. This is slick and fast and it works well.

The printing function works just fine and you can cleanly abort a printout before it finishes! This is something every program that can dump graphics to a printer should be able to do.

More menu selections let you have two pictures loaded at once and swap between them or rub-thru areas of the top picture to reveal parts of the one below it. The brush menu is where you load and save brushes, which can be either rectangular or freehand lassoed shapes.

An important item here, and one that you'll be using a lot, is the Brush Swap selection. In order to take advantage of any of Digi- Paint 3's new brush manipulating features it's necessary to load a brush or clip one from the current picture and then swap/copy it. By doing this, previously unusable gadgets in the Control Toolbox become lit and activated. Now you can "warp" a brush onto a fixed or arbitrary shape, stretch, shrink or re-size it, tile or dither it, or play with it in dozens of other ways. This is powerful stuff although it takes a while to learn.

The effects menu offers choices for flipping and rotating the current custom brush but only in 90-degree increments. The "soften" mode, which acted on the whole picture in the old Digi-Paint, is missing. I miss it! Another menu gives you 11 drawing Modes — Normal, color Range (to paint with a rainbow-like spread of colors defined in the color bar's Range area), Lighten, Darken, Colorize (play Ted Turner), Rub-thru, Blur, Texture Map (after swap/copying a brush), and apply the pre-calculated binary operations of

And, Or, and Xor.

Finally, the prefs menu is where you can close the Workbench screen to conserve memory, turn on pointer coordinates, or initiate a genlock mode where color 0 is ignored and replaced with whatever imagery is being brought into your Amiga through a genlock, if you own one.

For you speed-demons, most functions on Digi-Paint 3 menus and in its Toolboxes have keyboard equivalents.

Imperfections In Digi-Land

A host of new features definitely make Digi-Paint 3 more powerful than the original Digi-Paint. However I found drawbacks to the program which I'd consider serious.

Text entry is not what it should be. A major omission is that Digi-Paint 3 has absolutely no facility to use ColorText fonts. ColorText is a known standard and should be supported by all Amiga software that works in color and can load fonts.

The Digi-Paint 3 disk includes a few nice new fonts but Digi-Paint 3's text entry mode is strange. Rather than typing directly onto the screen with a text cursor, you enter your text into a little window. Clicking an icon creates a brush containing the words you just typed, and attaches it to your mouse pointer so you can slap it onto your picture. Ooops, did you misspell a word? You have to Undo your brush, correct your text, and make a new brush. You can't backspace on the screen.

Depending on what size font you're using, and how wide you've set the painting screen, Digi-Paint 3 makes a decision on how much of the text you entered will fit horizontally on the screen as a brush. There's no easy way for you to predict the results, since you're not typing on your painting. If your text won't all fit onto one screen-wide brush, you'll have to try again with a smaller font or less text or a wider screen. A "smoothing" gadget is supposed to automatically anti-alias text. Unfortunately this results in a horizontal squeezing of the text.

Digi-Paint 3's magnify mode is still only one level of magnification and it appears on a separate sliding screen. Photon Paint 2.0's variable zoom magnify window which can be sized, scrolled, stretched and put anywhere on your picture is a more elegant solution.

Unlike its competition, Digi-Paint 3 has NO facility for grids or snap-to-grid, a feature critical to precise placement of brushes and text on the screen. You can turn on a coordinates window, but lining things up with precision, especially multiple lines of text, will require a lot of hand-eye coordination, and liberal use of the Undo button.

While brush manipulations in Digi-Paint 3 are vastly improved and quite powerful, some operations that were easy in the original Digi- Paint have actually become more difficult in the new version. Halving a brush's size is a good example. Instead of the simple brush/resize/half menu selection you must now go through an entire dance of swapping, copying, and redrawing to achieve the same effect.

Digi-Paint 3 has no perspective feature per se, at least not like its competition. To create a texture-mapped floor with a vanishing point you would load in a digitized picture of wood or tile, then clip out a brush, swap/copy it, turn on texture map mode, draw a trapezoid the size and shape of where you want the floor and then map the brush to it.

Another thing missing here is animation capability. There is no provision in Digi-Paint 3 for loading in an .ANIM file and painting on separate frames, nor can swap screens be chained and saved out as an .ANIM file. Both Photon Paint 2.0 and Deluxe Paint III have these capabilities, for HAM and non-HAM animations respectively.

Summary

In all fairness, there ARE some features here found nowhere else. Digi-Paint 3 is the only paint program I've seen that can toggle on Haitex X-Specs glasses and let you paint in stereo 3-D. You can also load in existing stereo pictures and work on them, although the manual glosses over the 3-D features in less than half a page which left me yearning for more examples and strategies in how best to use this special capability.

Digi-Paint 3 has scripting facilities and can be controlled externally if you own the ARexx language by Bill Hawes. Digi-Paint 3 can only act as an ARexx server, meaning you could control the program with other programs but Digi-Paint 3 itself does not have any macro facility of its own. Examples are provided on the distribution disk and the manual has a good appendix which details using Digi-Paint 3 with ARexx.

Digi-Paint 3 is certainly modern and sophisticated. It's obvious that a lot of thought and hard work went into creating this product. It provides the Amiga artist with a multitude of interesting tools which, when mixed with your own talent, can dish up glorious painterly images and effects. It's unquestionably a major leap forward from the original Digi-Paint. However its curious text handling, lack of ColorFont support, no grids, pretty but cumbersome interface, and no animation facilities are not attributes I expected from what is billed as "The Ultimate Paint Program."

No single Amiga paint program can do everything and each has features the others lack, so serious artists will probably want to add Digi-Paint 3 to their arsenal. Those who don't yet own a HAM paint program are well-advised to shop and compare which software has a set of features that best meets their individual needs. ■

Harv Laser wrote the telecommunications software survey featured in this issue.

DIGI-PAINT 3 $99.95
NewTek, 115 West Crane Street, Topeka, KS 66603. (800) 843-8934. Minimum 512K, additional RAM recommended, not copy-protected.
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PAGErender 3D

Create 3-D models without being an engineer

REVIEW BY RICK GIBSON

+++ 1/2

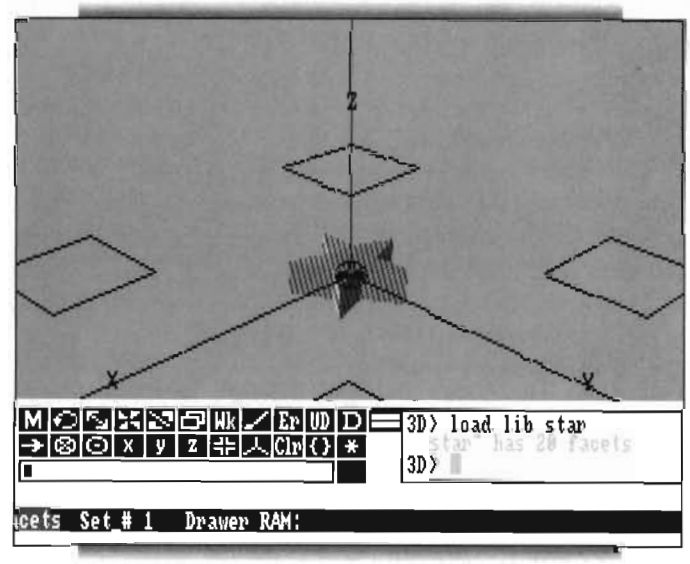
PAGErender 3D has appeal for users who require quick and easy 3-D modeling. With persistence, advanced users could develop some very impressive animations.

If you're beginning to think you need a degree in mechanical engineering to build three-dimensional models on your Amiga or if you just can't seem to get the hang of working in tri-view windows — Mindware International's **PAGErender 3D**, written by Michael Abrams, takes a new and refreshing approach to the art of generating 3-D computer images.

Unlike many other 3-D modeling and rendering packages, PAGErender 3D tries to make creating an object as easy as pulling, pushing and twisting polygons. Objects can be automatically formed into many different structures such as arches, cones, cylinders, domes, funnels and waves. A simple click of the mouse lets you select colors and manipulate objects.

PAGErender 3D boasts an impressive list of powerful features. With the exception of halfbrite, version 1.0 of PAGErender 3D works with all screen modes including HAM, overscan, and super-bitmap displays. Four different drawing modes operate in each resolution — solid fill, outlined, color wire and wire frame. In addition to the standard forms of display, there are two different types of stereo images — standard red/blue separation and Haitex X-Specs. PAGErender 3D supports ANIM file format, the 68020 microprocessor, and ARexx.

The PAGErender 3D program disk includes a library of pre-designed objects. On the extras disk you will find a 68020 version of the program, plus an animation and several sample scripts. PAGErender 3D loads easily from the Workbench or CLI, and transferring the program to a hard drive is as simple as dragging the icon with the mouse.



This workscreen of Mindscape's PAGErender 3D shows how the program creates 3-D objects by letting you push and pull at the shapes. ARexx and TASS support is also featured..

No Tri-View Here

The program's main working environment consists of a foreground screen with a top border of 28 gadgets on the left and a small command line window on the right. The foreground screen can be moved to reveal yet another information window. Right away you will notice that the familiar tri-view windows are not employed here. The work area defaults to a 3-D perspective, with diagonal x- and y-axes rising from the lower corners of the screen to intersect with the vertical z-axis at the center of the screen.

Drop-down menus at the top of the work screen contain the usual Load, Save and Delete file commands. You can also create an ANIM file or run ShowANIM directly from the menu. The Setup menu defines the work area parameters such as screen

resolutions, drawing modes and light settings. There are many options to choose from and you can conveniently save different settings under separate names.

One option is a command called Ray Trace. Yes, this program does ray tracing, but only in its most primitive form. Don't expect the sort of photo-realism you'd get with Sculpt-Animate 4D or Turbo Silver. PAGErender 3D opts for speed, rendering objects quickly but providing only one light source. There's relatively rough smoothing and no surface mapping. The manual suggests that future releases will provide additional ray tracing features.

The Library contains 81 different shapes, including a complete alphabet and the numbers 0 through 9. There are no jet fighters or sports cars, just basic geometric figures.

Stretch, Twist and Rotate

You can manipulate objects in a variety of ways. You can stretch, twist, rotate, move or size them by simply clicking and dragging the slide bar. A wire-frame guide appears, moving as you move the slider bar. When you release the mouse button, your object will be redrawn in the new position.

To change an object's color you simply select from the palette and then click on the object. In order to re-color a facet (a single side of an object) that is not directly in view, you must rotate the object and then click the facets you want to change. The dynamic palette lets you change colors by positioning the RGB sliders. However, without the color boxes usually found with other programs, reproducing a specific color is largely a matter of trial and error. You must write down the color codes in advance in order to recreate a specific color.

To design your own objects, you first select the flat or cylindrical option. Flat objects are just that. You click around the screen until you enclose a polygon and then extrude the new shape. Selecting a cylindrical form brings up a standard lathe with which you define the object's profile.

The object editor lets you subdivide objects or relocate points. Unfortunately, it does not clearly identify a point activated for change. The cursor becomes a circle and all points within the circle are affected, but since the points are not specifically highlighted, you are never really sure which points you have moved until you click the mouse button. Moreover, the system does not show both the old and new point positions as you move a point, making it difficult to test perspective. Once you make a change, it's done. If the results are not to your liking, you just have to try again — or resort to the Undo command. While you are in the Object Editor, you cannot move the object nor the observer's view point.

IFF Loading

One feature I really liked is the ability to load an IFF picture into the work area background. You can then outline fonts or logos and extrude them as 3D shapes. I would like to see a "snap to grid" feature added, which would offer a more precise alignment of points.

Previously I mentioned that the foreground screen contained a CLI window. For every mouse command, the program types out a script-language equivalent in the CLI window. In addition, the program keeps track of your moves and can record them in a text file. The CLI display of commands is designed to help teach the script language that powers the program. You don't have to understand the language to use this program, but a good knowledge of it will prove most beneficial if you want to take full advantage of the program's animation capabilities.

Throughout the simple modeling process, execution was fast and easy. Using only the mouse, I had fun constructing objects of unusual shapes and patterns. When it came to animating these figures I found that I had to buckle down and learn another programming language. The alternative is to use the mouse to define the object's path by pushing and inching your way around the screen, and recording the motions as a script. Editing the motion then requires the use of a text editor. This method is a bit time-consuming, but provides an interim solution until you're comfortable with the script language.

PAGErender 3D comes with an easy-to-follow manual. Its 205 spiral bound pages provide enough information to get you through the program. As you go through each chapter, detailed illustrations demonstrate the program's commands. In the back of the manual are copies of the example scripts found on the extras disk. These scripts can serve as tutorials in animation assembly.

PAGErender succeeds quite well at making 3-D modeling both fast and as easy as using a paint program. It was never intended to be a CAD program and therefore should not be compared other "design intensive" programs. However, even with the enhancements of HAM, PAGErender's three-dimensional effects are limited by its simplistic ray tracing with a single light source and lack of shadowing and surface texture support. The animation script language does provide a powerful means of generating animations. However, mastering this very challenging language will take a lot of work and patience. ■

Rick Gibson is a leading Amiga 3-D animator from Southern California. His "Jail Break" video won first prize in the 1988 Aegis Animation Contest.

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CIRCLE 001 ON READER SERVICE CARD

Amiga Telecommunications Software

ONL

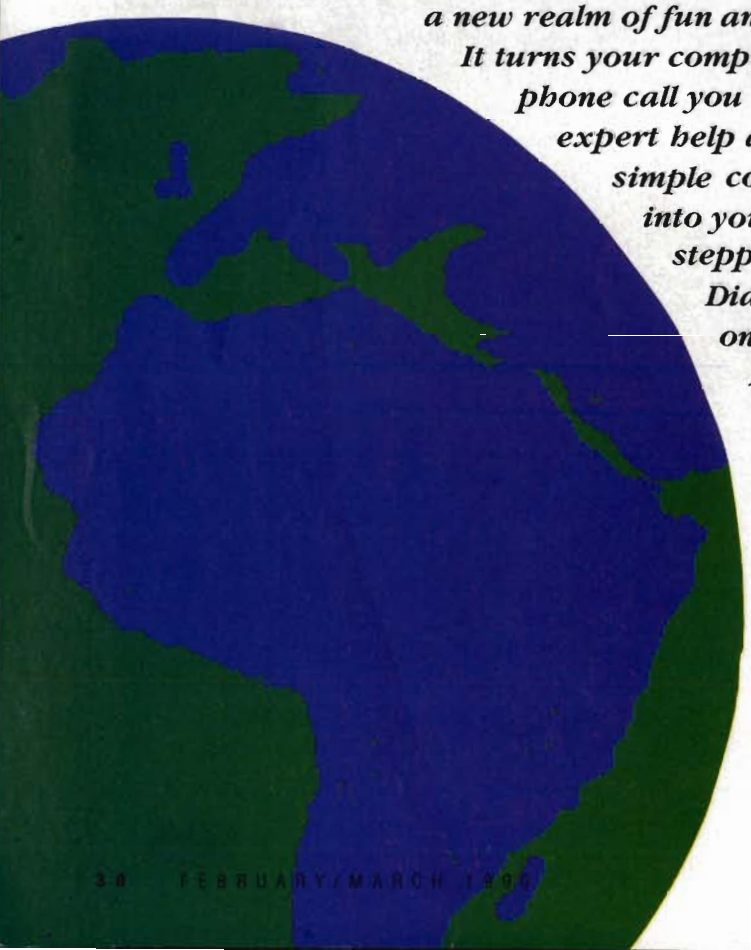
Connections to

AMIGA *Plus* Survey
By Harv Laser

Connecting a modem to your Amiga will change your life. Alone, the Amiga is a wondrous beast, capable of entertaining and enriching your daily existence. Adding a modem to your computer gives you a feeling of freedom similar to the one that surged through you when Dad tossed you the keys to the family car and let you go on your first solo adventures. The freedom changed you forever.

Like driving, a modem gives you the power and freedom to move through a new realm of fun and productivity that you've never experienced. It turns your computer into a window on the world — with just a phone call you have a galaxy of public domain software and expert help at your beck and call. By tapping out a few simple commands you can get new programs and files into your computer without ever licking a stamp or stepping foot into a store.

Dial one of the many networks and chat live online with others who share your interests. A modem can make you more productive. I wrote every word you're reading at home on my Amiga. I compressed this text along with the screenshots accompanying it and sent it by modem to the offices of AMIGA* Plus *without ever leaving the comfort of my cozy computer room.



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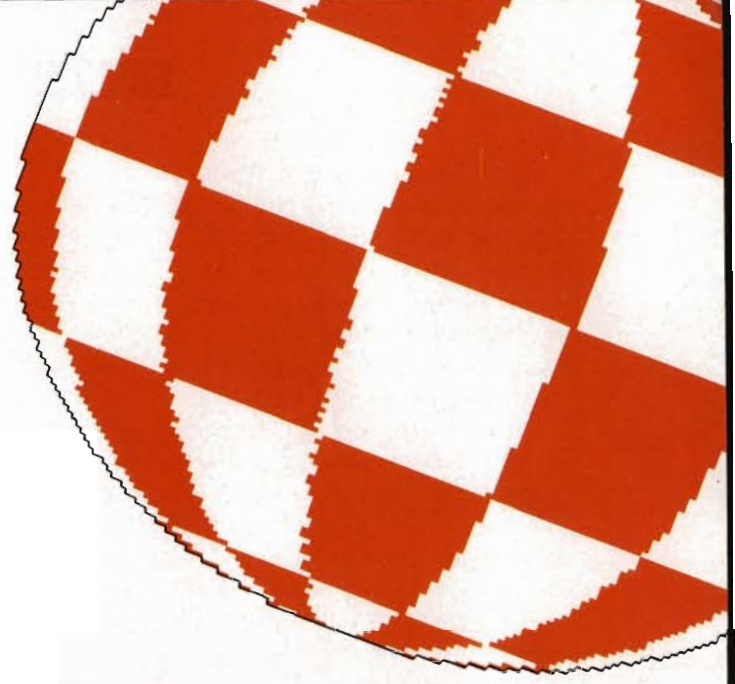


Once you agree that having a modem is a good thing you'll need to acquire software — a telecommunications or "terminal" program. With this software you control the bitstream that flows onto your Amiga screen from pay networks and bulletin board systems (BBS) hundreds or even thousands of miles away.

Amiga terminal packages are different from most other types of software. While there's certainly nothing in the public domain that could compete against a paint program such as Deluxe Paint III, or a desktop publishing package like Professional Page, the best freely-distributable Amiga terminal programs are right up there with the best commercial software for features, power and ease of use.

About the Survey

Here is the current crop of Amiga terminal programs, both commercial and freely distributable (public domain or shareware). The commercial titles can be purchased from your favorite software dealer. The public domain and shareware programs will be available to you through many different means: P/D disk collections, user groups, or by using whatever terminal program you might now have to download them from online sources.

(*PD/shareware terminal programs reviewed in this survey are conveniently available on DevWare's $5.95* AMIGA *Plus* Public Domain Library Telecommunications Disk WB4. *See the DevWare advertisement in this issue.* — + EDITORS)

I tried each program using an Avatex 2400 modem attached to my Amiga 1000 with 2.5 megabytes of memory and a hard drive. Many of the usual cautions regarding memory requirements apply here.

In a few cases I was given prerelease or beta test versions of software, and I clearly specify these products in the reviews that follow. Any beta bugs I mention will hopefully be squashed before such programs are released.

A-TALK III

At first glance, **A-Talk III** ($99, Oxxi) superficially resembles many public domain terminal programs. Its screen is clean of gadgets and buttons and its menus look rather generic. Only after digging a little deeper do you realize how much power lurks behind this humble veneer.

Setting up A-Talk III is rather straightforward, but reading the manual first is recommended. Menus offer a considerable number of configuration choices. The baud rate menu extends from 300 bps (bits per second) to 57600 bps. The screen can be configured in various ways — with or without borders, in a Workbench window, or on its own custom screen with varying numbers of colors, lines and columns.

A-Talk III has a unique menu for selecting features available in particular brands of modems. The latest version offers support for the powerful new US Robotics Courier HST (which I review separately in this issue).

When the menu item "phone book" is selected, a full screen window opens to display the first 30 entries of a maximum 60-number list. Phone numbers and their accompanying settings and short comments can be typed into the phone book window directly, but the method of entering this data is tedious. You'll find yourself jumping between mouse and keyboard, clicking a box, entering parameters, clicking the next box and so on.

A-Talk III does understand the format of phone book files developed by

Chet Solace and used in his "Final List" of Amiga bulletin boards available through numerous public domain sources. However, in order to use another phone book you're required to name it "at3.phone" and copy it to a specific directory, then quit and re-run A-Talk III to load it.

Once configured to your liking, A-Talk III's total environment is saved to a disk file which loads when you next run the program. Rather than using its menus you can pop open the "quick menu," a huge window holding 85 separate clickable gadgets which duplicate the choices on all of the pull-down menus.

A-Talk III has a script language for automated online navigation which includes a "script tutor." This learning mode lets you automate log-on procedures for any host system. The manual and disk also include pre-formatted and tested sample log-on scripts for CompuServe, Dialog, Dow Jones, MCI Mail, NewsNet, OAG, People/Link (via Telenet), BIX (via Tymnet) reading UNIX mail, and others.

Twenty programmable macro keys are on tap, as is an ARexx port which allows for extended macros and interprocess communication with other programs. For your file transfer chores, Xmodem, Ymodem, Ymodem-G and Batch, WXmodem, Zmodem, and Kermit protocols are all available. The manual goes into depth on the nuances of using these protocols to best advantage.

The "Talk" in A-Talk III refers to its speech capabilities. Sight-impaired users will find this feature invaluable as it uses the Amiga's voice capabilities to speak whatever is being sent in and out of the modem. The speaking parameters are completely adjustable.

Another A-Talk III forte is terminal emulation. It can be used on a novice level as a simple TTY (dumb terminal) emulator, but if you need to connect to specialized host machines you will find full support here for ANSI, VT100, VT52, H19, and TEK4014.

A-Talk III is also one of the first Amiga terminal programs that can be run multiple times, with each running copy communicating with a different serial device and connected to multiple hosts. This requires additional hardware (serial boards) which are or will be available from ASDG Inc., CMI, Supra Corporation and Commodore.

What's a Modem?? What's a Baud??

Basic questions answered for online newcomers

By Harv Laser

For your computer to exchange data with another computer via telephone lines, you need an electronic device called a modem. The word "modem" is a contraction of two other words — *mod*ulate and *dem*odulate. The modem's job is to convert (modulate) digital computer data into analog audio data so that it can be sent over a telephone line. The computer at the other end of the connection needs its own modem to convert (demodulate) those audio tones back into digital data it can understand.

Modem speed is expressed in terms of "baud" or "bits per second." Faster modems cost more. The cheapest modems run at 300 baud — which is really too slow for most Amiga users. Here's why:

You will probably want to use your modem to upload and download (transfer) files to or from Amiga bulletin boards, commercial online services and modem-owning friends. Amiga files tend to be *large*. A typical interlace HAM picture can be 100,000 bytes of data, even compressed with an archiving program such as ARC or ZOO. That one picture would take almost an hour to transmit by modem at 300 baud. Many bulletin boards won't even accept 300 baud callers anymore, although all national online services do.

Currently, 1200 baud modems are also quite inexpensive. But even 1200 baud is considered slow these days. That typical 100K HAM picture would take about 15 minutes to transfer at 1200 baud. Commodore makes the 1680/RS, a 300/1200 baud modem specifically for the Amiga. The 1680/RS has a speaker (so you can hear it dial and connect) and comes with a built-in cable. Just plug the cable into your Amiga's serial port, attach a phone jack to the modem and you're ready to go. However, unlike most other external modems the 1680/RS has no status lights. The 1680/RS is often sold at substantial discounts from its $149.95 list price — sometimes as little as one-third.

Today's common standard is the 2400 baud modem. Popular models are available for around $100 and can also handle 300 or 1200 baud. At 2400 baud your 100K picture is only about a seven-minute transfer.

If money is no object and you want the ultimate in speed, consider a 9600 baud modem such as the USR Courier HST reviewed in this issue. Although roughly five times as expensive as an average 2400 baud modem, you can actually get better than five times the transfer speed due to advanced compression circuitry built into these 9600 baud modems.

Hayes Compatible

Hayes compatibility is to modems what Epson compatibility is to dot-matrix printers — a de facto industry-wide standard. Hayes invented what's commonly known as the "AT Command Set." All Hayes commands begin with the letters AT, which stands for "attention." The rest of the command causes your modem to do

SUMMARY: A-Talk III is a capable program with strong and weak points. It can be utilized by beginners and advanced professionals alike. Its optional speech, superior emulation features, scripting language and ability to talk to multiple serial ports are each a strong plus. Documentation is excellent. The phone book design needs to be reworked.

BAUD BANDIT

Derived from an earlier public domain terminal program called GT, **Baud Bandit** ($49.95, Progressive Peripherals & Software) handles like a fast, slick sports car. It's my current terminal program of choice. When I began compiling notes for this article, Baud Bandit had not yet been released and I was using a beta version for testing. Since then the release version 1.00 has shipped and except for a few very minor changes is the same program.

Amigans used to pull-down menus might be initially confused by Baud Bandit. The program has rather unorthodox gadgets along the top of the screen that resemble menu titles, but aren't — the program has *no* pull-down menus. Clicking on these gadgets causes some action to happen, such as hanging up the modem, redialing the last number dialed, or sending a break signal.

Baud Bandit has a deceptive air of simplicity, but there's a lot more to it than is first obvious. Example: to create or change entries in your phone book, you click on the word Phone. The phone book window slides up. Now click on Edit, Insert or Delete and you can change, add or remove telephone entries from the phone book "in place" rather than needing to invoke a separate text editor to do it. The same method is used in the windows which hold your setup configuration and macro key assignments.

Fields within each phone number's entry can be used to tell Baud Bandit to automatically use a specific file transfer protocol when that BBS or service is dialed. Pointing at a field and clicking the right mouse button toggles through the possible baud rates and setup values without needing to delete and retype them. Bandit stores its phone book files as plain ASCII text, making them easy to edit if you prefer to use your favorite text editor. This also lets you import ▶

things such as: dial or redial a number, hang up, answer, auto-answer after X number of rings, set the modem's internal "registers" to different parameters, and so on. The Hayes Corporation still makes and sells their own brand of modems. While excellent units, they tend to be quite expensive compared to other brands with comparable features.

Most modem manufacturers today incorporate *most* of the Hayes commands and will say so on their packaging or in their advertising. Some modems have more AT commands, others less, still others use modified versions. The more compatibility, the better. When you're shopping, study a modem's packaging carefully.

The Supra 2400 (reviewed in this issue) and the Avatex 2400 are both well-made, reasonably priced, comply with — and even enhance — the standard set of AT modem commands. Many Amiga owners use one of these modems. The Supra uses a newer "modem on a chip" technology which aids in making it smaller, lighter, and less heat-producing.

Internal, External, Cable

External modems are free-standing units with their own cases and power supplies. They are attached to your Amiga's serial port by a cable. If you own an Amiga 500 or 1000, an external modem is your only option.

Internal modems come on a printed circuit board or "card" that installs in a slot inside an Amiga 2000 or 2500. Internal modems are generally less expensive since there's no need for a separate case or power supply or cable.

However, external modems have the advantage of being portable. With the right cable you can hook an external modem to just about any kind of personal computer there is. External modems usually have a row of status lights on their font panel to advise you of the modem's current operating condition. Virtually all modems have speakers.

It's very important that you *get the right cable!* Modem manufacturers don't include a serial-port cable in their packages, because they don't know what kind of computer you intend to attach the modem to. If you're technically inclined you can make your own modem cable for just a few dollars worth of parts. Carefully study the "serial port pinout" charts in the documentation that came with your Amiga!

Amiga 500 and 2000 models use a different kind of serial port connector than the Amiga 1000. And all three are different from the connectors found on Macs, PCs, or other kinds of computers. In addition, all Amiga serial ports have certain pins which carry voltage. This voltage could be deadly to a modem if an incorrect or "generic" cable is attached. Be sure you buy the proper modem cable for your model of Amiga. If you buy your modem from a computer supply store which does not also sell Amigas, be wary of buying a cable at the same store. Amiga dealers — whether walk-in or mail order — will have the right cables for your computer. Just make sure you tell the dealer which model of Amiga you own.

One final point — consider a *second phone line.* While you make or receive a call with your modem, the telephone line used by the modem is unavailable for voice calls. This could obviously cause conflicts with other family members or room-mates. Think about having your local telephone company install a second line into your home just for your modem. Don't ask for a "data grade" line. A regular voice line will do fine and costs less. ■

phone book files from other programs that use a similar format.

When you're ready to dial out, just mouse-click on any of the entries in your phone book – which can hold 1,000 numbers. The entries change color to indicate they've been selected.

Baud Bandit's HELP window is more than just informational – each of its entries not only displays a hot-key equivalent, but is itself a clickable gadget! The documentation will help get you started, but once past the initial learning phase the program itself provides just about all the help you'll need.

menu bar turns into a download monitor line.

Baud Bandit's file requester uses a "carousel" of gadgets that displays your mounted disks or devices. The program knows how many drives and partitions you have and presents each device name to you as you click the arrows at either end of the list. Smart!

Rather than overwriting a file, Baud Bandit will append incoming captured text to an existing file, or if your capture file's name ends with a number, a new file will be opened with the same filename and the ending number incremented by 1. The file requester also tells you how much

BAUD BANDIT is currently the reviewer's favorite. This software is powerful, smooth and user-friendly, with a lot of automated functions that simplify your routine operations.

A slick "backscroll buffer" review window lets you use your cursor keys to recall and view text that has scrolled off your screen. Text in this special window can be selected and shot back out through the modem, or saved to disk as an ASCII file. This review window did have a problem — lines over 80 characters long did not wrap around to the next line.

With support for baud rates from 300 to 19200 bps, and protocols including Xmodem, Xmodem-CRC, WXmodem, Y-Modem, Y-Modem G and Batch, Xmodem-1K, ZModem with auto-receive and CompuServe B, Baud Bandit is equipped for just about any possible file transfer needs. During a file transfer, Bandit's top

free space is left on the selected disk.

Besides having its own simple scripting langauge, the power of ARexx is here, too. Baud Bandit's disk includes some handy ARexx macros – owners of Bill Hawes' ARexx language for the Amiga will be able to perform such tasks as unARCing a downloaded file by invoking an ARexx macro.

My complaints about Baud Bandit are few. The phone book line limit of 1,000 should be lengthened so those with plenty of memory to burn could load in the entire 5,000-line Final List if they wanted to. Since the phone book is so superior, why not take it even further with sort and search capabilities? The manual glosses over the built-in script language in too few lines and with too few examples. More ARexx examples would be useful too. The documentation is really the weakest part of this package.

SUMMARY: While it doesn't handle VT-100 or IBM-ANSI emulation or some other exotic features, Baud Bandit is very slick. It's built for speed and it just feels solid. Beginners should be able to adapt to its nuances quickly. A good value for the money. Highly recommended.

DR. TERM PROFESSIONAL

There's an interesting history to **Dr. Term Professional** ($99.95, Progressive Peripherals & Software). Written before the Amiga was first sold, the program was developed for Commodore under the name TeleCraft. Commodore never released it, so Progressive Peripherals & Software picked up the rights to it, renamed it and sent it back to its developers for an overhaul and facelift.

Although supplied with a well-indexed, ring-bound, 255-page manual which covers in great detail all of the program's functions, Dr. Term has a odd, antiquated feel. It's no longer state-of-the-art Amiga software. The program's file selection requesters are cumbersome, requiring the user to type in device names when no gadgets exist for your chosen disk drive. When you're cruising a pay network, or are on a long-distance connection and getting ready to download a file, the last thing you want to do is wrestle with this kind of file requester while the money-meter ticks away.

Dr. Term Professional is powerful, but it's an old design. The command language, while well-documented, would be a chore to master. There is a handy remote host mode that serves as a miniature BBS. With better file requesters alone, I'd recommend Dr. Term as a program to consider. As it stands, I think you have better programs from which to choose.

ONLINE! PLATINUM EDITION

Quite a few revisions have been added to **Online! Platinum Edition**

continued on page 36

Using Your AMIGA *Plus* Disk

Most files on this FULL disk can be run just by double-clicking on their icons from the Workbench. Every article in this magazine with a Disk Symbol on its first page has a program or graphic on the AMIGA* Plus *Disk.

QUICK-START INSTRUCTIONS:

1. Turn on your Amiga and insert your Workbench disk (version 1.2 or higher) into any drive. 2. Insert your *copied* AMIGA *Plus* Disk into any drive. (The original AMIGA *Plus* Disk should be write-protected and stored in a safe place.) 3. Double-click on the AMIGA *Plus* icon to see a window with the disk contents. 4. To read the Instructions file, double-click on the Instructions Scroll icon. Use the SPACEBAR to scroll forward and the ESC key to quit.

PHA$AR 3.0

Featured on this issue's disk is PHA$AR 3.0, the award-winning #1 Amiga personal accounting software. PHA$AR takes up almost an entire disk — so we compressed it in half. But it's easy to automatically decompress PHA$AR onto any floppy disk or hard disk drawer you choose. Simply click once on the MakePhasar icon, hold down the SHIFT key and double-click on the disk or drawer where you want to install PHA$AR. If you have only one disk drive: Just double-click on the MakePhaser icon and you will be guided through the installation.

BASIC ART CODER

The BASIC Art Coder is another respected commercial program brought to you on this issue's disk. The Coder is a unique Amiga paint program that saves your pictures as BASIC routines which are much smaller than IFF files. You can fit as many as 280 BASIC Art Coder pictures on one floppy disk, for a 23-minute slideshow. Also, BASIC programmers can easily include these pictures into their own programs.

Because of its large size, BASIC Art Coder is compressed on this issue's disk. But it's easy to automatically decompress BASIC Art Coder onto any floppy disk or hard disk drawer you choose. Simply click once on the MakeArtCoder icon, hold down the SHIFT key and double-click on the disk or drawer where you want to install BASIC Art Coder. This script will also copy AmigaBASIC from the Workbench Extras disk (1.2 or 1.3), or from any other disk with AmigaBASIC in its root directory, if you want it to. BASIC Art Coder requires AmigaBASIC to run.

BallBench Game

Silly, entertaining and unique, Ballbench is a fiendish variation of the classic Pong game — that can run on top of just about any Amiga application. (Try it with the FernPhantom or JustSayYo! animations on this disk.) To play, click open the BallBench drawer and then double-click on the BallBench icon. BallBench starts in a demo mode with your Amiga controlling both players. Click in the Score window and then use the menus to switch players and customize the game options. To exit, click on the close gadget in the upper left corner of the score window.

PrintPal

PrintPal saves your active Preferences printer settings to a small file with an icon that you double-click to instantly restore those settings into your Workbench Preferences. Now, with just a mouse-click, you can effortlessly switch from printing horizontal, page-size graphics to postage-stamp-size pics to letter-quality text to tiny text for long listings. The C language source code for this program (PrintPal.c) is also on this disk.

On disk as well is icon.fix — which fixes a minor bug that affected the C source code generation feature of the ICON utility on AMIGA *Plus* Disk #5.

OneLiner

This handy little utility lets you use repeated CLI commands with just a mouse click. Double-click on the OneLiner icon to start the program. Click on NEW to erase the current command text, then type in your own command and click on EXEC to run it. The command's output will show up in a small window which opens behind the OneLiner window. (You'll probably want to resize this window.) To change the directory (OL:) that OneLiner looks at, use a command like

ASSIGN OL: DF1:

The assembler source code for this program (oneliner.asm) is also on the disk.

FernPhantom and JustSayYo!

FernPhantom and JustSayYo! are short scANIMs (scanner animations) demonstrating the flashy HAM video images you can produce with a Sharp color scanner. Start either animimation by double-clicking on its icon. To pause or restart, press the SPACEBAR. Pressing RETURN while the animation is paused will advance one frame. Exit by pressing the ESC key or clicking the right mouse button. ■

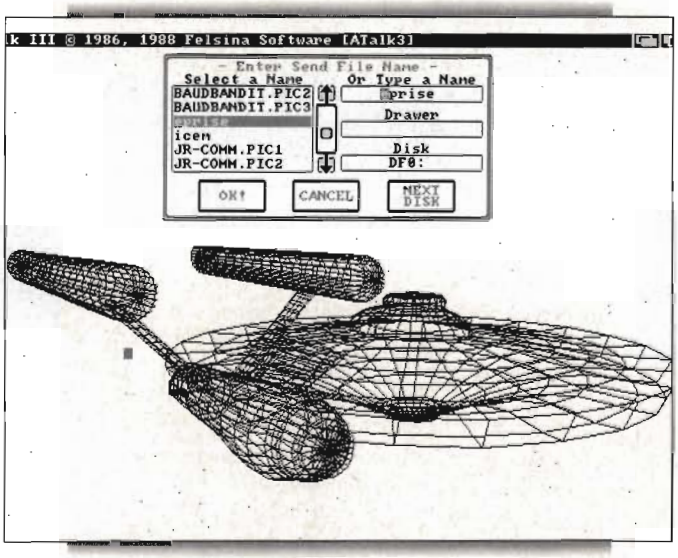
Order Your AMIGA *Plus* Disk today for only $10.95 (plus $2 shipping and handling). Phone (800) 234-7001 — Visa, MasterCard, American Express charge orders.

Damaged AMIGA *Plus* Disks will be promptly replaced free of charge. Subscribers — just phone (619) 485-7754. Newsstand buyers send your damaged disk to: AMIGA *Plus* Disk Desk, 544 Second Street, San Francisco, CA 94107.

All programs on this issue's disk are Copyright 1990 by AMIGA *Plus* unless specifically credited on the disk as "redistributable utilities."

($99.95, Micro-Systems Software), a new version of one of the very first Amiga terminal programs. This software is also available as the telecommunications module of MSS' The Works! Platinum Edition ($295) which also includes a spreadsheet, database and word processor and other utilities.

ONLINE PLATINUM is an even more powerful and convenient version of a popular longtime favorite. You can buy it individually or as part of The Works: Platinum Edition.



A-TALK III does just about everything well and has plenty of fans, building on the popularity of its earlier versions. Speech capability and Tektronix graphics are among its strongest features.

Online! has some interesting features not found elsewhere. One of them is ability to save the program's entire configuration (the way you set up all its various parameters) as a ".trm" file with a Workbench icon. Thereafter, you can run the program with those special settings by simply double-clicking on that icon. Online! will load with all those customized settings ready and waiting. Different configuration settings can also be loaded once Online! is running by opening a requester and selecting one of the .trm files you created previously. This makes changing configurations easy, since everything is stored in one file, rather than using separate disk files for phone books, macro keys, and screen/color setups as do other programs. But there are some disadvantages to this scheme.

Each .trm file you create can have a phone book with up to 40 phone numbers, and each phone number may have its own unique set of 20 macro key assignments. A little requester pops open when you wish to edit or add phone numbers and it's finally been fixed to skip to the beginning of the next field when RETURN is pressed. The entire .trm file is saved to disk as a binary file, so you can't import an existing ASCII phone book from another program, although public domain phone book file converters exist (but none are included with the Online! Platinum package — they should be).

Some of Online!'s file requesters have the ability to mask out all filenames except those which have a particular suffix, a feature which can help remove clutter by displaying only the relevant files. Since it would make no sense to try to load an IFF picture or a sampled sound as a terminal setting, Online! shows you only the existing .trm files on your disk when you wish to load a new configuration. While this is a handy feature, especially for beginners, the requesters in Online! require you to repeatedly click on the drive button to move from one device to the next, unless you care to enter a device name by typing it in.

Once you create your phone book, Online!, like all modern terminal programs, will auto-redial a number until it connects, or you can "queue" dial —- choose a bunch of phone numbers and the program automatically dials the first, waits a pre-determined amount of time for a connection, and if none happens, dials the next number you chose.

Many of Online!'s functions open small draggable windows in the middle of the screen, filled with useful information, such as the window that appears during a binary file transfer, letting you monitor every aspect of your download or upload including transmission speed and number and type of errors encountered.

Online! Platinum is well equipped for file transfer work, as it implements Xmodem, Xmodem-CRC, Xmodem-1K, WXmodem, Ymodem and Ymo-

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CIRCLE 011 ON READER SERVICE CARD

dem-Batch, Kermit, ZModem, and CompuServe B and Quick-B protocols. Unique to Online! Platinum is the new Sadie protocol. Sadie permits simultaneous 2-way chat and bi-directional file transfer when used between two Amigas, both either running Online! Platinum or one running Online! and one serving as a host running Micro-Systems' BBS-PC! Version 4.30 Bulletin Board software. (A last minute check with MSS revealed that BBS-PC! 4.30 has still not yet been released, and may even appear under a completely different version number. Thus no currently available BBS software supports Sadie yet). Sadie is definitely entertaining when used head-to-head with a friend. File transfer speed suffers somewhat but that's to be expected when moving files in both directions at once.

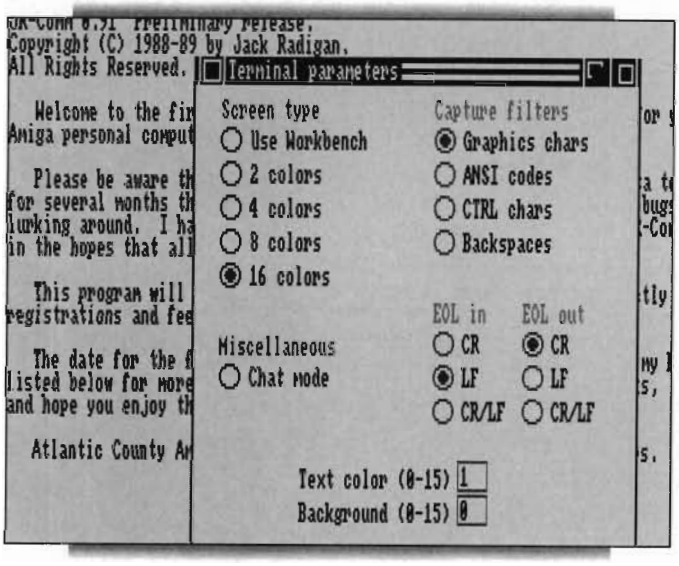
Workbench fans will appreciate Online!'s ability to save an icon along with each downloaded file, however this feature has little utility other than visual, since most downloaded files are archived in some way and have to be unarchived from the CLI before the programs they contain can be used.

Online! Platinum's scripting language is a powerful one, and its Learn Mode is a nifty feature. With Learn invoked, you log onto a host system and construct an interactive script as you answer the BBS' or network's prompting. This script can then be edited or saved and used for automatic log-on during your next session with that same host.

Various special terminal emulations are available in Online! Platinum including VT-100, VT-102, VT-52, and Tektronix 4010. For these terminal emulation modes, Online! can be configured for a display of up to 132 columns, using special fonts installed from its distribution disk and called up with menu selections. As with any other good terminal program, you may add or remove screen borders, switch into and out of overscan, use more or fewer colors for ANSI emulation or to conserve memory, and more.

Online! Platinum can also address multiple serial ports and modems by using a combination of WorkBench icon tooltypes and a serial-port menu within the program itself.

SUMMARY: Online! Platinum is the best version yet of an old favorite. Many problems with earlier versions have been addressed and fixed, although some quirks remain, such as the unconventional file requester. The program feels and acts solid, has many powerful features, is well documented and supported by phone, and by Micro Systems Software's BBS and their presence on national networks.



JR-COMM is a flashy new shareware adaptation of the PD classic, COMM. Not quite at version 1.0 yet, its free pre-release version has gained many admirers.

COMM 1.34

A public domain program by Dan James, **Comm 1.34** is a perfect terminal program for the novice. It is useful and easy to master. Comm, or "The Communicator," is the granddaddy of many newer terminal programs. The price is right too: it's absolutely free.

You'll find Comm on just about every BBS, in most pay-network Amiga download areas, and on public domain disk collections along with its C language source code. If you have programming talents, you can extract its routines to incorporate in your own terminal programs, or modify it into a custom terminal of your own design.

Comm 1.34 has only two file transfer protocols — Xmodem/Xmodem-CRC and WXmodem. Its phone book is incorporated into a pull-down menu which holds up to 44 entries. To get more numbers, create another phone book and load it from disk when needed. Up to 20 simple macros are available on your function keys, SHIFTed and unSHIFTed. There is no script language or ARexx port. No clocks, no timers, no money meters. Very few frills at all.

When run, Comm looks for two files — its phone book (comm.phone) and macro keys (comm.keys). If it finds them in your current or path directory, it loads them. Both files can be modified using any text editor.

Comm's environment is completely devoid of gadgetry and visual stimulation. If you like a clean screen, this is for you. When performing a text capture or transferring a file, a single line of information appears at the bottom of the screen so you can follow the progress of the transfer.

Other developers have taken Dan James' source code and worked up enhanced versions of Comm. **AZComm** adds the extremely fast throughput of Zmodem support. **InTouch** has a backscroll buffer. **AMIC Term** is being upgraded as a commercial product jam-packed with

continued on page 41

High Speed File Transfers

Showdown at 9600 Baud

By Harv Laser

New high-speed technology delivers blazing modem speed over normal voice-grade lines, for more reliability and lower phone bills.

While most Amiga telecommunications take place at 1200 or 2400 bits per second (baud), and 2400 baud modems are the current bestsellers, there now exist new high-speed modems which take advantage of advanced data transmission techniques — using normal voice lines to obtain some rather astonishing upload and download times. This jump into the fast lanes is available to anyone willing to pay for it. The list price of the modem tested in this article is roughly five times what an average 2400 baud modem costs today.

The U.S. Robotics **Courier HST** (High Speed Technology) is an impressive unit that's becoming quite popular with BBS sysops, who can purchase it at a substantial discount from its $995 suggested retail price. (Contact the manufacturer for details.)

Using a built-in data compression scheme (Trellis Coded Modulation), the HST can transfer data to another computer attached to a similar modem — at speeds of up to 14400 baud on a 9600 baud connection over normal voice-grade phone lines. Owners of such modems can transfer an entire Amiga floppy disk's worth of data in just a few minutes.

BBS Test

I tested many Amiga terminal programs with the HST, connecting both to a local BBS running on an IBM-AT compatible and to a friend's HST-equipped Amiga. The results of these tests were not totally conclusive. But one program, written to be optimized for high speed transfers, clearly outperformed all the others. This "winning" program, AZ COMM, is public domain!

The file transfers performed in these tests were all accomplished using the Zmodem protocol. Zmodem is, by far, the fastest file transfer protocol available. It's very intelligent and can adjust the "blocks" (packets of data) to larger or smaller size as a transfer progresses. Xmodem simply cannot cope with the amount of data being moved at high speeds and usually just gives up.

In many cases, certain programs reported a high number of transmission errors when receiving but not when sending. This could be attributed to non-identical modem settings between my system and the Bulletin Board.

Overall, the public domain program AZComm achieved the fastest throughput in either direction when transferring binary or text files. Its performance was generally very high, whether connecting to a BBS or going "head to head" with another Amiga running a Courier HST with identical settings.

When connecting a high-speed modem such as the HST to your Amiga, there are many factors which come into play. Settings need to be tweaked to achieve maximum throughput. Not only does the terminal program have its parameters, but Amiga Workbench Preferences also offers a "change serial" screenful of gadgets which can profoundly affect transmission speed. Last, but certainly not least, are the settings inside the modem itself — and the HST has dozens of them!

The HST manual, while very complete, is not the easiest document in the world to understand. High-speed modems introduce many new terms and concepts to telecommunications users. The key to achieving high rates of transfer is to understand the purpose of all these variables and parameters, and experiment with them until your best results are realized. ■

U.S. Robotics Courier HST (High Speed Technology) modem can transfer data to similar modems at speeds of up to 14400 baud on a 9600 baud connection — over normal voice-grade phone lines.

COURIER HST MODEM $995
U.S. Robotics Inc., 8100 North McCormick Boulevard, Skokie, IL 60076.
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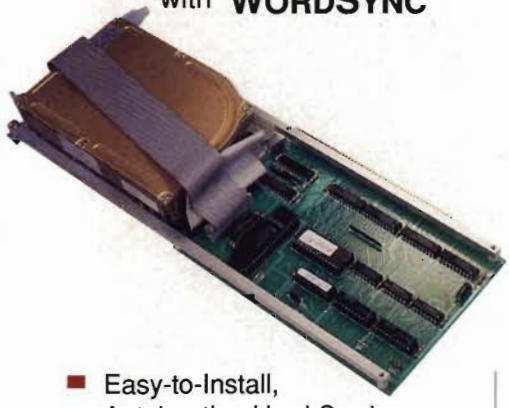

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fancy features. **CommpLx** can recognize a group of proprietary blackslashed commands sent over People/Link's conference area and display text with Amiga-ANSI graphics enhancements such as reverse, italics, and colors. Access! (see below) adds chrome and neon.

SUMMARY: While sparse in appearance, Comm satisfies the need for a simple, yet fast and functional, terminal program. It's easy to learn, doesn't use a lot of memory when running, and comes with source code for programmers who want to customize it. Documentation is sparse but adequate. It might be all the terminal software you need and you sure can't beat the price.

ACCESS! 1.42

One of many second-generation Comm derivatives, **Access!** ($25 registration fee, shareware by Keith Young) has undergone many revisions, although version 1.42 released in October 1988 is still the most recent. Among modem jockeys, this program has a large and loyal following. Access! loads by default to a very pretty 16-color screen bedecked with a row of push-button gadgets across its top and bottom borders. The pull-down menus are reminiscent of Comm's with some additional items added here and there.

"Pretty" is a fitting adjective to describe most of Access!'s interface — in the 16-color mode you'll be facing windows full of shaded buttons and gadgets, cute Amiga-checkmarked disk selection buttons, and text with drop-shadows to give it a charming 3-D appearance. All of these color combinations can be customized to suit your taste and are stored in one of the definition files that Access! looks for when it loads.

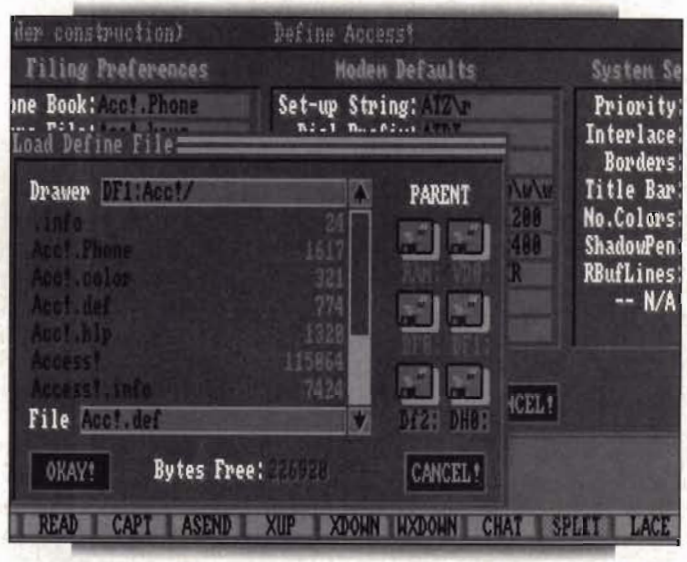
Access! has some humorous touches, unusual for terminal software. Try to open the program's review buffer before any text has been captured and you'll be told "Not enough to review yet, Sir (Ma-am)." The "about" window informs you that the author hails from "Planet: Earth (usually)" with a smiley face tag. Access! is a lot of fun to use. But while it's colorful and has splashes of humor, it's also right up there with the best in functionality.

Xmodem, Xmodem-CRC, WXmodem and CompuServe B protocols are available for file transfers. ZModem can be invoked as an external protocol by putting Access! to sleep first. Menu toggles add or remove window borders, a chat window, interlace screen, and other frills. Two separate fonts can be used for the receive and transmit windows. The phone book can hold up to 60 entries. Each entry can be configured to call up a different set of macro keys, screen colors, and script for auto log-on and navigation. If the 16-color screen eats up too much memory on your Amiga you can tell Access! to run with fewer colors. If the two strips of gadgets running across the top and bottom of the screen annoy you, they can be moved so that both are at the top, at the bottom, or hidden.

Access! does a good job of handling the Amiga-ANSI color codes used by some bulletin boards. With a font containing special graphics characters, you can also correctly view IBM ANSI graphics found on many bulletin boards — these graphics are normally used to draw lines and boxes around items of interest such as system bulletins.

SUMMARY: Access! 1.42 is a colorful and capable terminal program, one of the best available as shareware. It has a homey and yet polished feel to it. For those who want the functionality of Comm in a prettier package with many added extras, Access! is an excellent choice.

ACCESS is a turbocharged version of COMM, the all-time favorite Amiga public domain telecommunications program. This adaptation adds many more features and a flashy interface.



JR-COMM 0.94a

A recent entry in the shareware field, **JR-Comm** 0.94 ($30 registration fee, Jack Radigan) is so new that it hasn't reached version "1.00" yet — which means that everyone using it becomes a de-facto Beta tester.

JR-Comm can be configured differently for every single entry in its phone book. Baud rates from 300 to 19200 bps, screen configurations, protocol choices -- every one of the program's settings can be tied to a specific phone book number. When that number is dialed, all the new settings pop into place. If you frequently dial a BBS which uses IBM-ANSI graphics, JR-Comm provides near-perfect emulation. You'll see lines and colored boxes drawn on your screen as the BBS sends its special codes to your modem.

JR-Comm will optionally maintain a time-stamped "log" file of all your online sessions and write it to disk as each session ends. This file tracks

each service you call, how many files you transferred, their names, which protocol you used, and how efficient the transfer speed was. I wish *all* terminal programs had this log feature.

For your file transfers, Xmodem, WXmodem, Ymodem, and Zmodem with auto-download and resume features are here, along with CompuServe B+ protocol. Initiating a file transfer results in an extremely informational window opening onscreen.

Radigan will be distributing JR-Comm as "enforced shareware." Those who pay the fee will have the latest version. Those who use the program but don't pay will always be one version behind — as each new version comes out, the previous version will be freely distributed.

SUMMARY: Users seem to be split in how they react to JR-Comm. Some swear it's the best terminal program they've ever used while others have trouble learning it. I believe JR-Comm has the potential to be a major contender. ■

Harv Laser (Plink: CBM*HARV) is the Chairman/Sysop of People/Link's AmigaZone Club and writes for many Amiga magazines.

SOURCES

A-TALK III $99
Oxxi, Inc., P.O. Box 90309, Long Beach, CA 90809. (213) 427-1227.
CIRCLE 153 ON READER SERVICE CARD

BAUD BANDIT $49.95
DR. TERM PROFESSIONAL $99.95
Progressive Peripherals & Software, 464 Kalamath Street, Denver, CO 80204. (303) 893-6938.
CIRCLE 154 ON READER SERVICE CARD

ONLINE! PLATINUM EDITION $99.95
Micro-Systems Software, 12798 W. Forest Hill Blvd., Suite 202, West Palm Beach, FL 33414. (407) 790-0770.
CIRCLE 155 ON READER SERVICE CARD

ACCESS! 1.42 $25
Shareware: Keith Young, Route 2, Box 261, Goodview, VA 24095.

JR-COMM 0.94a $30
Shareware: Jack Radigan, P.O. Box 698, Mays Landing, NJ 08330.

COVER STORY

LOOK, MA, NO SERIAL PORT!

Hayes-compatible, 2400-baud modem board plugs into your A2000

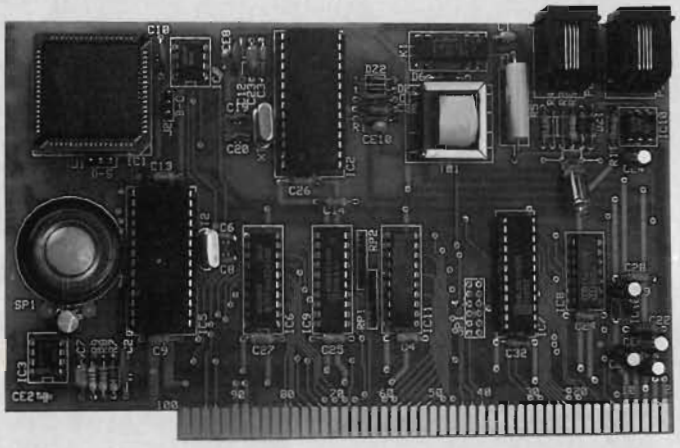
Reviewed by Arnie Cachelin, AMIGA *Plus* Technical Editor

++++

Our SupraModem 2400zi board has been a reliable 2400 baud Hayes-compatible performer, while freeing a serial port we needed for our PostScript laser printer.

The **SupraModem 2400zi** is the only internal modem card made for the Amiga. It gives you a 2400 baud, Hayes-compatible modem without taking over your Amiga's serial port.

Installing the SupraModem 2400zi card itself is about as easy as installing anything in your A2000 can get.



The SUPRA 2400zi internal modem fills half an expansion slot and adds all the sound and joy of speedy 2400 baud telecommunications to your Amiga 2000 without hogging your serial port.

Once you have the cover off, the hard work is over. The card is about half the length of an A2000 slot — very useful if you want to put it next to a bulky card such as a hard disk!

A pair of modular phone jacks is on a separate plate which replaces a blank at the rear of the Amiga. Having two phone jacks allows you to use the modem to dial your voice calls, or switch your modem online after talking for a while. To start telecomputing, plug your telephone into one of the two modular jacks in your computer and use Supra's six-foot cable to connect the other jack to the phone jack in your wall.

Installing the software is almost as easy. From the Workbench, you can run a script to copy the driver modem0.device to the DEVS: directory of your Workbench floppy or hard disk. Depending on what communications software you want to use, you may also need to run another program on the SupraModem disk, ModemModify, which scans a copy of your terminal program, replacing serial.device with modem0.device. ModemModify settings can be changed to make versions of your software for modem1.device through modem4.device, if you happen to have multiple modem boards installed. This program could be useful for changing strings in other commercial programs. For example, in AMIGA *Plus* #2 a reader asked for help in changing Deluxe Music Construction Set's default file requester gadgets.

Newer terminal software which can use devices other than the serial.device can generally be run without modification. Supra provides the compatibility list shown below.

I have also found that AtrTerm, the terminal software for Atredes bulletin

boards works after ModemModify, and Online! Platinum works if you set the ToolTypes string in the program's icon to DEVICE=modem0.device — which is also the way A-Talk III works.

Another program on the SupraModem disk, ShowModem, opens a small modem status window modeled after the front panel of many external modems, with blinking LEDs and everything.

Supra plans to release an AmigaDOS device for the modem. This is analogous to the SER:, PAR: and PRT: devices which can be used like disk volumes in many AmigaDOS commands. For example, 1> COPY MyLetter TO PRT: will print the file MyLetter. This device will use the MOUNT command from an entry in the mountlist file.

Using the 2400zi

The hardware itself features the full Hayes AT command set, as well as Bell and CCITT protocols. A little speaker mounted on the card gives you the option of listening to your modem dialing and connecting, or even monitoring the annoying whine of 2400 baud telecommunication. The card also comes with a programmable non-volatile memory which can store the current configuration of the modem and one phone number, even after the computer is turned off. Supra also claims the modem has two-stage surge supression for added protection against those pesky lightning strikes on the phone lines which are trying to fry your Amiga. Fortunately, I was unable to test this feature.

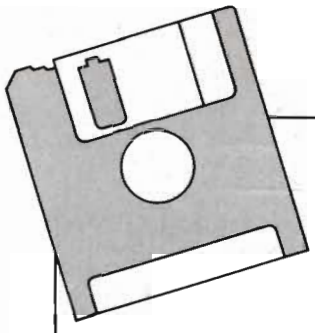
Using the modem is like using any other 2400 baud modem — better than 1200 baud! I am still amused by the sounds of dialing and connecting (or busy signals) which emanate from my Amiga when I go online. The 2400zi will detect busy signals and send an appropriate message to your terminal software. This can be useful in avoiding the pitfall of auto-redialing a wrong number and ringing some poor victim's phone every 20 or 30 seconds until they take the phone off the hook.

A major benefit of an internal modem card is the availability of your Amiga's serial port, which would usually be taken by an external modem. As a test, I ran one terminal program which talked to a PostScript laser printer on the serial port at 19,200 baud, while another program used the SupraModem to download a Japanese font from CompuServe. The PostScript printer was in interactive mode, where it responds to the PostScript commands line-by-line and sends messages back to the terminal. Both transfers worked flawlessly.

For Amiga owners who want both telecomputing and the bi-directional communications with their laser printers which the serial port allows, the 2400zi is a uniquely convenient solution. I did not try connecting another modem and calling two bulletin boards at once, but I see no reason why that wouldn't work. ■

SUPRAMODEM 2400zi $179.95
Supra Corporation, 1133 Commercial Way, Albany, OR 97321. (503) 967-9075.
CIRCLE 151 ON READER SERVICE CARD

PROGRAM	PUBLISHER	STATUS
A-Talk III	Oxxi	Works as is
Access!	Shareware	Works after ModemModify
Baud Bandit	Progressive	Works as is
Dr. Term	Progressive	Works after ModemModify
Diga	Aegis	Works after ModemModify
Handshake	Shareware	Does Not Work!
SuperBase Pro	Precision	Works after ModemModify
VT-100	ShareWare	Works after ModemModify



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DD17: Raytracing - learn about raytracing the inexpensive way; DBWRender - Ray tracing, RayTracedPics, C source included.
DD39:Text Editor #3 - MicroGnuEmacs with new support for binding macros, keyboard definition and ARexx, Also on this disk Conman1.1_2, Evolution, Life and Startup2.
DD44: ARP and DiskSalv - The official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI. DiskSalv - By far the best file and disk recovery program going. Many others
DD47: Pascal Compiler - This disk contains a Pascal compiler, A68k assembler, and linker.
WB1: Graphics and Plotting - Several neat graphic and mathematical plotting routines are include; Plot - a 3D mathematical function plotter. Plots any user defined function, Scenery - This generates fractal landscapes, Surf - makes bezier surfaces of revolution. It produces awesome pictures of objects one could turn on a lathe.
WB4: Telecomunication - This disk contains several very excellent PD comunication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols; Comm (v1.34) - The best PD communications programs ever made; Handshake (v2.12a) - Full featured VT52/100/102/220 terminal; JRComm (v0.94A) - Another great full featured comm program.
WB5: Fonts #1 - Several fonts (35) for the Amiga, also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Fonts #2- Several fonts (over 30), some up to 56 pts.
WB7: ClipArt - Animals, trees, Etc..
WB8: File Management - Great disk. UtilMaster - From your workbench move, copy, delete, read, show, edit, arc, run any command, and much much more!! Atree - similar to UtilMaster but hierarchal tree displayed. Also MachII - a must have mouse and keyboard enhancer, and Go - an ancient chinese game.
WB9: Icons- Contains tons of icons and Two icon makers including Hermes Icon maker and IconMeister.
FD5: Tactical Games- BattleForce(3.0); A game that simulates combat between two or more giant, robot-like machines. BullRun - a Civil war battle game, Metro - you play the role of a city planner. Very good Amiga version of Kingdom, Golden Empire, Etc. Very very habit forming.
FD6: Games! - This disk is chalked full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.
FD7: Pacman - Several pacman type games including; PacMan87,
FD8: Games! - This disk is full of games, game hints and a few game editors (cheat programs, see Nov issue) including: Antepenult - The best PD Ultima type going
FD9: Moria - A very well done role playing adventure game This has great graphic controls, mulitple spells. Play time several months!
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ON DISK

THE AMIGA COLOR INPUT CHAMPS

ASDG Professional ScanLab and the Sharp JX-450 Color Scanner

Scan 16 million colors and use them all in your desktop publishing — create spectacular video effects too!

Review by Arnie Cachelin, AMIGA *Plus* Technical Editor

++++ 1/2

ASDG's interface and the Sharp color scanner are state-of-the-art and easy to use — today's only tool for translating your photos into professional-quality 24-bit Amiga color.

Thanks to **Professional ScanLab** from ASDG, Amiga users can now take advantage of the superb quality and convenience of the **Sharp JX-450** desktop color scanner. You can bring color photographs into your Amiga with higher resolution and millions more colors than previously possible, then fine-tune the image and save it as an IFF picture in any mode or size.

Better yet, because Professional ScanLab uses more colors internally than the standard Amiga display, you can save spectacular image files for use with high-end video frame buffers or PostScript printers.

Most desktop publishers will also want ASDG's **RESEP** software, which replaces Gold Disk's Professional Page 12-bit HAM separations with 24-bit professional-quality color separations.

HAM (right) and 24-bit (left) reproductions of the cover from Amiga Plus #2.

Although the Professional ScanLab system would break the budget of most Amiga users, it is an important addition to the high-end professional capabilities of our favorite computer. You must have an Amiga 2000 or 2500 computer with a minimum of three megabytes of memory. Very strongly recommended is at least five megabytes and a good-sized hard disk. And of course you need a color scanner — either the Sharp JX-450 for $6,995 or the smaller JX-300 for $3,995. A lower-budget alternative is **ScanLab/100**, a $995 hardware and software package based on the Sharp 4x6 inch JX-100 hand-held scanner. ScanLab/100 will work with an Amiga 500 and 1000 as well as Amiga 2000.

Of course, if money is no object, the scanner makes an excellent tool for any Amiga artist. You can digitize photos, drawings, or even 2-D objects and import the images you get into your favorite paint program. Black-and-white images benefit from the scanner's sensitivity and fine gray scales, as well.

Easy Installation

Installing the Professional ScanLab hardware and software is not complicated. First plug ASDG's Twin-X board into your Amiga. This gives you an interface for industry-standard SBX modules. The Twin-X board can hold two SBX modules — including ASDG's **SBX Serial/2** ($199), a high-speed serial port module which I recommend for desktop publishers who use a laser printer.

The software comes with an install program to copy the necessary files to your hard disk. It has a fairly standard interface which, like Digi-Paint 3, uses several different quarter-height control screens — Trial scan, Fine scan, Process and Adjust. Your scanned image is displayed on a separate screen which can be scrolled or moved in front of the control screens.

Color EPP 1-2-3

Let's step through the electronic pre-press (EPP) process as if we wanted to print a color photo in a magazine like AMIGA *Plus*. First, place the original photo on the bed of the scanner, go to the Trial screen and make a trial scan. From this rough image, select a sub-range by boxing the actual image you want. Now go to the Fine Scan screen, set a scanning resolution and scan the image again. Go to the Process screen, then choose Adjust to fine-tune your color and contrast.

With the picture now scanned and ready, we can do the color separation with the 4-color option. This results in four files, one for each of the Process colors used in printing. Finally, we save a 2-bit IFF picture to import into Professional Page.

If we wanted to simply reprint the photo, we could use the PostScript utility that comes with the Professional ScanLab software. This utility transfers the four separated images to a high-resolution PostScript imagesetter for output onto film. We could then send the film to a printer, who would use the separations to make printing plates and finally print the picture.

Since we want to include captions and some Amiga screenshots on our page, we will now load Gold Disk's Professional Page software. In PPage we create, size and position boxes for the pictures, and we position the text. Now we output the page as 4-color separated PostScript files with names like page.cps, page.kps, page.yps and page.mps.

Exit PPage and load ASDG's RESEP software. When we load page.cps, RESEP will display a representation of our page with empty boxes where bitmap graphics have been imported. Click on the box which will hold the picture, tell RESEP to substitute a scan file, giving the name of our cyan component scan file. Save the output and repeat this for the other three components. The page can now be output to film and printed.

Desktop Video, Too

For video professionals too, this ASDG/Sharp system is well worth considering. Although the scanning system was clearly designed with desktop publishing in mind, it can also be easily turned into a high-powered desktop video tool for inputting top-quality photo backgrounds or animation elements.

While NewTek's Digi-View and other Amiga video frame grabbers are several thousand dollars less expensive, the Sharp scanner produces some of the most beautiful HAM reproductions of color photos I have seen. Just scanning the ferny corner of a wildlife calendar gave me a beautiful wooded background, in overscan, for a HAM animation produced in Photon Paint 2.0.

For a sample project, I loaded my fern woods picture into Photon Paint 2.0, and copied the picture to the 15 frames of animation. I then found a scary "ghost" brush on the Photon Paint art disk and loaded it. Flipping from the last frame to the first, I put the brush down, moved it to the right a bit, sized it down a bit, and moved to the next frame to repeat the process. When I finished, I had the ghost lurching towards my "camera" in the woods.

For added realism, I retrieved my original background pic and cut a chunk of fern out of the foreground. I then put this brush in place over each frame of the anim (except for the last frame) so that my ghost was partially obscured by the underbrush. This took about half an hour — and it was my first Photon Paint anim. To fit this anim on this issue's AMIGA *Plus* disk, I had to cut it down to 9 frames, and reduce it from overscan (352 x 240) to 320 x 200. I made the Just-SayYo! anim from four frames of a mouth in different poses, just by placing the different brushes on successive pages, then trimming the edges down so that the square didn't jump around too much.

Color Scanner Basics

The Sharp JX-450 we use at AMIGA *Plus* looks and handles much like a small photocopier. Both the JX-450 and the JX-300 scan at a resolution of 300 dots per inch (dpi). The JX-450 can scan originals up to 11 X 17 inches, while the smaller JX-300 scans pages as big as 8 1/2 X 11 inches.

Scanners read printed images such as photographs into your Amiga. Monochrome scanners create black-and-white or gray-scale pictures by sweeping the page with a small laser and recording the reflection which tells how dark a given area of the page is. A color scanner sweeps the page with beams for red, green and blue, combining these three images into a single color picture. With the Sharp JX series 24-bit true color output, and Professional ScanLab's excellent interface, you can get 16.8 million colors (2^{24} = 16.8 million) — more than your standard Amiga can possibly show onscreen, but just what's needed for professional quality printing.

Fine Details

The Fine Scan can produce 1-bit monochrome images, 8-bit grey images, or 24-bit color images (one 8-bit grey each for R, G and B) or 3-bit color. With the default 24-bit color, a HAM picture will be displayed. If other scan modes are used, more appropriate screen display modes are chosen. At this stage you make a number of important decisions about your scan, selecting varying degrees of edge emphasis (or de-emphasis) and setting the resolution of the scan.

The Sharp scanner has a resolution range of 30 to 300 dpi. You can choose one of the standard resolutions (300, 150, 75 dpi etc.), enter custom horizontal and vertical resolutions, or choose from the standard screen sizes menu. This last option will calculate a resolution which will fit the scan onto a standard (non-overscan) Amiga screen. This option doesn't distort the aspect ratio of the picture, so only one dimension of the picture will exactly match the screen size in most cases.

If you have insufficient memory to scan the desired area at the desired resolution, Professional ScanLab will politely tell you. Even with 9Mb, this was a fairly common occurance, since it takes about 362K per square inch scanned at 300 dpi. This translates to about 33Mb for an 8 1/2 x 11 inch 24-bit 300 dpi scan.

The Adjust button on the Fine scan screen will bring up a color correction screen. This screen has four boxes with diagonal lines which depict the mapping of input pixel intensity to output intensity for each of the red, green and blue scans, and one for greyscale intensity.

By playing with these color controls, you can do useful things like increasing the contrast in shadowed regions of your image, toning down highlights, or even changing the lighting color. When you go into the color correction screen, your HAM screen display is converted into a 32 color picture so that the color changes you make can be shown in "real-time".

Picture Processing

The Process screen holds many of the most useful options. When you Save an image you have the option of saving either a scan format or an IFF image format file. If you save the IFF image, you will get a normal Amiga picture which can be used by most software. Saving a scan format will either produce an 8-bit gray scale file, or a 24-bit color file. Although these scans follow the IFF format, they cannot be displayed by Amiga programs because they have too many colors (or grays).

You can resize your scan with up to 8:1 reduction which will shrink your picture down without throwing away the original full resolution data. Similarly, you can specify any number of colors up to 256 (or 2-16 base registers if HAM is selected) for your picture's palette. Leaving "empty" colors in your palette is very handy for animation or importing brushes with other colors into a picture. There are also options to sort the palette and put the empty palette slots at either end. These full color manipulations can also be performed on 24-bit color pictures produced by Sculpt-Animate 4D. ■

Professional ScanLab	$995
Dual Serial Board	$199
RESEP	$ 59.95
ScanLab/100 with JX-100	$995

ASDG Incorporated, 925 Stewart, Madison WI 53713. (608) 273-6585. Professional ScanLab requires an Amiga 2000 or Amiga 2500, Sharp JX-450 or JX-300 scanner. Minimum 3 megabytes RAM required, 5+ megabytes RAM and 80-megabyte hard disk strongly recommended.

CIRCLE 237 ON READER SERVICE CARD

JX-450	$6,995
JX-300	$3,995

Sharp Electronics Corporation, Sharp Plaza, Mahwah, NJ 07430-2135. (201) 529-9500.

CIRCLE 238 ON READER SERVICE CARD

Amiga Color Separation

Color separation may not seem very useful to the average Amiga user, but it is a critical element in color publishing, and the primary purpose of Professional ScanLab. In order to print a color picture, the original image is separated into single-color images, which are then printed one on top of another to recreate the original picture.

The primary colors (red, green and blue) in your picture are "inverted" into their complements (Cyan, Yellow and Magenta), to account for the fact that printed images are perceived as light reflected from white paper, rather than emitted (radiated) from a black monitor. Black is included as a fourth process color, since the black produced by mixing all three colors is not good enough.

The color separation screen lets you separate your color image into its components, in either process or RGB colors. Separations can be performed and saved color by color or as a set, using the 4-Color button for process CYMK (cyan, yellow, magenta, and black) separations or the 3-color button which will produce separated Red, Green and Blue 8-bit IFF images. RGB separations are used primarily for video display. The separated color component images are displayed as 4-bit "gray scale" pictures tinted to the appropriate hue and can be saved in this format, or as 8-bit scans.

The 8-bit scans can then be sized and output, complete with registration and crop marks, as PostScript files by ASDG's Pscript utility (included). If you want to include text, Amiga art or CAD drawings on the page with your color picture, you will have to use Professional Page to lay out the page, and then use ASDG's RESEP (sold separately) to replace the 12-bit (HAM) color separations in Professional Page PostScript output with 24-bit color. (Last minute news from Soft-Logik: Their newest release of PageStream will reportedly import and separate 24-bit ScanLab scans directly.)

ON DISK

Special Disk Feature

BASIC Art Coder

Slick, easy paint program automatically saves your pictures in memory-efficient BASIC routines — up to 280 images per disk

BY STEVE TIFFANY

With BASIC Art Coder, you design pictures with the mouse just like using any other menu-driven paint program. However, BASIC Art Coder saves your picture as a complete graphics routine that can easily be inserted into a BASIC program of your own. Even better, the small size of these BASIC image routines lets any Amiga Artist store large numbers of pictures on disk, for huge slide show presentations. The sample SlideShow included with the Coder on this issue's AMIGA Plus Disk takes up only 40K and includes 15 pictures. In fact, a single floppy could hold Amiga BASIC plus enough code to generate 280 different images. That's a new picture every five seconds for 23 minutes!

Graphics created by BASIC commands have several advantages. Because the art code is part of your program, there is no need for disk access and no danger of extra files getting misplaced when the main program is moved. But in the past, if you ever tried adding graphics to an AmigaBASIC program using commands like LINE, PAINT, AREA, and CIRCLE, you know that the task of mapping x-y coordinates for even a simple image can involve hours of trial and error. Fortunately, thanks to BASIC Art Coder, those days of graph paper and guesswork are over.

Still, BASIC graphics have some artistic restrictions too. Since these BASIC commands deal with straight lines and broad, flat areas of color, don't plan on creating subtle airbrush effects. Instead, strive for economy and boldness. Because BASIC Art Coder records the instructions to draw an image, rather than a value for each pixel, you save memory (and drawing time) by limiting the complexity of your images.

However, there's no advantage to working small. The code to draw a 19-sided polygon that fills the screen is no larger than the code to draw a 19-sided polygon the size of a sprite.

Strong, direct artistic statements are the forte of BASIC ART CODER. Your image files are saved as compact BASIC routines, so you can fit several hundred onto a floppy disk.

Getting Started

To save disk space, BASIC Art Coder is stored on this issue's AMIGA *Plus* Disk in a compressed form. So you must first decompress it onto another disk that has AmigaBASIC in the root directory and at least 300 blocks free. All this is conveniently done for you by the MakeArtCoder script on this issue's disk.

First, click once on the MakeArtCoder icon in the main window of the AMIGA *Plus* Disk. Then hold down the SHIFT key and double-click on the disk or drawer where you want the BASIC Art Coder installed. The script will also copy AmigaBASIC from your Workbench Extras disk, if you wish.

After the BASIC Art Coder is installed, double-click on its icon and it will load and run. You can draw a picture using the various menu options to get a feel for how the program works. Except for circles and boxes, everything is designed as a series of straight lines. The lines are displayed in rubber band mode until you release the left mouse button.

When you've finished a simple drawing, select Stop from the Run Menu. The program will list itself. Locate the cursor on the blank line under the line that begins: RESTORE CODE. Paste your code into the program by selecting Paste from the Edit Menu, or by holding down the right Amiga key and pressing P. Run the program again, and watch your picture draw itself. Select Stop. Now highlight all the art code you just created and select Cut from the Edit Menu. Without saving, open EmptySlideShow. Find the first line that says "Replace this line with your art code." Highlight it and press BACKSPACE. Now paste in your code and run the program. Your slideshow has its first slide!

Notice how art code is mostly DATA statements. This makes it more compact, but certain subroutines and subprograms must be present in any program into which you paste the code. These are: areaXY, thinlineXY, thinSegXY, fatlineXY, fatSegXY, wboxXY, fboxXY, floodXY, paintXY, ditherOn, ditherOff, superOn, superOff, ramBMAPS, outlineOn, and outlineOff. The easiest way to handle this is to use BareBones or EmptySlideShow as the starting point for your own programs. List REMbones for more information.

Read through the following description of Menu Selections. But don't use Set Defaults or Clear Screen until you understand all your choices, and be careful with GET/PUT and Paint at this point.

Screen Menu

Set Palette — Displays a color requester. Click on the color you want to change, then adjust the levels of red, green, and blue by locating the pointer on the appropriate arrow and holding down the left mouse button. The Up Arrows give you more, the Down Arrows give you less. If nothing happens, you're at the maximum or minimum setting and you'll have to try the other arrows. You may adjust any number of colors before clicking on Use. Cancel resets all colors to the previous settings.

Outline Color On — Makes Areafills and Filled Boxes draw with

an outline of the color you select.

Outline Off — Turns off the outline.

Dither Color On — Lets you pick a background color to combine with the current foreground color in a checkerboard pattern. In higher resolutions the two colors merge, expanding a 16-color palette into a possible 136 apparent colors.

Dither Off — Turns the checkerboard pattern off and sets the background color to Color 0.

Superimpose On — Lets the background show through behind text. If Dither and Superimpose are both on, filled areas appear transparent.

Superimpose Off — Makes text appear on a strip of solid color. If Dither is on, the color of this strip is the dither color. If Dither is off, the strip is Color 0.

Screen Status — Tells you what resolution you're working in and how many colors are available.

Set Defaults — Lets you change resolutions, number of colors, and whether your windows have a full title bar or just a wire outline. It also stops the program. When you start the program again, it opens a screen with the specified characteristics. Remove any art code in the program before running it with the new default settings. If you keep running out of space when selecting higher resolutions, try clearing more memory by increasing the number in the middle line of the loader program "ArtCoder."

Clear Screen - Erases the screen and all the art code in memory. If you have art code pasted in at the top of the program from a previous session, that will re-draw itself.

Run Menu

Stop — This stops the program and lists it.

Draw Mode Menu

Set Color — Sets the foreground color. The number in the upper right is in the currently selected color.

Areafill — Lets you design polygons with 19 sides or less. If you attempt to design a polygon with more than 19 sides it will fill itself in when it hits 19. To make it easier to gauge your Areafills, the number of sides appears in the screen's upper right corner. When it gets close to 19, you should figure out how to get back to where you started by the time the number 19 appears. Or at least to a place where a straight line from there to your starting point will be acceptable. Drawing the polygon's last side is optional. If you don't, it will connect the last recorded point to the first recorded point.

The code for a 19-sided polygon that fills the screen is no larger than the code for a 19-sided polygon the size of a sprite.

Thin Line, Thin Segments, Fat Line, Fat Segments, Wire Boxes, Filled Boxes, and Circles do what you'd expect.

Floodfill — Fills the area you click on with the current color until it hits a border of any color.

Paint — Fills the area that you click on with the current color until it hits a border of the *current color.* No other color will stop it! If you accidentally fill in the whole screen with Paint, stop the program, paste in your code, then delete the paintXY routine. Run the program again and try using Floodfill instead.

Text Locate — Displays a text requester. Enter your words, avoiding the use of commas and quotation marks, and press Return. The text can be viewed in various locations as long as the left mouse button is held down.

GET/PUT — Lets you grab a rectangular section of the screen and stamp it down in other locations. As with Text Locate, holding down the left mouse button lets you position the section where you want it. Because of memory limitations, it is recommended that you don't GET anything much larger than a postage stamp. Doing so may lead to an Out of Memory error.

Extra Tips & Tricks

SPEED: Areafills, Lines, and Boxes are fast. Paint, Floodfill, and Circles are really slow. Even with complicated shapes, it's faster to use several Areafills than to draw an outline and fill it in. Use Fat Segments to clean up the seams.

OVER 25K: Programs can get big quickly when it's so easy to add graphics routines. AmigaBASIC programs which use more than 25K need a "loader" program. This is a small program that clears enough memory, then loads and runs a big program. On the disk, the programs ArtCoder and RunSlideShow are loader programs. You can use them as models for your own.

EDITING: For more complicated pictures, it's a good idea to stop periodically and paste what you've done into the Coder. When you do, be sure to paste it in behind any previous code. Editing art code requires an analytical approach. Always "comment out" before you amputate. DIM and ERASE statements should be handled with particular care, because a DIM may also apply to other GETs later in the code.

RESTORE: Since it's not uncommon to create a drawing in several sessions, the Coder doesn't automatically add routine names, RESTORE statements, or RETURNs. Adding these correctly remains the programmer's responsibility.

COMPILING: It is possible to compile a picture or slideshow program into a self-running program using Absoft's AC-BASIC compiler. The minor modifications required involve moving SHARED statements to the top of subprograms and removing the LIST command. The file RemBones has further details on this. ■

Steve Tiffany originally created and marketed the well-received BASIC Art Coder in 1988 for his Mojo Software company. He's a San Franciscan and the author of public domain programs Picture Garden and Season In RAM.

Super Disk Feature:

PHA$AR 3.0

The #1 award-winning personal accounting software— now yours on the AMIGA *Plus* Disk!

We're proud to bring you PHA$AR, v. 3.0 on this issue's AMIGA* Plus *Disk— by far the best value ever offered on any Amiga magazine disk! PHA$AR is the top personal finance program for Amiga and has won these awards:

☆ *#1 Readers' Choice, Amiga World 1988*

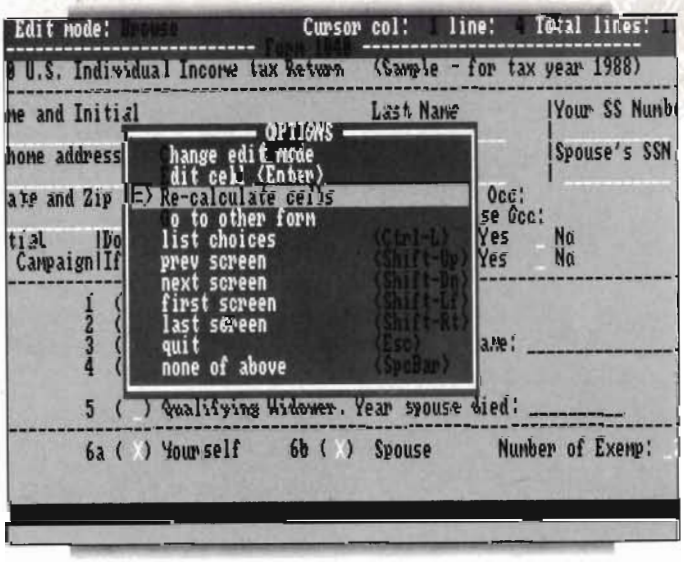
☆ *#1 Editors' Pick, Amazing Computing 1988*

☆ *Top Rating, Consumers Handbook, Fall 1989*

PHA$AR can help you balance your checkbook, start and keep a budget, figure your interest, or even prepare your taxes! PHA$AR can print your checks too, offering a flexible format that adjusts to fit various check designs. It also displays graphs of your money data and prepares reports analyzing your financial situation from various angles.

PHA$AR can track 130 categories, in 40 accounts and up to 500 monthly transactions. The program helps you cut down on typing by using an artificial intelligence parser to predict your input and letting you create macros for repetitive entries. PHA$AR includes an online calculator with five-level memory buffer.

The best-selling personal finance software for the Amiga, PHA$AR even has a module that prepares income tax returns from your data. We could only get the 1988 tax forms in time for inclusion on this issue's disk, but we'll try to get an update patch into the next issue.



Get Your 125-Page PHA$AR Manual

User-friendly online HELP is always available throughout PHA$AR 3.0. But because this program is packed with so many powerful features, to really get the most out of PHA$AR (especially the tax module) you should have the complete documentation! The PHA$AR 3.0 manual is more than 125 pages long, well-organized and clearly written, with a full index, a step-by-step tutorial and a quick-start guide.

Only a limited number of these PHA$AR 3.0 manuals are left. So you need to order *quickly* to make sure you obtain your copy. Your manual will be mailed within 24 hours after we receive your order.

While the supply lasts, you can easily get your PHA$AR 3.0 manual from AMIGA *Plus* for only $14.95 (plus $3.50 shipping and handling).

Phone Orders: Just call **(800) 234-7001** and ask for the PHA$AR 3.0 Manual - TH0237. (MasterCard, VISA and American Express charges only.)

Mail Orders: Send your check or money order for $18.45 to:

PHA$AR 3.0 Manual TH0237
Amiga *Plus*
544 Second Street
San Francisco, CA 94107

Not only that, PHA$AR is a powerful personal organizer, featuring a phone directory and appointment calendar. It can keep a list of up to 250 names, addresses and phone numbers. A Special Occasions list holds as many as 250 separate events through the upcoming year. PHA$AR acts as a mini-appointment scheduler if you use the User Preferences setting that displays upcoming occasions whenever the program is run.

PHA$AR works on all Amigas with at least 512K memory. This is a solid, bug-free program that's practically impossible to crash — it just beeps disapprovingly if you try to type in any unsuitable data. Antic Software has sold thousands of PHA$AR packages at $89.95. But now this remarkable software value is included on your AMIGA *Plus* Disk because the new and even more powerful **PHA$AR 4.0** is about to be shipped. (Version 4.0 is faster, tracks more accounts and categories, features hypertext searching and multiple scrolling windows — we'll review it in the next issue.)

Easy Start-Up

Because this award-winning software is over 800K big, you'll find PHA$AR on the AMIGA *Plus* Disk in compressed format. But it couldn't be simpler to decompress PHA$AR and install it on a freshly formatted disk, or in a directory on your hard drive. Click once on the MakePhasar icon in the AMIGA *Plus* Disk's main window, then hold down the SHIFT key while you double-click on the disk or drawer icon where you want to put PHA$AR.

Now you can start using the software by simply double-clicking on the PHA$AR icon. To fit PHA$AR on the AMIGA *Plus* Disk, we left out the sample home-finance data file usually provided with the program. So you will need to begin by creating a new file for your own data.

Online HELP Galore

Best of all, extensive online help makes PHA$AR extremely easy to use. From the title screen, every drop-down menu includes a HELP selection with good starting instructions. Anywhere else, you can call up a "context sensitive" HELP window explaining the commands that apply to your current status.

Whenever you're unsure of what to enter or what key to hit, just put your cursor on the cell or category you're unsure of, and press the HELP key, or F1, or the right mouse button for assistance. Again, don't be afraid to feel your way around and experiment with the program — PHA$AR is almost totally crash-proof!

In fact, you may find that the trickiest part of using PHA$AR successfully is simply remembering to type in every check, deposit and payment. PHA$AR does make data entry as easy as possible, with plenty of intelligent short cuts and defaults. And once your figures are entered, PHA$AR will effortlessly balance your checkbook.

'89 Tax Preparation

To run PHA$AR's income tax calculation program, double-click on the PHTAX icon in your PHA$AR disk's main window. This version of PHTAX contains simulated tax forms for 1988 — not 1989. At this writing, the 1989 forms were not available yet. However, we will try to include an updated 1989 PHTAX program on the next issue's AMIGA *Plus* Disk. Our April/May issue will be available early in March, giving you plenty of time before that April 15 IRS deadline. Also, it's not difficult for experienced spreadsheet users to change the cells controlling PHTAX forms — especially if you get the PHA$AR 3.0 manual, as explained below.

Please note that PHA$AR's PHTAX program only calculates the tax arithmetic from information you enter. It does not print finished tax forms suitable for submission to the IRS, and it does not advise you about tax strategy, or check the accuracy of your data entries. You, the user, are solely responsible for verifying whether or not the program's results are correct.■

ON DISK

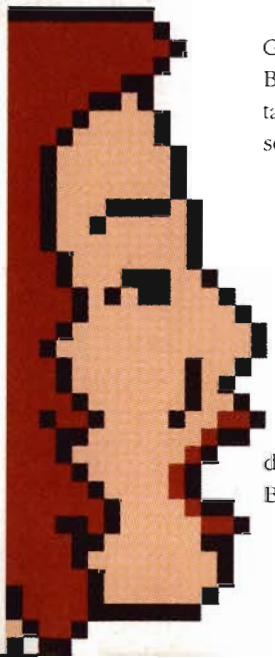
Special Disk Feature:

BallBench Game

Play the ultimate Pong while watching your Amiga at work!

By Aki Rimpilainen, AMIGA *Plus* Technical Assistant

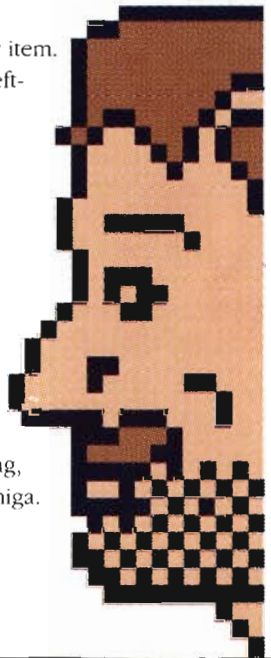
Silly, flashy, challenging, and highly original in programming conception — BallBench is a sort of fiendish Pong game where a male face and a female face hit an Amiga Boing Ball across the surface of your Workbench screen — or across the work-screen of most applications. Digitized Amiga speech and sound effects add to the manic mood. BallBench is an AMIGA* Plus *Disk feature that will be giving you playful computer breaks for a long time to come.



Get ready to play BallBench, the multitasking animation-and-sound Pong for the '90s. You can copy BallBench onto another disk, or onto a partition of your hard disk, by just dragging the entire drawer to its destination window. Now double-click on the BallBench icon and get ready. In a short while you'll see two windows open and a demonstration game starts.

For those not familiar with Pong, the idea of the game is to return the ball to the other side of the screen, hopefully past the other player. Every time you succeed in this, you gain a point. To win the game, you must be the first player to get 20 points.

Click once with the right mouse button to make your pointer visible. Locate the rightmost Control Menu on the Title Bar at the top of the screen and select the Mouse sub-item under the Right Player item. Then find the leftmost Title Bar menu, Project, and select New Game. Control the male face with the mouse, and you're playing the newest form of the oldest videogame, Pong, against your Amiga.



Adding to the general confusion of playing in front of your Workbench or application backdrop, the ball accelerates every ten seconds. Just keep calm, and try to hit the ball with the edges of the face to increase the angle of your return stroke!

BallBench is transparent to your operating system — you can run most applications while playing the game. *Just be careful with programs using sprites or the audio channels.* BallBench takes over three of the Amiga's four audio channels, and three of the eight system hardware sprites.

BallBench Controls

BallBench has three different play modes and a variety of controls that are all accessed through menus. There's a slightly unusual way of using them. First, you can access the BallBench menus *only* if the Score Display window is active! If this window isn't active, click on it once. Don't worry when the pointer disappears — this is programmed to happen so you can play without the pointer getting in the way. Whenever you need to make the pointer visible again, click once with the right mouse button. As long as the Score Display window is active, the right mouse button toggles the pointer on and off. You could actually use the menus either way, but a visible pointer sure helps.

The title bar has a selection of three main menus — Project, Mode and Control. Only two items are on the PROJECT MENU. The About item opens a small credits window, and New Game restarts the game without changing the current options. However, to begin a new game (or later, to change the play mode) the ball must be "playable" at the moment of selection. After a miss, while the ball bounces toward the center of the screen, your selection will be ignored *unless* you wait for the restoration of the action.

The MODE MENU controls the three play modes. The Direct mode is the traditional Pong, where the ball bounces across the screen following a direct path. This mode is usually the easiest for us humans. However, the following two modes are bound to get us in trouble. First, in Ping-Pong, the ball will randomly alter its course along the way. Next, Bounce adds the illusion of gravity to BallBench. The ball is now attracted to the bottom of the screen and truly bounces from one end to the other.

The CONTROL MENU at the far right of the Title Bar contains the various nuts-and-bolts selections. Left Player and Right Player also select the default controller type. The female face at left is controlled through the joystick port, and the right-side male goes through the mouse port. However, you can switch between both types of controllers by selecting either Mouse or Joystick under the Player Sub-Menus. If you are using a joystick, the fire button will speed up the movement of your face, to even out the odds against a mouse.

You can also select Keyboard. The keys for the female face are Q for up, Z for down, and SPACE for the movement boost. The male controls are on the keypad — 8 for up, 2 for down, and ENTER for the boost. Finally, selecting the Amiga sub-item gives the control for that player to the computer.

The Level Sub-Menu selects the skill level of the computer. Easy, Medium, and Hard just have the computer following the ball with ever-increasing speed. At the level of Crazy, the computer is quite perfect. Also, winning is somewhat more difficult with the female face because of its slimmer, smaller profile.

Through the Priority Sub-Menu, you can change the priority BallBench has within the Amiga operating system. However, setting the priority high does not make the game run faster. This selection is provided to compensate for the workload your Amiga handles while playing BallBench.

If you are running many other applications simultaneously, the movement of the ball could become jerky. In this case, try setting the priority higher. In contrast, if the system is not crowded, setting the priority higher might cause the ball to move irregularly. Usually, the zero setting is the best.

To experiment with priorities, open a CLI (or Shell) window while BallBench is running and display a large directory. Then repeat these steps with another priority.

The last item, Sound, simply turns the sound effects on and off. To exit, click on the Close gadget in the Score Display window.

BallBench History

The idea of making a Workbench Pong came suddenly one afternoon as I was putting together the custom Pointers drawer on AMIGA *Plus* Disk #4. Technical Editor Arnie Cachelin walked by and saw the checkerboard Boing-ball pointer, loaded it, and began "bouncing" it around the screen. We joked of making an actual BenchBall game. But later, as I walked out of the building, I began to consider the idea. What if I really wrote it, complete with animation and digitized sounds? The silliness of the idea began to attract me, and that same night the concept was down on paper.

Within a week, the skeleton of BallBench was ready. However, it was a few months later when I emerged with the final version of the code. The next stage was to put together the graphics and sounds. Here I must relay my deepest gratitude to Nicole Graveley, who patiently (usually) helped me with the art, modeled for me, and gave me her screams to sample.

BallBench was orchestrated using a variety of hardware and software. The program itself was written in the C language, using the Manx Aztec C compiler. For the graphics I used Electronic Art's Deluxe Paint III. The sounds were sampled with MichTron's AMAS, and edited in Aegis AudioMaster II. Finally, Innovatronics' PowerWindows created the menus and aided with windows. ■

ONELINER

BY DANIEL WOLF, Ph.D.

Handy little utility gives you multiple CLI macros

OneLiner is a useful Workbench-oriented Command Shell that doesn't scroll away your last command—so you never need to touch the keyboard to re-execute that last command. I sometimes use several little OneLiner windows running onscreen simultaneously to give me a few basic CLI commands instantly available with a single mouse-click.

Since we have the nifty Shell system of AmigaDOS 1.3, which can keep track of old commands and let you recall, edit, and re-execute them, why bother using OneLiner? One especially handy trick is to start a few OneLiners from a single Command Line Interface (CLI) or Shell. Then you'll get multiple OneLiner windows which all feed their output to a single CLI or Shell window. That's a real space-saver and time-saver for me and my friends who use OneLiner. For example, if you're doing repetitive COPY operations you can just edit the part of the command string you want to change.

OneLiner works just fine if you start it by double-clicking on its Workbench icon from the programming drawer of this issue's AMIGA *Plus* Disk. But it also works fine if you start it from CLI by typing: oneliner. That's because OneLiner combines AmigaDOS and Intuition programming. For programmers, the actual assembly language code listing on this issue's disk demonstrates how to make your own programs start both ways, too.

I wrote the original version of OneLiner when there was no Shell system, just the CLI. Re-typing every CLI command was a real pain, so OneLiner was born. I still find it convenient since I don't have to scroll back to find a previously executed command. You can use it to type in CLI commands and run them without any need for a CLI window.

OneLiner is small enough so that you can probably copy it from this issue's AMIGA *Plus* Disk into your C: directory, or (with icon) to your Workbench or other work disk.

Using OneLiner

When OneLiner is running you'll see a fairly small Intuition Window with a 40-character string gadget and a couple of command buttons to its right. When it first appears, OneLiner's string gadget says "Your wish is my..." An IntuiText of the word "Command" appears just to the right of the string gadget.

To get going, first click on the NEW button gadget at the far right to clear out the initial text in the string gadget. Then click on the string gadget area and type the sample command LIST DF0: and click on the EXEC button. After OneLiner runs a command, the command text doesn't scroll away. You can execute it again by just clicking on the EXEC button.

Where your sample DF0: listing appears will depend on how you started OneLiner. If OneLiner starts from its Workbench icon, it really makes two windows. You see the OneLiner Intuition window, but there is a hidden CONSOLE window of

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nearly the same size just behind it. OneLiner will use that little CONSOLE window to show the results of your command.

If you start OneLiner from CLI (or a Shell) then OneLiner just uses that CLI window to show the results. When OneLiner runs a command, the results must be displayed somewhere, so both alternatives are needed.

A neat feature of the Workbench-started OneLiner is that the CONSOLE window jumps in front during the command's execution so you can see what it's doing. (Actually, the OneLiner Intuition Window jumps to the rear.) The CONSOLE window opened from the Workbench is pretty small, so you may want to enlarge it to see long listings or other results.

You can also make slight changes conveniently by clicking on the string gadget and typing your changes. The string gadget shows 40 characters, but it really is 80 characters long. Click on the string gadget and use the right or left arrow keys to slide the command sideways — even offscreen.

OL: Man River

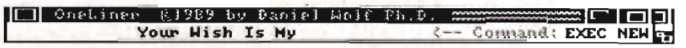
When OneLiner starts from a Workbench icon it needs to know what directory it came from. ASSIGNing it to SYS: as the OL: directory is a simple solution. When any program starts from a CLI or Shell, there's no problem determining the current directory of the CLI or Shell that it came from. Starting from the Workbench takes a bit more programming to let a program to know in which directory the icon resides.

I stuck with the simple means of creating the OL: directory as a shortcut. But you can ignore the existence of OL: entirely if you use full path names in all your commands. For example, suppose you just type LIST into the string gadget after starting OneLiner from the Workbench. What directory should OneLiner list? If you type LIST DF1: that problem doesn't exist.

I designed OneLiner so that it automatically ASSIGNs OL: to SYS: before it can respond to any of your commands. The ASSIGN of OL: to SYS: takes place only if you start OneLiner from the Workbench. Now if you start OneLiner from the Workbench and execute the LIST command in the string gadget, you'll get a listing of SYS:. Since all Amiga systems have a SYS: my solution covers all bases.

You don't need to leave OL: ASSIGNed to SYS:, though. You can type in your own ASSIGN command to change it, using OneLiner's own command string gadget. Or you can always just use full path names in all circumstances. All this only matters if you're using OneLiner from the Workbench. If you're running it from a CLI/Shell, OneLiner simply uses that CLI's current directory as its home.

You can have several ONELINER windows on-screen simultaneously for effortless one-click CLI macros.



Just remember that your C: directory or PATH list must contain both the command you're trying to use in OneLiner and the RUN command. The same requirement would exist if you're using a CLI to RUN commands. OneLiner uses the AmigaDOS Execute() Rom Kernel function. Don't confuse that with the other EXECUTE you use for script files. When you're programming with AmigaDOS, the Execute() Kernel function is the same as the RUN (CLI C: directory) command.

Program Take-Apart

Now let's see how the programming works. First you'll find a number of equates and macro definitions which make the job easy and let you assemble the program from a single file. You won't need any include files or link libraries.

This first part of the code listing demonstrates something I consider quite important in assembly language programming. You'll always do yourself a favor if you first set up macros and little subroutines to make the rest of your program code simple. After I prepare some handy Macros, I use them to help build small subroutines that simplify the rest of the code.

You can see an example of this with the REMEMBERCHIPMEM macro. It later plays a role in my small subroutine called MAKEAGADGET. The subsequent program code uses that subroutine to build the button and string gadgets nearly automatically. It frees me from the drudgery of laying out three complete gadget structures in the DATA section. This type of combined macro and subroutine makes both the program code and the assembled code smaller.

OneLiner sort of expands when it starts, allocating some memory for gadget structures on the fly. There are always tradeoffs in this type of programming. It might be pointless to make macros and subroutines do the work unless it is repetitive. Since there are three gadget structures to provide, the macros and MAKEAGADGET routine make sense.

I didn't do the same for the six IntuiText structures because individual handling of each was required. Since the IntuiText structures are only 20 bytes each, the overall savings using a subroutine to build them might be minimal. Gadget structures are bigger, so the potential for savings is greater. There is only one NewWindow structure, so there's no point in generating it algorithmically. OneLiner uses a hybrid of explicit structure data declarations and structures built by subroutines.

OneLiner starts by determining if it was called from the Workbench or a CLI/Shell, because the ending of the program (when you hit its CloseWindow button) must take that into account. After the setup of those two possibilities is processed, OneLiner proceeds to open the required libraries, open windows, and set up

gadgets. It performs the ASSIGN of OL: to SYS: if it was started from the Workbench. Then it sits in a WAITPORT condition and awaits your click on one of its gadgets. I almost always use the standard method of letting the program await a message at the Intuition Window's IDCMP message port. The identification of which button gadget has been pressed is even simpler than you might think. I simply let the MOUSEX value tell OneLiner which of the two buttons has been pushed. If you hit the CloseWindow button instead of one of the command buttons (EXEC and NEW), OneLiner will close down all the resurces it used during startup and vanish.

The code that handles the EXEC command button also checks to see if you ran OneLiner from a CLI/Shell or the Workbench. If you started it from the Workbench icon, then before it executes your command string it does a CD to the OL: directory. If you started from a CLI/Shell it skips over that change of directory. Once it makes that decision it prints out the command string you used and also the current directory choice (which is the same as OL: if you're running from the Workbench icon).

Big Finish

Please look carefully at the ending section of the code. An unusual construction there is absolutely necessary if you want to make Workbench programs. If OneLiner was started from the Workbench it absolutely must reply to the Workbench message it received at startup. Just before it replies to that message you'll see an isolated call to the Exec Library Forbid() Kernel function. The Forbid() function stops the usual ongoing process of switching between tasks that makes the Amiga a multi-tasking computer. You should only let that happen for a very short time or you'll ruin the multi-tasking. Usually you must have a subsequent call to the Permit() function to let the switching begin again.

This case is special, however. We don't want to use Permit() since the program is ending almost immediately. It would be pretty ridiculous (and likely to crash your Amiga) if the operating system tried to switch back to this program after it's gone! We absolutely must Forbid() the task switching operation during this final bit of cleanup and prevent the operating system from attempting to switch tasks at this critical time. After we reply to the Workbench message the Workbench system can forget our program is even there and we definitely don't want that to happen while task switching is in effect! Once we called the Forbid() function we can reply to the Workbench message safely and exit. ■

Daniel Wolf is the co-author of "COMPUTE!'s Amiga Machine Language Programming Guide" and an Amiga software developer based in Santa Maria, California.

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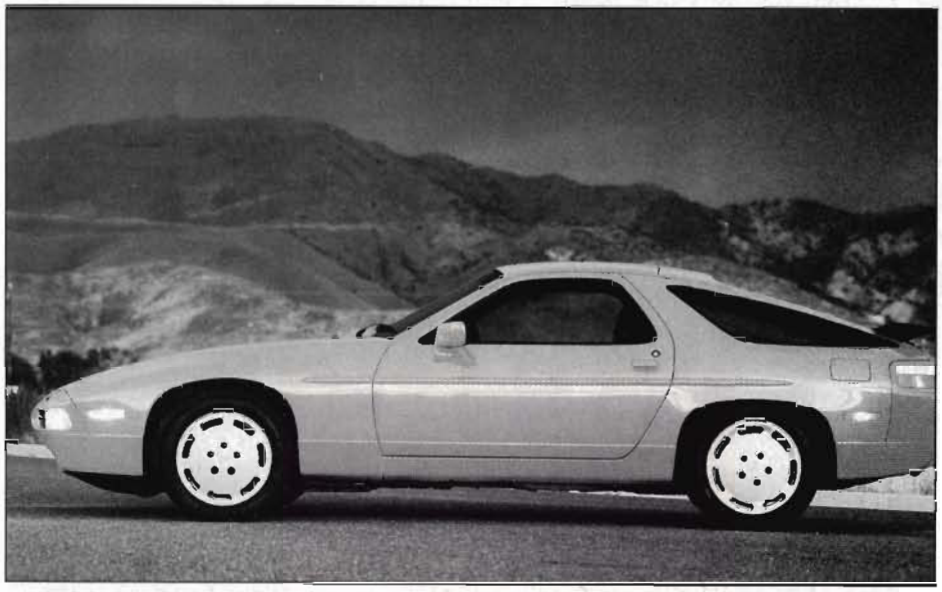

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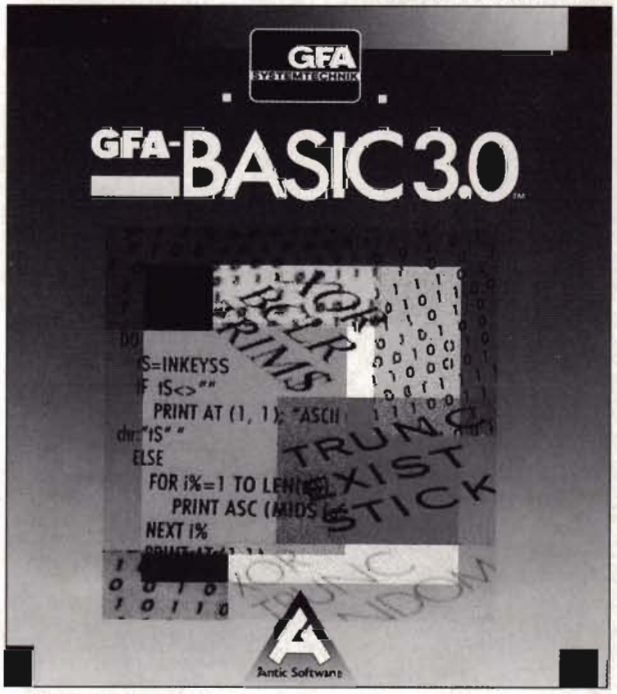

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More Tips & Tricks

A grab-bag of useful programs, clearly explained

REVIEW BY TODD PETIT

++++

Worthy successor to the original Abacus best-seller, but much more varied in its contents.

One of the best-selling Abacus books and already in its fourth printing, the original "Amiga Tricks & Tips" concentrated almost exclusively on AmigaBASIC. Now, **More Tricks & Tips for the Amiga** branches off into hardware hacking, machine language, the 68000 chip family and new features of Workbench 1.3. Although well-translated from the original German, this widely varied material is somewhat disjointed. But the book contains much valuable and clearly presented information for advanced BASIC programmers or hardware jocks. Despite the title, More Tricks & Tips is no book for Amiga novices.

The stated goal is to provide easily understandable, modular program examples that readers can use for their own programs. While generally brief, these programs are well-structured and have long, meaningful variable names. The examples help dispel some of the mystery surrounding the Amiga operating system for BASIC programmers. To get to the full power of the Amiga you must use library calls, and the authors do not shy away.

String gadgets are not considered in the book, but Boolean and proportional gadgets are covered in great detail, as are Borders, IntuiText, and the relationship between gadgets and the message port. How to set up the appropriate Intuition structures correctly is explained in clear and simple language. Included are some excellent examples of programming Intuition gadgets from BASIC. A full-featured, gadget-laden file monitor program is a major project, using code from previous program examples. You're then shown how to use the monitor for customizing programs.

A discussion of accessing AmigaDOS from AmigaBASIC is actually an in-depth study of dos.library, focusing on reading and writing files, random access within files, and dealing with disk directories and sub-directories. (DOS functions dealing with process handling are not included.) A program to create archival lists of disk directories ties this section into one single project.

Assembler & Hardware

The machine language chapter won't impart that much knowledge to you. But it does provide useful subroutines for DPaint-style color cycling, flickering the power LED and calling up the "ZZ" sleeping pointer. These are presented in both assembly listings and BASIC loaders. Concepts behind a "virus killer" program are thoroughly explained, but only terse comments about the program itself explain the code.

A lot of valuable information is packed into a couple of chapters dealing with the printer device and Preferences. Some attention is given to the new printer settings available in 1.3, but the big attraction here is a screen dump program. BASIC programmers can make a graphic dump of the current AmigaBASIC window, with full control over all Preferences printer options such as print density, aspect ratio, and centering. The Preferences option block is dissected and a BASIC program for changing its settings in memory is included.

There is a collection of obscure CLI, AmigaBASIC and printer features which you may not have seen documented anywhere else. Several of these are quite useful. More than once I found myself muttering "so that's how you do that."

The authors thoughtfully included a complete index and a number of very useful appendices. While DOS error message lists have been printed many times before, here they've been combined with a listing of CLI keyboard shortcuts, printer escape sequences and Guru meditation code explanations. I find myself flipping to this section repeatedly for reference. This is the only book in my library which includes Guru meditation codes. ■

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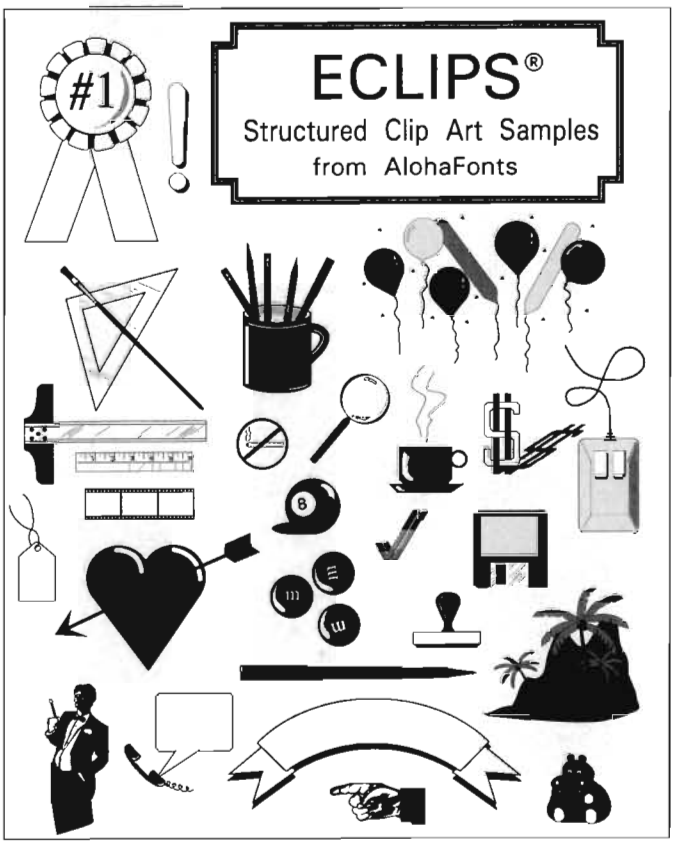
REVIEW BY RICHARD REPAS

++++

Excellent collection of more than 300 clean-edged pictures and borders for desktop publishing.

Many professional graphic artists recognize the Amiga as one of the quickest and easiest computers for transforming raw graphical concepts into color hard-copy. Still, one obstacle hindering the Amiga in graphic design has been the lack of vector-based "structured drawing" software that avoids the jagged edges of bit-mapped images. But with Gold Disk's release of Professional Draw, the Amiga market for structured clip-art was born.



No jaggies with the structured clip-art in the AlohaFonts four-disk ECLIPS gallery. Requires Gold Disk's Professional Page or Professional Draw. You can edit these images too.

One sound entry into this market is EClips, a four-disk collection of structured clip-art from AlohaFonts. You will need either Professional Draw or Professional Page to use EClips since the images are stored in Gold Disk's "clip" format. The package comes with a 28-page reference booklet containing printed examples of all the art clips — over 300 total — along with their names and on which disk the files may be found.

The clip files are cataloged by the name of the item they represent, and are placed in alphabetically named directories or drawers. For instance, numerous clip files of balloons are located in the B directory/drawer on disk one, Umbrellas in the T-Z directory/drawer of disk three, etc. Disk four, breaking from this convention however, consists mainly of various border and box treatments in a variety of decorative styles.

A number of clips use texturing schemes offering a variety of simulated tiling effects useful for page backgrounds. The broad selection of business-related clips contains ready-made sale banners, blank signs, monetary symbols and arrows for quick, easy point-of-sale signs or ad production. The blank grids provided can be used to construct graphs. There is a set of musical notation, numerous desk ob-

jects and calendar templates. Also included are various novelty objects, animals and balloons for that occasional card or invitation.

EClips art clips range from simple to very complex. Some offer only the simple object form, while others use

EClips images can be edited — unlike most other structured clip art for other computers.

many shades of gray and simulate glossy surface highlights. Since they are in Gold Disk's proprietary "clip" format, they can easily be enhanced or simplified to suit your needs. They can even be converted to IFF bitmaps using the ClipMap software on Gold Disk's own Professional Draw Clip Art software package.

AlohaFonts states that since most desktop publishing is done for use with one color of ink, Eclips images were designed specifically for black and white use. Even so, if color is what you need, the "clip" format permits adding it from Professional Draw. In fact, it's significant that EClips images can be be edited — an option often not possible with the structured clip-art sold for other computers.

Indeed, this ability to edit offers a distinct advantage. On other computer systems, the majority of structured clip-art available for import into desktop publishing and vector-based illustration/drawing software exists in the Encapsulated PostScript (EPS) format. This format, which at the very least is becoming a most convenient means to transport high quality PostScript text and graphics across hardware and software platforms —if not the de facto standard, has its disadvantages. Certainly, one problematic aspect is that once produced, the files are not meant to be changed. If one wishes to customize, or otherwise edit art clips supplied in this format, the process may prove difficult —if not impossible.

While much can be said about the need for a standard across different computer applications and platforms, I find the ability to edit and change quite indispensable. By providing these clip-art files in Gold Disk's proprietary format, AlohaFonts has left us the freedom and ability to edit and change, along with the option of exporting EPS format files for use on other systems. Whether you choose to use EClips art directly in your work, or choose to edit and enhance it to suit your own tastes or needs, I'm sure you'll find them simple to use, and a fine value.

An Aside On EPS Format

The fact that EPS files are transportable across computer "platforms" addresses a very real concern in professional graphic production. Because structured art is often complex, and therefore involves many hours of time — and expense — to produce, the result of these efforts *should* be easy to utilize on any desktop graphics system. Even though EPS has some limitations, it is at least an option worth having.

One inherent problem with EPS is the fact that it since it is PostScript, it only works properly with software which produces output for a PostScript printer. This in itself is not a serious limitation since PostScript is the language that drives most of the high-resolution page printers connected to desktop publishing systems these days. Still, non-PostScript printers can often produce some output if the EPS file contains a binary encoded bitmap of the graphic intended for onscreen display, and the software is "smart" enough to print that.

Problems with this often arise because manufacturers adopt varying methods for encoding the binary bitmap within the EPS file. Macintosh software mainly uses a format called PICT, while most IBM applications use the TIF format. Undisplayable EPS files, those with incompatible binary formats, or those missing the binary bitmap data completely, will be visible onscreen as a box crisscrossed with an X, and may possibly display information contained in the file header regarding filename, origination date and software.

While software applications are appearing for the Amiga that can produce EPS files, these files have no display bitmap encoding, and are undisplayable on the Amiga or other systems. To date, the ability to import EPS files is not a widely supported feature in Amiga software. PageStream can import EPS. Gold Disk has announced that the forthcoming Professional Page V1.3 will as well. The ability to import EPS will help to open many doors for the Amiga giving it near-equal footing as far as graphics interchangability is concerned.

If color is what you need, the "clip" format permits adding it from Professional Draw.

Still, I cannot help but feel that Amiga software developers are not going far enough in their support for EPS. Without some sort of encoded binary data intended for display, only those using Postscript printers will benefit from Amiga-generated EPS files. Even then, the nondescript "X box" will be the best representation one sees on screen. Perhaps some sort of conversion utility will someday fill in the gaps. ■

Richard Repas manages the Amiga section of Giraffe-X, a San Francisco desktop publishing service bureau.

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Protext

Text editor with many tricks up its sleeve

REVIEW BY SCOTT WASSER

+++ 1/2

It's a slick word processor, it's a hot program editor, it's got power to spare and lots of unusual features. Your efforts in learning Protext from a spotty manual will be rewarded.

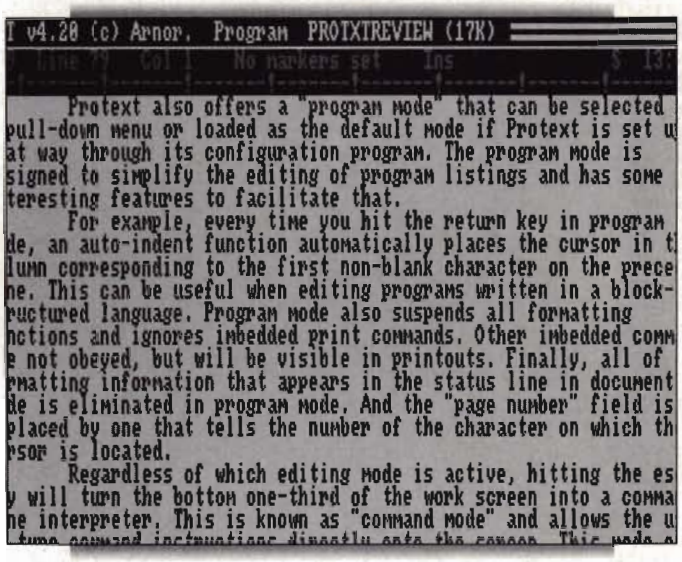
Computer users tend to treat their word processors like a pair of old sneakers. There may be newer, more fashionable and even more functional products on the market, but once you get comfortable with a word processor — like a pair of sneakers — it becomes hard to give up. I'm pointing this out because I believe MichTron's **Protext** is worth considering, even if you're perfectly content with the word processor you're already using. It has a few glitches, but overall it's an easy-to-use program packed with interesting and useful features.

In the approximately 20 hours I spent evaluating Protext, it became one of my favorite word processors. For the most part Protext is as good as I've seen when it comes to striking a balance between power and ease of use. The program comes on two disks and will run on any Amiga with a minimum of 512K. One disk contains two versions of the Protext program (one for 512K machines), printer drivers, a hard disk installation file, a spell checker for 512K machines, a configuration program and an addendum to the printed documentation.

The other disk contains various dictionaries, a program for converting Protext data files from other systems, help files and tutorials.

Upon loading Protext, you'll find yourself in "document mode." The default screen, essentially a typical Amiga window, completely covers the Amiga's main Workbench screen. At the top of the window, three status lines provide information about various program settings, including the document name, size, the time, whether justification and word wrap are on or off, whether the program is in insert or overwrite mode, and the number of text markers set. It also shows the cursor's location (page, line and column), current printer driver and whether Protext's Auto Format function is on.

PROTEXT is a word processor and program text editor with lots of unusual and useful features. This software can be just as straightforward or as complex as you want it to be.



Program & Command Mode

Protext also offers a "program mode" with some interesting special features, designed to simplify the editing of program listings.

Program mode suspends all formatting functions and ignores imbedded print commands. Other imbedded commands are not obeyed, but will be visible in printouts. This mode eliminates the status line's formatting information, and replaces the page number with the number of the character under the cursor.

Regardless of which editing mode is active, pressing the ESC key acti-

vates the "command mode," turning the bottom one-third of the work screen into a command line interpreter. Here the user can type command instructions directly onto the screen, or issue AmigaDOS commands.

Outstanding Features

You can activate features by using key combinations, pull-down menus, or by typing instructions directly in command mode. There's also a macro mode that allows you to easily "record" up to 128 specific operations and assign key combinations to them.

I was particularly impressed with the tools Protext offers for moving around within a document. Protext lets you specify a specific page, line and/or column, and instantly places the cursor there. If that's not enough, you can easily mark as many as 10 separate points within a document and move instantly to any one of them.

Most word processors feature a way to search for individual words or character strings, but Protext makes this feature particularly powerful by allowing the user to define no less than seven parameters for any search. You can search in any direction and search for, say, only the third occurrence of a given word or string.

Any document may contain its own format template, which specifies settings such as page length, continuous or single-sheet printing and margin settings. Protext loads this template automatically with the document.

512K Limitations

Supposedly, command mode also makes it possible to load and run other programs without exiting Protext. I can't vouch for that because whenever I tried to run another program from within Protext the program asked if I wanted to abandon the existing document. If I answered no, the program wouldn't load. MichTron technical support said 512K Amigas don't have enough memory to run another program, something that should be clearly pointed out in the Protext users' manual.

Other features didn't work quite the way the documentation indicated, also due to memory limitations on my 512K system. I could only produce the Help files by loading them in command mode, and using that method they're not context-sensitive. 512K machines show only a few text styles on screen. Boldface, italic and underline appear onscreen, while other special style attributes such as superscript and subscript are identified by imbedded commands.

Spell checking is supposedly quick and easy on systems with 1Mb or more of RAM. According to the documentation, individual words can be spell-checked as they are entered, or users can check blocks of words or entire documents all at once. The program supplies a main dictionary (36,000 words), a supplementary dictionary (34,000 more words) and a "quick dictionary" containing 250 commonly used words. Users can create their own dictionaries or add words to the quick dictionary.

Unfortunately, I can't tell how well that system works. On 512K machines checking a document requires quitting Protext and running the special 512K spell checking program from the data disk.

"Marginally" Superb

Margin manipulation is one of Protext's best features. A default (or templated) ruler shows left and right margins and tab locations at the top of the document window. However, users can literally type in new margins at any point in the document, and succeeding text will conform to the new settings. This makes it a breeze to indent or outdent blocks of copy.

A special feature allows tabs to be set outside the left margin, great for typing in numbered lines of text. Another feature allows the creation of special decimal tabs, which can make lining up columns of numbers a virtually automatic operation.

Protext also automatically sets footnotes as well as headers, footers and page numbers. The program can also automatically handle a wide range of mail merge functions, including selective and conditional text merges and insertion of times and dates. Data files for use in mail merges can be created, edited and stored with Protext.

A keystroke transposes letters in incorrectly spelled words such as "teh" or "thme." Other keystrokes will turn lowercase letters into capitals and vice-versa. You can "undelete" the last deleted word or string.

Finally, Protext has a built-in calculator function that supports the Amiga numeric keypad and allows the results of calculations to be inserted directly into documents being edited. A typewriter mode prints text as soon as you press RETURN, very convenient for addressing envelopes.

Mediocre Manual

Not nearly as convenient, the 317-page manual is relatively easy to read and fairly well-organized, but it contains some incorrect information, neglects to cover certain aspects of the program and has a very weak index. The incomplete index doesn't even refer to basic program features such as the calculator. Fortunately, Protext's intuitive operation makes it easy enough to learn that the manual's shortcomings can be overcome. A four-part on-disk tutorial helps.

Whatever effort you expend to use Protext will be rewarded. I'm willing to live with the inconvenient spell checker on my 512K system, and the mediocre documentation, to take advantage of Protext's many useful and powerful features. ■

Scott Wasser is a sports writer on the Wilkes-Barre, Pennsylvania Times-Leader.

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DOS-2-DOS

Effortless file transfers between Amiga, PC and ST

REVIEW BY PAUL DANA

++++1/2

This converter has been invaluable to the editors of AMIGA *Plus* since our first issue. We don't know of any other software that does a comparable job.

Central Coast Software's **DOS-2-DOS** ($55) runs on all models of the Amiga and transfers files directly to or from Atari ST or MS-DOS disks. Running this program magically transforms one of your disk drives — so you can insert an MS-DOS or Atari ST 3.5-inch disk into it and copy the disk files freely among any other drives you have connected, including RAMdisks or hard disks.

DOS-2-DOS is essentially a CLI (Command Line Interface) with a limited set of commands. It is very easy to learn, especially for users who already take advantage of the Amiga CLI, or have used MS-DOS. It is not copy-protected, so you can put it on your Workbench disk or hard drive, which makes it very convenient to use.

When you run the program, it opens a nearly full-size window into which it writes its messages and prompts. DOS-2-DOS is operated entirely by typing commands at the prompts. It does not use the mouse or the Intuition interface. After opening the window it prompts you for the name of the disk drive to be used for MS-DOS/Atari ST disks. This can be any 3.5-inch disk drive or any 5.25-inch external disk drive. Unfortunately DOS-2-DOS does *not* work directly with the internal 5.25-inch disk drive on the Bridgeboard-equipped Amiga 2000.

Only one drive can be specified as the MS-DOS/Atari ST drive, and while using it this way it cannot be used for Amiga disks. This means you need a different drive for your Amiga files. If you do not have another floppy drive you can use the RAMdisk or a hard disk.

The most common use for this program would be transfering plain old ASCII files to be viewed, edited, typeset or printed on a different computer. But DOS-2-DOS is useful for many other purposes as well.

This software can transfer IFF picture files between the Atari ST and the Amiga. Popular ST graphics programs such as Spectrum 512, DEGAS Elite, and CyberPaint can read and write picture files in the Amiga IFF format.

Numerous commercial software titles are released in multiple versions for the Amiga, the ST and the PC. Software developers who write for more than one of these computers can use it to translate source code. DOS-2-DOS would be especially useful for programmers who cross-compile Amiga programs on MS-DOS machines.

The manual is very well written. First, it states simply what the program does and does not do. Then it tells you how to run DOS-2-DOS, how to quit and how to get online help. At this point most users will probably put the manual down and never pick it up again, ignoring the many good examples that follow. Like all developers should, Central Coast Software includes a READ.ME file with DOS-2-DOS that lists known bugs and how to avoid them. In this case there are only a few. For example, it will not work with an accelerator board active.

Topping it all off, DOS-2-DOS comes with an extremely durable plastic case that houses the master disk and the manual. So the advice to "keep the original in a safe place" is not an empty statement here. I only have two complaints. First, although the manual is well written, it is set in an irritatingly small typewriter font with no margins to speak of. I am glad it only needs to be read once. Second, "make directory" and "format regular Amiga disk" commands would be nice. Both of these can be accomplished with the Workbench or CLI, of course, but they would be convenient to have.

But overall, I like DOS-2-DOS very much. The price is quite reasonable and the product does exactly what it claims to do. ■

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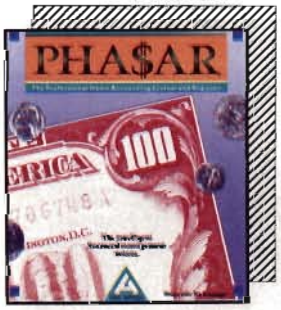

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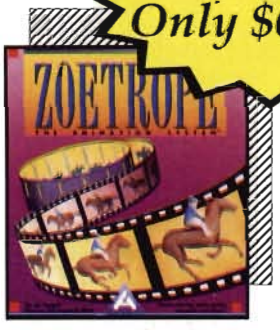

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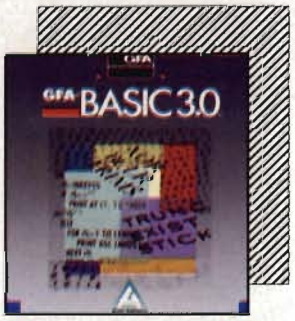

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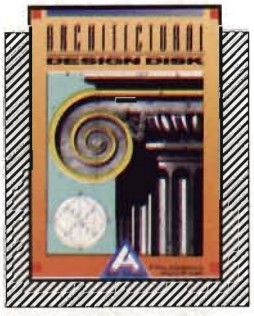

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CIRCLE 005 ON READER SERVICE CARD

Boing Mouse and X Windows

Two significant products from an Amiga pioneer

REVIEW BY STEVE CARTER

These two related — and highly advanced — products come to us from none other than Dale Luck, who was a key member of the original Amiga design team. Dale has now started two companies: Boing! is responsible for the Boing Mouse and GfxBase handles software and hardware relating to X Windows.

BOING MOUSE

Is your mouse sick or dead? Are you tired of continually cleaning that little rodent? Maybe it's time to move up to the state-of-the-art in Amiga mousing — the **Boing Mouse**, $125 from Dale Luck's Boing! company.

Unlike the standard Amiga mouse, the Boing Mouse is optical, with no moving parts to get gummed up. The Boing Mouse comes with its own pad — not of common rubber or cloth, but rather a very fine grid over a mirror-like surface. Optical mice use LEDs (light emitting diodes) to track the grid on their special pads. The Boing Mouse also has three buttons. Why? We'll explain in the second section of this dual review/preview.

Cushioned by two bottom strips of short-pile felt, the Boing Mouse moves very smoothly over its pad. It moves slightly less freely than the Amiga mouse, but it has no plastic corner runners to catch on the edge of the mouse pad like the Amiga mouse does.

The Boing Mouse is warranted for a year and Dale feels that the LEDs should last at least five years. The pad also appears sturdier than the usual type. Dale offers replacements

Dale Luck's X-WINDOWS is the Amiga version of a widely used graphic interface protocol that gives the Amiga transparent connectivity to most mainframes and workstations.

in different sizes. But since optical mice are a workstation standard, compatible pads are available from a variety of sources. The mouse also comes with one page of instructions, which is all you'll need.

The Boing Mouse's pad consists of a very fine grid over a mirror-like surface.

I had to "tune up" the mouse buttons on my early Amiga 1000 a couple of times. The way that the button was physically linked to the switch inside the mouse led to breakdowns caused by wear and tear. The mouse always felt just the slightest bit spongy or sluggish. I used mice from an Amiga 500 and a 2000 and I think they're even worse.

The Buttons on the Boing Mouse have a superb tactile and audio response. You know without question whether you actually clicked on an icon. This becomes especially important when you use graphics programs. With my old mouse, I would often have trouble telling whether I had laid down that brush, but not any more. The superior switches used in the Boing Mouse will certainly last longer than those in the standard Amiga mouse.

X WINDOWS

With Dale Luck's **X Windows**, the kind of work once possible only on mainframe workstations will become available to the Amiga. X Windows grew out of MIT's need to be able to use and share graphics data on machines from different manufacturers. Users of graphics workstations can share resources via a LAN (local Area Network) or wide area networks. X Windows was adopted as an ANSI standard, the rights to which are held by the X Consortium, a group of workstation and related equipment manufacturers. Anyone who wishes to implement X Windows may use it. The current release is X11, which Dale's GfxBase company is using for the Amiga.

X11 runs on a standard Amiga monitor in overscan mode. It will support Commodore's forthcoming 2024 monitor, which has a monochrome resolution of 1008 x 1024 pixels. X Windows fits right into the Amiga environment, appearing in its own screen and allowing for continued multi-tasking.

X Windows has its own specialized terminology, with such terms as clients, X Server, Xlib and X Protocol.

Three-button mice are a graphics workstation standard.

An X Server is simply the machine or workstation using a program, the program being a client. Clients can reside in the same machine as the X Server or be on a host machine. That's where X Protocol comes in. A graphics description language, X Protocol is the standard to which the Clients adhere when communicating with the X Server. Xlib is a library of functions relating to graphics and windowing.

X11 will include the clients xcalc, uwm, xpr, xclock and many more. Briefly, xcalc is a calculator, xclock is a clock, xpr is a printer control program supporting printers through Preferences. Uwm, a window manager, acts as a sort of traffic cop for windows, like a combination of the Amiga's Intuition and Workbench.

LANs are certainly critical to X Windows' ability to function. A Local Area Network lets users communicate and share resources (storage devices, printers, etc.) through a group of linked workstations or personal computers. These networks usually cover a relatively small area, about 550 yards in diameter.

Communicating via a LAN such as ethernet, an Amiga could run clients from Crays, DECs, IBMs or Suns. On the Amiga and other personal computers, ethernet requires an expansion card. An ethernet card is available for the Amiga 2000 and an Amiga 500 stand-alone version is reportedly in the works, both from Ameristar. Alternately, DECnet is supported via the serial port.

On an A2000 with Commodore's 68020 board, X-Windows has been benchmarked faster than a Sun 3/50.

Dale's Amiga X Windows uses a three-button mouse — which explains why the Boing Mouse has three buttons. Three-button mice are a graphics workstation standard. Virtually all the major computers use them, including VAX, DEC, Sun, Cray and more. The left and right buttons are sometimes used as foreground and background drawing pens, while the center third button can be used to bring up menus. Depending on the program, the buttons can perform many functions.

X Windows, running on an Amiga 2000 with Commodore's 68020 board has been benchmarked faster than a Sun 3/50. Pre-release copies of X11 are available, with a free upgrade to the release version included. The list price is $395. For those eager to get into the X Windows System, GfxBase even sells the mouse, X11 and an A2000 ethernet board as a package deal for $1,299. ■

BOING MOUSE	$125
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CIRCLE 166 ON READER SERVICE CARD

Gravis MouseStick

The ultimate programmable joystick offers mouse emulation

REVIEW BY AKI RIMPILAINEN, WOLF GRIFFEY and CAROLYN CUSHMAN

+++ 1/2

The advantages of having a programmable joystick with a responsive, comfortable feel and viable mouse emulation make the expensive Gravis MouseStick a joystick for serious gamers (or mouse-haters) to consider.

(The MouseStick arrived just as this issue was going to press. The following review was assembled by Associate Editor Carolyn Cushman from the test notes of Technical Assistant Aki Rimpilainen and Antic Software Product Manager Wolf Griffey. This first section of comments comes from Aki. — + Editors)

The **Gravis MouseStick** is an ultra-programmable $129.95 joystick that can also replace the standard Amiga mouse for most applications — although you might not want to use it for serious drawing in graphics software like Deluxe Paint III.

Physically, the MouseStick comes in two parts. The Processing Unit is the "brain" of the joystick, a box containing programmable settings and a small LCD display. The stick's cable plugs into the Processing Unit, which in turn connects to one of the joystick ports of your computer — adding nicely to the tangle of cords on your desktop.

The MouseStick's basic configuration can easily be switched between Amiga or Atari while turning on the computer. Next, the LCD advises you to center the stick and then press a button to confirm the centering (although the stick is usually centered automatically).

It's a mouse, it's a joystick. It's the programmable GRAVIS MOUSE-STICK that's just the ticket for a wide variety of games and applications. You can optimize the action for all your favorite software.

At default setting the MouseStick functions as a mouse. As I grabbed the comfortable stick handle the mouse pointer began to move, following my hand movements almost perfectly. Opening drawers and clicking on gadgets took some practice, but was easy once I got used to the stick. The joystick takes much less room than a mouse pad, you can use it on your lap if you want to, and it even has a six-foot cord for free movement.

Overall, the MouseStick was quite convenient, and it presents a genuine alternative to the mouse. However, I like to move a mouse and have the pointer follow that movement. The MouseStick did not quite give me that feeling of exactness. So I still prefer the mouse for most productivity and graphics applications.

Program Settings

Next I tested the MouseStick's programmability. To get to the editor you simply press the lower base button four times rapidly and then hold the button down. The editor presents

seven menus, each with numerous submenus, all displayed on the LCD and selected with the stick and the buttons. You can choose mouse or joystick mode, and determine how the stick reacts to movement. Also, the stick buttons can be programmed to perform different actions when pressed, such as altering the stick control mode. While in the editor, the stick movement does not affect the pointer.

For games and flight simulation, the MouseStick's control is hard to beat.

Generally, using the editor is easy and soon becomes routine. The manual is worth its weight in gold when exploring editor options. There are so many of these options that it could take some time to find the optimum settings for a particular program.

Four custom setups can be saved and recalled, even after the power has been turned off. The physical attributes of the stick can also be customized. The resistance of the stick is changed by rotating a wheel at the base of the unit. With its moulded handle and buttons mounted on the left, the stick is distinctly right-handed, but an adapted version for left-handers can be custom-ordered.

Grand for Games

I switched to joystick mode to test the MouseStick with games, beginning with Hybris, a fast shoot-'em-up from Discovery. It turned out that Hybris expected to find its joystick in the second port, presumably so that users wouldn't need to remove the mouse from the first port. This meant I had to switch the MouseStick into the second port — and go through the entire mode setup all over again. However, once this was accomplished, the MouseStick handled the action very well. It has a strong, solid joystick feel and responds quickly (the responsiveness can be reprogrammed). I was surprised to find that a stick precise enough to emulate mouse movements was also capable of handling the heavy strain of a shoot'-em-up. I programmed the rapid-fire rate to match the maximum firing rate of the game, which improved my score.

Next, I tested the stick with Taito's Qix to see how it worked with more precise movements. Again, I was impressed with the solid feel of the stick. However, I entered the editor mode accidentally a few times by hitting the base fire button rapidly and then holding it down in the heat of action. Later I avoided this problem by using the thumb button at the top of the stick.

(For a more specialized look at the MouseStick's use with flying simulations, we turned to former military pilot Wolf Griffey. His comments follow. — + EDITORS)

Flying High

I find the Gravis MouseStick both superior and quirky. Superior in that it really excells as a controller for games and simulations — whether the program was designed for mouse or joystick. The quirky aspects come from all the possible programmable setup and user modes available, items such as: X and Y Axis modes, Auto Centering, Vectoring, Direct Tracking and Turbo modes. The MouseStick gave me improved control just using the pre-programmed modes, but it could get even better with settings customized to take advantage of a specific program's features. With time, I will probably make custom setups for all the programs I use regularly and that require quick, sure handling. This will take an investment of time for experimentation, however.

I thought that mouse emulation seems to have finer, more precise controls than the joystick. I flew Lucasfilms' Battlehawks 1942 and Spectrum HoloByte's FALCON in mouse mode, and found the MouseStick a definite improvement over the regular mouse. Stick and mouse modes in FALCON gave more-or-less equal control. With F-16 Combat Pilot I flew in joystick mode only, and found the control to be excellent. An analog joystick, the MouseStick offers a full 360-degree range of control, as opposed to the maximum eight directions of the more common digital, or switch, joysticks.

I was surprised that a stick precise enough to emulate mouse movements could handle the strain of a shoot-em-up.

On the other hand, I would not go for the MouseStick simply as a mouse replacement. Using a stick just to point-and-click would lose its novelty very quickly. I also tried the stick with art programs, and found the altered point-and-click system hard to get used to. Freehand drawing is definitely more difficult. With a lot of practice the MouseStick might give more control than a mouse (Gravis recommends it for CAD and desktop publishing), but I suspect most artists would find it frustrating.

For games and flight simulations, however, the MouseStick's control is hard to beat. If you enjoy a little action now and again, and have wondered, "Is there a stick that really works?" or, "Why can't they make this thing work with a stick?" Gravis has a high-tech answer for you. ■

GRAVIS MOUSESTICK $129.95
Advanced Gravis Computer Technology, 1602 Carolina St. #D-12, Bellingham, WA 98226. (800) 937-0062.
CIRCLE 224 ON READER SERVICE CARD

GAMES GALAXY

Archipelagos, Shufflepuck Cafe, Space Quest III, SimCity, Shadow of the Beast, Fiendish Freddy's Big Top O' Fun

ARCHIPELAGOS

+++ 1/2

A uniquely eerie, other-worldly strategy game featuring sharp graphics, convincing 3-D movement and a truly unusual story. But eventually the 9,999 worlds start to seem too much alike.

In Britannica's **Archipelagos** each level consists of an island chain (archipelago) made up of colorful squares.. You seem to float over these islands, jumping from square to square with a click of the mouse. You must remove the deadly black obelisk dominating each archipelago. But first you must destroy all the large stones scattered about the islands. All it takes to destroy a stone is a click of the mouse — *if* land connects the stone to the obelisk. If not, you must build land bridges to connect them, while avoiding the strange animated plants and creatures infesting these islands.

Despite the simple objective, some tricky maneuvering and strategy can be required in this truly unusual and refreshingly non-violent game. Dramatic graphics, eerie sounds, animation and convincing 3-D movement bring the islands to life.

Viral Trees creep towards you, poisoning the land as they move. Whirling "banshees" careen across the islands. Most annoying, the gruesome Necromancers eat away at your land bridges as you build them.

Every fifth world presents a special challenge. Frequently amusing, these worlds come in odd and unexpected shapes — pigs, portraits, mazes, maps and more. Once past level 100, the last of these special worlds, players may choose to visit any of the 9,999 worlds, and scout around for a particularly intriguing setup.

With so many worlds to play in, few players will run out of worlds before they lose interest. In fact, after level 100 the similarity of the worlds can get more deadly than any viral tree. Still, the strange "Twilight Zone" atmosphere makes this an engrossing and highly original game — and the worlds all vary enough to keep real strategy fans coming back for more.

— CAROLYN CUSHMAN

Weird lifeforms abound in ARCHIPELAGOS, all animated and most deadly. None presents a serious threat as long as you remember to keep moving — but they can make life very difficult for you as you hunt down and destroy the polluting stones and obelisks.

SHUFFLEPUCK CAFE

++++

Slam-bang air hockey simulation where your opponents are the bizarro denizens of a "Star Wars" cafe! The AMIGA *Plus* staff can't get enough of this one.

A computer version of air hockey is such an obviously good idea (sort of an ultimate Pong) that it seems strange nobody ever thought of it before. And Broderbund's "Star Wars cafe" setting provides just the right kind of bells and whistles to make **Shufflepuck Cafe** an easily addictive experience even for Amigans who normally don't spend much time playing games.

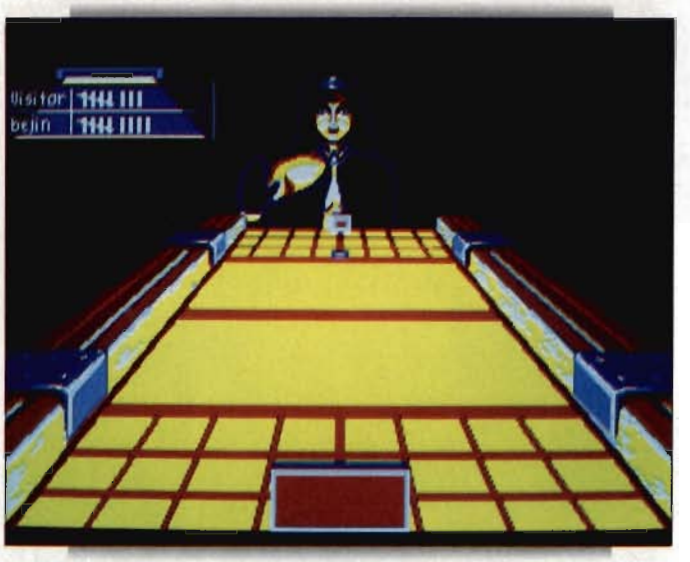
Shufflepuck Cafe puts you into a bar at the seedy end of the galaxy, where a diverse crew of mutants and miscreants are intent on only one thing — beating all comers at an air hockey variation called shufflepuck. After you select a player, the game screen comes up and it's your serve.

Shufflepuck is a 15-point game played on a long wooden table with rails along the sides and open ends for the goals. Players face each other from each end of this table and slam the round steel puck towards the opposing goal. For novice shufflepuckers, a programmable training droid is available to get you started.

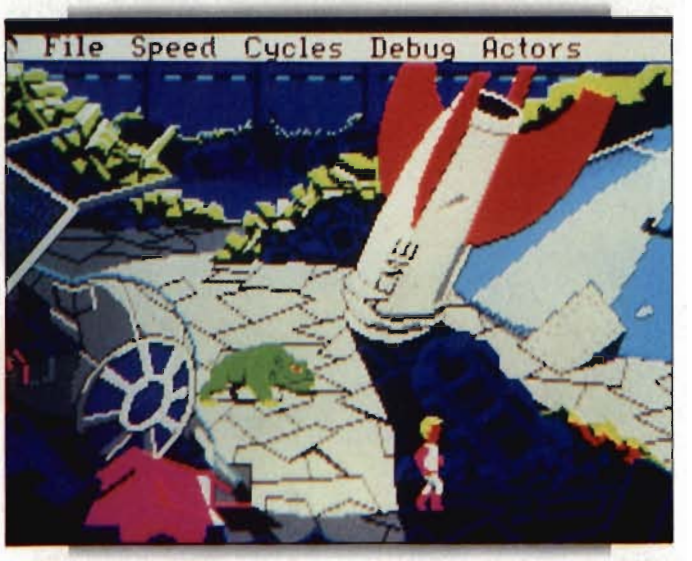
The stereo smacks of puck on paddle are nice, but the shattering glass sound/animation at each new score is a masterstroke, giving a gratifying feeling of power and destruction as a reward for slapping the puck home. The opponent characters continue their little gestures, grunts, grins and grimaces during the game, adding to the sense that you are facing real (and malicious) players. These creatures all have different playing styles and weaknesses, so you must adjust your strategies to keep winning.

After you have practiced the game enough to beat some of the better players, it's time to advance to the Tournament level. Here you challenge opponents of increasing skill until you are defeated or beat the reigning champion. Tournaments can be loaded and saved so that you don't have to beat the first few (bad) Shufflepuck players every time.

If you ever get too good for all the players (ha,ha), the droid can be programmed to be quite a foe. You can also choose to play with a "blocker" which will bounce back and forth on the center line. Adding a blocker changes the game entirely, but the regulars at the bar are already used to this new game, and they are good.
— R.F. NOYES



The mysterious Princess Bejin prepares her infamous magic serve in this seedy 25th century SHUFFLEPUCK CAFE. It takes skill and concentration to win, so don't be distracted by any alien pulchritude.



Amid the junk of the galaxy, Roger Wilco begins his daring SPACE QUEST III to rescue two programmers from a fate worse than death — writing video games for Scumsoft.

SPACE QUEST III

+++

Sierra Online makes further advances in its quest for state-of-the-art Amiga sound and graphics. Funny, playable adventure that's not overly hard.

Even more than earlier games in the Space Quest series, **Space Quest III: The Pirates of Pestulon**, incorporates text commands with excellent graphics and animation and sound. The game provides a playable, although not too difficult, action adventure, most suitable for less-experienced gamers.

Adrift in space our hero Roger Wilco is picked up by a passing garbage freighter. Roger must then escape the freighter, as well as Arnold the Annihilator, to whom he owes 400,000 buckazoids. You can guide Roger around the screen using the mouse, arrow keys or the number pad.

All other commands are typed in. The parser allows multiple commands, but you must word your commands exactly right. And even as you struggle to find the right phrasing, things continue to happen on the screen.

The animation is well-done and smooth, and there's superb sound effects. Excellent soundtrack music was written by Supertramp's Bob Sieben-

berg. The price you pay for this outstanding animation and sound is the huge size of the game. It comes on four disks, and each new room must be loaded from disk — which takes quite a while from floppies. Fortunately, Space Quest III is not copy-protected, so you can store it on your hard drive, cutting the load time considerably.

All the Space Quest series have some silliness, but Space Quest III is the most outrageous of them all, laced with jokes and off-the-wall humor. Still, if you ignore the graphics, sound and animation, this is essentially a text adventure. You must solve puzzles and second-guess the parser, getting killed lots of times while doing it, loading the same graphics and watching the same animations many times. But if you love adventure games, or wonder what the excitement is all about, I highly recommend this game. — DAVID PLOTKIN

SIMCITY

++++

Unique simulation challenges **you to control a city. Underlying concepts are difficult to grasp immediately, but the intriguing realism makes it hard to put away.**

All of us have aspirations. My personal quest, world domination, has always seemed a bit out of reach — until I booted up **SimCity** and got a taste of absolute power. Your goal is to keep a city alive and prosperous. Your first decision is whether you set up shop in a pre-designed metropolis such as San Francisco, or create your own world. A recently released $19.95 SimCity Terrain Editor gives you even more creative power.

Once you choose a city, you lay the infrastructure (residential areas, power grids, transportation lines) while the program adds people, cars, pollution, and crime. If things start running a little too smoothly, you can try your skill at managing a disaster, such as an earthquake, flood, tornado, or Godzilla.

Operating the mouse-driven program is simple. The editor window is used for modifying the terrain and constructing improvements. The main portion of the display contains an overhead view of the land, while various options line the right border. Click on the bulldozer to clear the land, drag the utility pole along the screen to lay power lines. This portion of the program is very easy to learn. Just go wild, laying roads, establishing residential and industrial zones, building airports, stadiums, police and fire departments. Just remember that, as in real life, nothing is free.

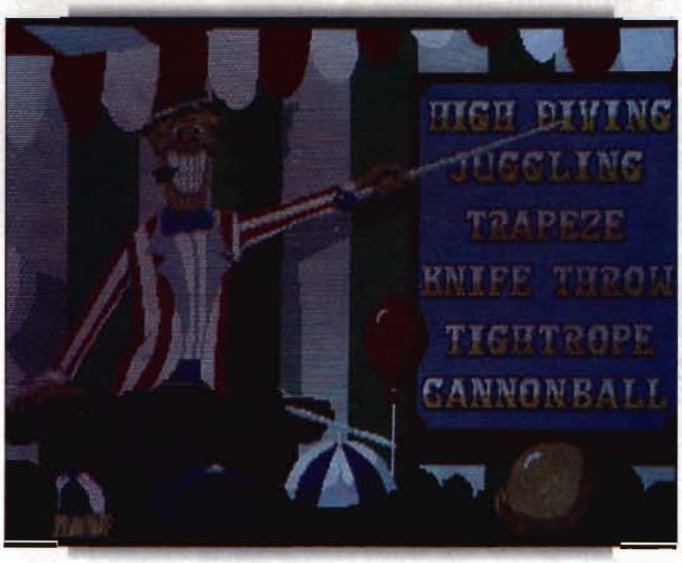
The budget window appears each year and displays your city's tax rate, as well as your allocations to police and fire protection and transportation. Bulldozing a section of land costs $1, while building a nuclear power plant will set you back $5,000. Cleaning up a disaster like a meltdown can cost even more.

The evaluation window tells you how well you are doing. Public opinion rules, informing you when crime has reached unsatisfactory levels, or that traffic is unbearable.

Rounding out the package is a 50-page manual that leaves nothing to

Unleash floods, tornados, Godzilla and, yes, even earthquakes on those urban commuters unlucky enough to inhabit your SIM CITY — or build parks, shops and condos for them — or both.

To save the Big Top you need $10,000 and a complete mastery of diving, knife throwing, tightrope walking, juggling, and getting shot from a cannon. But watch out for FIENDISH FREDDY, or your dive might turn deadly!



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guesswork, and includes a brief history of city planning, providing some mistakes for you to learn from. All in all, SimCity is well designed and intriguing to play. I'm just not sure I'd want to live there. — STEVE PANAK

SHADOW OF THE BEAST

++++

3-D breakthrough in multi-plane parallax scrolling, wildly exciting gameplay, incredible visuals and music. A new Amiga gaming benchmark.

"As the mist clears, the eerie image of a forest forms in front of you..." You are about to embark on a stunning, state-of-the-art computer game! **Shadow of the Beast**, released by Psygnosis, takes Amiga multi-bitplane scrolling graphics to their fullest potential yet.

To give you some idea of the effort put in by the incredibly talented Reflections design team (Ballistix), the game's two disks deliver: 350 screens using 128 colors, 15 areas of high speed multi-level parallax scrolling with 3-D like results, 2.2 megabytes of graphics and 900 kilobytes of sound and music, 132 terrifying monsters, and artwork by Roger Dean of Yes album cover fame. To fully appreciate the dazzling beauty and sound of this joystick masterpiece, ideally you should play it on a high quality large-screen RGB monitor and a great stereo system utilizing a subwoofer and surround sound.

In Beast, you were kidnapped as a small child by evil Beast-Mages (shades of Crowley!) and transformed by potions into a powerful creature who serves as a messenger of the Beast Lord. Your memory suddenly returns when you see your father sacrificed and now you realize that your only path is one revenge!

This incredible, yet incredibly difficult, game starts in the forest as you battle huge bats, boulders, large jumping eyeballs, dragons and even cute but deadly snails. I've only gotten far enough into Shadow of the Beast to realize that I may well be playing it into the next century and loving every second of it!

The graphics are absolutely brilliant & incredibly detailed. The music is very well done & reminiscent of Peter Gabriel & Vangelis. Game play is not only very exciting, but so fascinating visually that it's almost distracting! — IRA CORD RUBNITZ

FIENDISH FREDDY'S BIG TOP

+++ 1/2

Colorful, cute and original circus event game pits you against a sinister clown saboteur.

Fiendish Freddy's Big Top O' Fun is the best "event" game that I've seen since Epyx's line of Olympic simulations. The story behind Fiendish Freddy is that you have to earn $10,000 to prevent an evil banker from taking over the circus. Clown judges award a dollar amount in each event based on your performance. I only earned $5,000 the first time I played a full three-disk game — and I had practiced for an hour.

All six circus events are challenging and fun — High Diving (easiest), Juggling, Trapeze, Knife Throw, Tightrope and Cannonball (hardest). Playing the six events involves moving the joystick in various positions, aiming and keeping full control over your on-screen representative competing in the event. The cartoonish graphics are beautiful and the sounds are well-placed throughout. The music aptly reflects the colorful circus atmosphere.

To trip you up during the game (and to give Fiendish Freddy its title), the banker has sent a sinister clown named Freddy to throw knives, cut trapeze lines, drop bombs and stop you from finishing events successfully. He does a good job, too!

Outwitting Freddy involves moving quickly in the events before he appears and keeping your cool when he does. You can practice the events as often as you want and you can have up to five players in one game, all trying to meet the $10,000 mark. I had looked forward to seeing Fiendish Freddy for a while and the wait was well worth it. — RUSS CECCOLA ■

MANUFACTURERS

ARCHIPELAGOS $39.95
Britannica Software, 345 Fourth Street, San Francisco, CA 94107. (415) 546-1866. Minimum 512K, lookup copy-protection.
CIRCLE 159 ON READER SERVICE CARD

SHUFFLEPUCK CAFE $39.95
Broderbund Software, 17 Paul Drive, San Rafael, CA 94903. (800) 521-6263, (415) 492-3200. Minimum 512K, copy-protected.
CIRCLE 160 ON READER SERVICE CARD

SPACE QUEST III $59.95
Sierra On-Line, P.O. Box 485, Coarsegold, CA 93614. (209) 683-6858, (800) 344-7448 (orders only). Minimum 512K, not copy-protected.
CIRCLE 162 ON READER SERVICE CARD

SIM CITY $44.95
Maxis Software. Distributed by Broderbund, 17 Paul Drive, San Rafael, CA 94903. (800) 521-6263, (415) 492-3200. Minimum 1Mb, copy-protected.
CIRCLE 163 ON READER SERVICE CARD

SHADOW OF THE BEAST $49.95
Psygnosis Limited. U.S. Distribution by Computer Software Services, P.O. Box 483, Addison, IL 60101. (800) 669-4912. Minimum 512K, copy-protected.
CIRCLE 164 ON READER SERVICE CARD

FIENDISH FREDDY'S BIG TOP O' FUN $49.95
Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062. (708) 480-7667. Minimum 512K, copy-protected.
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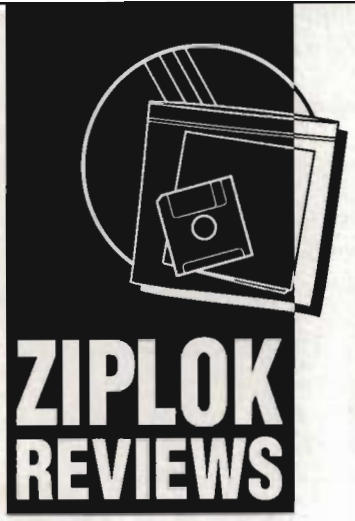


New column covers off-beat Amiga software — the kind that comes in a plastic bag

By Guy Wright, AMIGA *Plus* Contributing Editor

Not every software publisher out there has the money to place big splashy ads in the magazines, take giant booths at all the shows, or package their products in fancy boxes. But that doesn't mean that they haven't spent a lot of time and effort developing their products. Review sections often skip this "ZipLok-bag" software — because the packaging doesn't look "professional" enough, or because the products are too unusual to fit into a nice, neat category. However, sometimes you'll find a real software treasure in a plastic baggie. So this new AMIGA Plus column will look inside some ZipLok packages each issue and judge the software on its own merit.

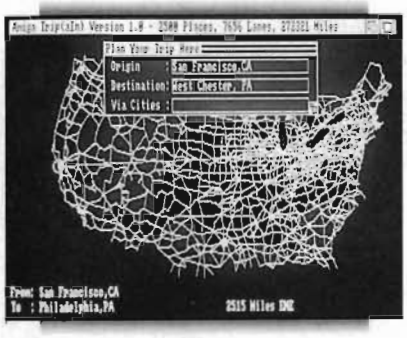
Trip

+++

Travel route planner does what it claims to do and does it pretty well.

A very straightforward, simple, and easy-to-use program, **Trip** performs a unique function. Basically an interactive, intelligent map, it provides you with information about traveling around the U.S. and southern Canada — much like AAA. When you boot the program it shows you a U.S. road map. A simple requester box appears for you to type your starting point, destination, and any cities you might want to pass through on your way.

The program then calculates the best route to take and outlines it for you on the screen. You can then display the list of roads on the screen, or print out a complete itinerary which



Trip

includes a short paragraph about each leg of the trip — route numbers, directions to go at each turn-off, estimated travel times, distances, and mileage to nearest cities not on your route. A zoom function lets you look at the map in detail. The long version of the program also includes information on local radio stations, toll roads, national parks, demographics, resorts, scenic drives and more.

The only potential problem is that the program may not be up-to-date on local secondary roads. Trip only performs one task but it does it very well. You may not use this program every day but it can be invaluable for the times that you do need it.

Sky Shepard Software is a small company that started out about seven years ago with software for the Commodore 64. Since then they have branched out to other machines like the IBM and Amiga. Trip is the first Amiga program they have done and they expect to have updates to the program on a regular basis. There is a professional version in the works.

TRIP $39.95 (short version)
$49.95 (long version)
Sky Shepard Software, P.O. box 49, St. Marys, IA 50241. (515) 280-7208.
CIRCLE 234 ON READER SERVICE CARD

Enigma Device

+++

I would rate this program as a KLK (that's PGP for pretty good progam) that is EWS (that's LOF for lots of fun.)

The Enigma Device was a diabolical machine used by the Nazis in World War II for encrypting secret messages. The machine generated supposedly un-crackable coded messages that required another Enigma device to decipher. The British did, however, figure out how to crack the codes and perhaps this helped win the war.

The Enigma Device game is based on code cracking. You don't have to beat an Enigma generated code (thankfully) or the game would be nothing more than a giant frustration. All the codes are simple letter substitution codes, or cryptograms.

For example, every "A" might be an "X," every "B" might be an "R" and so on. The game displays each phrase in coded form with spaces under each letter for your guesses. As you move the cursor over a letter, all the same letters are highlighted. When you guess a letter, all the same letters are filled in below the coded phrase. By changing around your letter guesses you begin to fill in the blanks. If you get stuck you can cheat (only once per puzzle).

The program includes over 1,000 cryptograms and you can add your own. When you finish a puzzle, the program tells you how many seconds you took. It can keep track of up to 20 players, including performance history and statistics. While solving cryptograms may not be everyone's idea of fun, it turns out to be very addictive. If you want to spend an hour or two exercising your brain rather than your joystick then the Enigma Device is definitely worthwhile.

Brian King also publishes the $49.95 Integrated Calculation Engine (I.C.E.) which easily simulates any kind of calculator you could imagine. He recently moved his company to the Philadelphia suburbs from Sioux City, Iowa.

ENIGMA DEVICE $39.95
King Publishing, 5300 Greenvillage Road, Chambersburg, PA 17201. (717) 261-0512.
CIRCLE 235 ON READER SERVICE CARD

Interactor

+++

I give this program an "interactive" rating. It's easy to interact with, and looks like it would be good for creating interactive applications.

A hypermedia authoring system, **Interactor** lets you mix graphics, animations, sounds and text to create an interactive database. While it does not use menus, windows, icons or gadgets, the interface makes it very simple to create scripts without ever having to touch the keyboard. Everything that you need to create your scripts is onscreen at the same time and uses a file folder/stage production analogy. You can load backgrounds (sets) and objects (actors), choreograph their actions, transitions and states. The more than 30 event types include things like sampled sounds, collision detection, and even gravity effects.

As you add events and object movements you build a script. More advanced scripts can be developed as ASCII files with any text editor. You could even create video games with the system.

One of the nicest features in Interactor is its ability to trigger events in a wide variety of ways. You can trigger events by mouse clicks, keyboard, collisions between objects, or simple timing. The program works in all resolutions and includes an animation editor and a text editor. It also has laser disk support. Animation is done with the blitter or with sprite animation so everything is very fast.

The interface is extremely easy to use and Interactor gives you some very powerful options. Two minor cautions — the program uses a dongle (key) protection system and also is not 100% finalized as of this writing — but the company plans to keep people updated. If you are interested in hypermedia but have been frustrated by some of the other programs that are out there you might consider taking a look at Interactor.

Vivid Produce grew out of Very Vivid, the creators of Mandala. The founder, Francois MacDougall, has been working with the Amiga since 1985 and while Interactor is officially the first product under the Vivid Produce name they expect to be doing more (including stackware for Interactor) soon. ■

INTERACTOR $99
Vivid Produce, P.O. Box 127, Station B, Toronto, Ontario, Canada, M5T-2T3. (416) 537-7222.
CIRCLE 236 ON READER SERVICE CARD

TAROT MASTER

+++

If you fool around with tarot reading from time to time, or are new to the tarot, you have probably experienced the frustration of trying to remember the meanings of the 78 cards in the deck. Now, Tarot Master from Empire Graphics greatly simplifies reading the cards. The program "shuffles" the cards while you concentrate on a question. Click the mouse to stop the shuffle, and the program presents either a three-card or ten-card spread (your choice), with brief explanations of each card and the significance of its position in the spread. As always, the final interpretation is up to the user.

With imagery similar to that of the familiar Rider-Waite deck, Tarot Master recreates the colorful cards onscreen. A menu allows the user to call up individual cards and their meanings one at a time. Amusing but somewhat amateurish animations accompany each Major Arcana card. Fortunately, these animations are optional — on a single-drive system each animation requires disk swapping. Though not copy-protected, the program won't run from a hard drive.

In some ways Tarot Master lacks polish, but I suspect that the authors were tarot readers first and programmers second. The readings perform excellentl y, and while software will never replace a deck of cards, Tarot Master provides a quick and easy way to learn the cards and read them for your own entertainment.

— CAROLYN CUSHMAN

TAROT MASTER $29.95
Empire Graphics, P.O. Box 964, Union, NJ 07083. (201) 964-7864.
CIRCLE 174 ON READER SERVICE CARD

Expert printing with Preferences 1.3.

Column by Curt Kass

You can often greatly improve the quality of your Amiga printouts if you thoroughly understand the printer setting choices available from the Preferences utility built into Workbench 1.3. Several very important printing parameters can make a world of difference. You'll find that just a few changes in your Preferences settings could result in output so much better that you'd think it came from a costlier printer.

Before you can manipulate Preferences effectively, you must understand the basic vocabulary of computer printing — for both color and gray scale. It helps to visualize **Color** as having three components:

Hue is the label specifically identifying pure colors like red and green, or mixed colors like greenish blue. Change a hue's value or intensity and technically the result is a different color.

Value refers to the lightness or darkness of a color. The white of the printer's page absorbs hardly any visible light, black ink absorbs almost all visible light, any mixture of these two will create grays of varying reflectivity. Science refers to this as degrees of brightness, but artists and designers call this value. Mixing color with the white page creates a **Tint**, raising the color's value. Adding black creates a **Shade** (sometimes called **Tone**), lowering its value.

Intensity, also called **Saturation** or **Chroma**, gauges the saturation, vividness, colorfulness and purity of a hue. Often confused with value and brightness of a hue, intensity will be higher as a color gets closer to its pure state. A low-intensity color has less hue and gets closer to a gray. Tints and tones have lowered intensity.

Gray Scale is the stepped mixture of black dithering percentages with the white background of the page.

Dithering is the patterning of color dots that the printer is instructed to use. Dithering positions the printer's ink dots appropriately to fool your eye into perceiving them as either a multi-color range or a gray scale. The dithering pattern is programmed — and Preferences 1.3's three dithering options have a significant effect upon the printed results.

Primary colors in art are your basic red, yellow and blue. In printing, this term sometimes refers to the basic ribbon, ink or transfer media hues you use — generally designated as Yellow, Magenta, Cyan, and Black (as in Process color). Many ribbon printers will use Yellow, Red, Blue, and Black.

Secondary colors are hues created by the mixture of two primary colors.

Dithered colors are composite colors created by a dithering pattern of primary and secondary hues and black on a white page background.

Density is the number of dots-per-inch printed. Higher densities produce smoother diagonal and curved lines and larger numbers of useful

"solid appearing" colors — because of tighter dithering patterns.

Density Decisions

The first setting you must decide is whether you want proof density or final print density. Many printers offer several density or dots per inch (dpi) selections. Your printer manual will list possible densities, and your Amiga 1.3 Workbench and Extras manual lists the printers supported by drivers installed on 1.3 Workbench and Extras disks. The Workbench 1.3 manual also includes information on the Graphics 2 Screen Density settings to select for each printer's supported dpi.

Various printer types require different settings. Generally, dot-matrix printers support several density settings, using a single pass of the print head for single density, and a second or third pass to achieve denser results. Multiple passes with overstriking do a good job of producing high-density, high-resolution type in black or any other single color. But ribbons often become contaminated during high-density multi-color printing, where one color prints on top of another. I would like to see someone come up with improved drivers that print each color in succession.

As a rule, higher Graphics 2 density settings provide more solid colors, gray scales and black solid fills. But you can go too high. Low density has some advantages. Dithering patterns are more pronounced, but on some printers low density gives you more color variations and gray scale gradations.

The best way to determine settings for your printer is to design a few test layouts with a selection of color swatches containing hues and shades of your printer's primary and secondary colors and, very important, a gray scale of 16 levels or more. The best settings for gray scale and color printing may not be the same.

AMIGA SLIDE OUTPUT

35mm slide transparencies have become a very important output media for Amiga artists and designers. You can now get your Amiga IFF images turned into 35mm slides through a number of services. So for this issue's column I decided to test four slide services that I've heard good things about.

I had each service process a disk of 12 IFF files. The files represented a full range of art and graphic design screens, with color, gray scale, and varied uses of type.

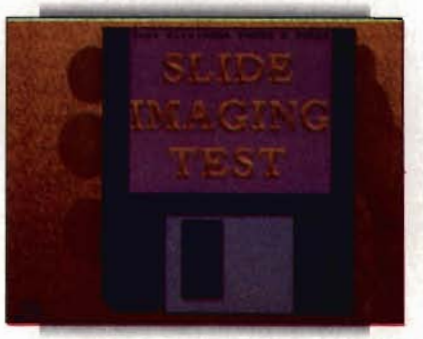
For comparison, I'm also showing you my own direct screenshot using Kodak Ektachrome 100 slide film. My slide distorted the original screen colors as follows — purple turned blue, the yellow is too intense, the browns are close but a bit over-saturated, and the gray turned bluish.

Tech 3

This service comes on strong with sophisticated technology and some stalwart techniques in their favor. Tech 3 slides do show a halo around some saturated pure hues, and horizontal and vertical image edge curvature was the most pronounced. One-pixel to three-pixel thick lines were noticeably thicker than with the other services, which to my taste helped Greg Johnson's familiar "Gorilla" image (seen in AMIGA *Plus* magazine and disk #3), as did Tech 3's excellent contrast range. The pixel thickness did not fare as well with Amiga single-pixel fonts. This pixel thickness is an excellent example of how some service results will be better for a particular type or style of image Tech 3 slides provided very consistent total results, and color reproduction most true to my original screen colors.

continued on page 89

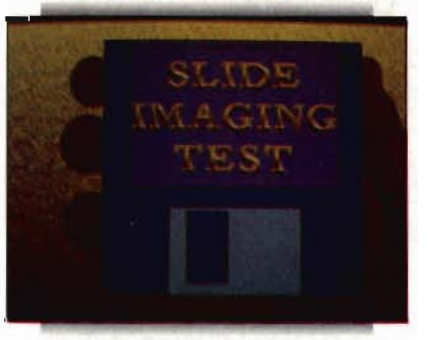
Tech 3



Hammond

ImageSet

Philadelphia Video Lab



Author's Direct Screenshot

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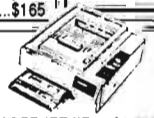

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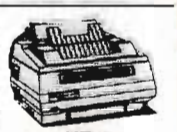

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CIRCLE 029 ON READER SERVICE CARD

Hammond Photo Services

An Amiga enthusiast and photographer, Kip Hammond offers the longest-lived Amiga slide service, plus helpful advice and guidelines. He "produces full-frame 35mm slides compatible with standard slide aspect ratio. Therefore, approximately 18 lines (hi-res), or 9 lines (lo-res) will be cropped from the top and bottom of your image. This allows your Amiga slides to be integrated into any standard audio-visual slide show.

The slides produced by Hammond Photographic Services rely upon a low-tech slide imaging system. The slide images are soft, yielding a slightly out-of-focus look, with colors having a dull quality, showing slight horizontal banding on some solid colors and haloing around saturated hues. Interestingly, Mr. Hammond shows knowledgeable control over his limited system as his slides provide very consistent color and contrast which comes close to original screen color. These slides fill a full frame providing the largest images and good aspect ratio.

Mr. Hammond clearly lets his customers know that his service is intended to support Amiga users desiring fast, economical, non-professional applications. If you have a lot of Amiga artwork you would like converted to 35mm slides as an efficient way to display your talents, this service still fills a necessary niche, considering 20 slides cost only $80, with duplicate sets for only $20 more.

ImageSet

ImageSet's proprietary software has recently been re-written and some earlier problems appear to be solved. This service previously had problems with HAM files, and the first slides I examined of high and lo-res images were inconsistent. However, now there is no halo effect in their slides, outside horizontal and vertical edges were most straight, and the one-pixel to three-pixel thick lines were very fine. This provided the sharpest image, unfortunately making pixelation more pronounced, a problem with images such as Greg Johnson's "Gorilla." Amiga screen fonts in small point sizes were very legible, and original screen color reproduction and overall saturation was very good. The image aspect ratio was closest to the original screen image.

Philadelphia Video Lab

Peter Lullemann is introducing his new Prosumer slide or print service, which equals the level of his respected professional services using factors like bulk order processing to lower consumer costs, hence a 10-day turnaround. (For more details on Philadelphia Video Lab, see Guy Wright's "Pictures from a Perfectionist" in the AMIGA *Plus* #4.)

Philadelphia Video Lab slides have a very distinctive quality. The single-pixel to three-pixel thickness lines appeared to be as fine as Tech 3's, but the enhanced, super-saturated colors increase the perception of solidness of the thin line work. Some haloing is evident between full saturation hues, but this effect is offset by the depth of the colors, which work together so well that the image appears crisper. These slides have presence, going beyond the original Amiga screen colors toward warmer, richer colors. To my eyes this all added up to the highest level of perceived "focus." Presentation graphics will gain strength, though some artists might not approve of the changed palette. ■

SLIDE SERVICE SPECS

TECH 3
1580 Boca Raton Boulevard, Suite # 9.
Boca Raton, FL 33432. (407) 368-6603
System used: Solitair film recorder, ImageLink (Active Circuits) software converting IFF to TARGA files which are imported into a VISTA board for 32 bit color processing.
Amiga Format support: IFF, HAM, Overscan, Sculpt Direct, Sculpt RGB, Turbo silver, and DigiView files.
Output offered: All files available as transparencies, negatives or 4x5 print.
Cost: $7.50 for 35mm slides. $15 for 4 x 5" prints.
Turnaround time: 3-4 days.
CIRCLE 220 ON READER SERVICE CARD

HAMMOND PHOTOGRAPHIC SERVICES
11280 Washington Place, Culver City, CA 90230. (213) 390-3010.
System used: Polaroid Palette film recorder, American Liquid Light's Imprint interface.
Amiga Format support: IFF, HAM, all resolutions except overscan.
Output offered: 35mm slides.
Cost: 1-2 slides $25 each, 3-5 slides $12 each, 6-10 slides $7 each, 11-20 slides $5 each, over 20 slides $4 each. Duplicate slides of any file, $1 each.
Turnaround time: Next working day after receipt of your disk.
CIRCLE 221 ON READER SERVICE CARD

IMAGESET
555 19th Street, San Francisco, CA 94107. (415) 626-8366.
System used: Samurai film recorder, proprietary interface and software, IFF to TARGA.
Amiga Format support: IFF, HAM, Overscan.
Output offered: All files available as 35mm slides. Write for info on additional services.
Cost: $6.75 per slide; minimum order $25.
Turnaround time: 3 days.
CIRCLE 222 ON READER SERVICE CARD

PHILADELPHIA VIDEO LAB
338 Winding Way, Merion, PA 19066. (215) 664-4955.
System used: Amiga 2000, proprietary interface, hardware and imaging techniques.
Amiga Format support: IFF, HAM, Overscan.
Output offered: PROSUMER 35mm slide or print service.
Cost: $7.50 per slide or 4" x 6" print per IFF file.
$10 per slide or 4" x 6" print per HAM file.
$5 per order set up charge.
Minimum order is three slides or prints.
Turnaround time: 10 days.
CIRCLE 223 ON READER SERVICE CARD

Artist/designer Curt Kass is the founder of Ontological Survey which provides consulting in all areas of computer graphics.

PrintPal

Multiple Preferences printing options the easy way!

By Aki Rimpilainen, AMIGA *Plus* Technical Assistant

The Workbench Preferences module controls a great variety of printing options. Many Amiga users modify these Preferences settings quite often for different hard-copy requirements — near-letter quality, drafts, color printing, black-and-white graphics, etc. Soon we find ourselves switching constantly between multiple groups of settings.

Unfortunately, AmigaDOS only "remembers" a single group of settings at one time. So we must painfully reset Preferences whenever we change these options, often while struggling to remember exactly which settings worked best last time.

To end this frustration, the AMIGA *Plus* Technical Staff created PrintPal. This convenient utility saves your current Preferences printer settings into a file which you can re-use anytime. You can create a variety of useful settings just by changing "normal" printer options such as print quality, margin settings, and pitch. However, the real power of PrintPal becomes apparent with the graphic options, which define settings such as the picture size, position, and dithering. Now you can print your picture file in different settings without the bother of resetting Preferences options one by one.

Using PrintPal

Using PrintPal from Workbench is fast and simple. First, save your current Preferences printer settings by double-clicking on the PrintPal icon. Then close the drawer where PrintPal resides, and re-open it to display the new project icon that PrintPal just created.

You now have a data file with your settings. The new icon is named PrtData.prt, so you should promptly rename it to a title that better represents its contents. For example, if your file sets Preferences to print a high-density picture file horizontally, an apt name might be "DarkHoriz.prt". An easy way to rename your files is provided by Workbench. Click once on the file, hold down the menu button, select RENAME from the WORKBENCH MENU and type in the new name.

Print your picture in different settings without the bother of resetting Preferences options one by one.

Now, to reset Preferences with the complete options in DarkHoriz.prt, or any of your other printer settings files, simply double-click on the icon of the desired settings file.

You should copy PrintPal from the AMIGA *Plus* Disk to the Prefs drawer on your WorkBench 1.3 disk, for fast access to Preferences. However, if you prefer to use the CLI (or Shell), you can also copy PrintPal into your C: directory. You can run PrintPal through the CLI (or Shell) by typing:
PrintPal, your option, and the filename for the data file.

This following command saves your printer settings into a file:

```
1> PrintPal S "filename".
```

To re-set Preferences with the data you have saved, type:

```
1> PrintPal L "filename".
```

The advantage of running PrintPal through the CLI is that you don't need to rename the data file after creating it.

Program Notes

PrintPal is a combination of program elements from our previous utilities GetPointer and PutPointer (AMIGA *Plus* #4) and Icon (AMIGA *Plus* #5). Like the pointer programs, it uses the Preferences structure as a source of data. Instead of saving the pointer image, it saves the printer information located in the last 106 bytes of the Preferences structure.

PrintPal's technique for creating icons is vastly improved over the earlier programs. GetPointer duplicated an actual icon file (DefaultIcon.info), which you needed to keep on the disk. In contrast, PrintPal has the icon INCLUDEd in the program as a DiskObject structure. Therefore, it is self-sufficent and easily copied to other disks or directories.

You can examine and change the DiskObject-related structures in the file PrtData.h, in the Programming drawer of this issue's AMIGA *Plus* Disk. (The listing was created with the Icon program.) Source code for PrintPal (PrintPal.c) is also located in this Programming drawer. ■

QUICK SHOTS

New column of brief game reviews

By Guy Wright, AMIGA *Plus* Contributing Editor

Aquablast

++ 1/2

In **Aquablast** your goal is to stop a mad tyrant bent on total world domination, by destroying three deadly toxin installations located in the South American jungle, the Middle East, and the Norwegian fjords (there is also a target practice scenario.) For some unexplained reason you can only get to these installations by racing along a twisting series of waterways in a high-speed jet boat. Of course, your boat comes equipped with missiles and machine guns, but as you would expect the enemy isn't going to make it easy. You'll face mines, gun emplacements, helicopters, submarines, planes, and boats, as well as floating obstacles and fuel drums.

You can use the mouse, keyboard, or joystick (the keyboard seems to work best) and the graphics are well done. If you weren't on water this might almost be a car racing game with guns, except that you can't run aground. When you hit logs or icebergs you get the thrill of seeing the boat fly into the air and there are occasions when you can run up on the steep banks to get around obstacles. The game is well done, but begins to wear thin after a short time.

Planet of Lust

++

The mad Dr. Dildo is squeezing the pleasure planet Erotica to death with a force field. You are Captain Brad Stallion, the virile commander of the space ship Big Thruster. By using the mouse to click on objects pictured in various screens or issuing simple commands via the keyboard you adventure though a series of puzzles. If you haven't figured it out by the title and names of the characters, this is an "adult" game.

Just fair, the graphics look like they were imported from an 8-bit machine, and while there is supposed to be an erotic feeling to the game it is nothing to get excited about. The graphics of naked women and softcore nature might titillate only the sexually desperate, but there is almost enough game play to make it interesting. Most women will find the game insulting, and most men won't want to be caught playing it, but as graphic adventure games go it might give you a few interesting puzzles and a chuckle or two.

Denaris

+++ 1/2

After an attempt to destroy a planet filled with evil robots fails, you and your DF-H75 Eagle Fighter are the only hope for the people of Denaris. You must penetrate the underground strongholds of the intelligent machines and destroy their main factory. You can pick up an assortment of weapons designed for maximum killing power along the way, and you will need every one of them. This game is pure arcade action, with great graphics, great sound, and complete sensory overload. You get no chance to rest your overworked joystick skills (which better be mighty impressive). This is one of the best shoot-everything-that-moves, blast, crash, and destruction, complete carnage, arcade games available for the Amiga.

Denaris

If you are into this kind of thing then you should own this game.

Titan

+++

In the year 2114, Professor Hybris created a mega-game, **Titan**. People have been scrambling to beat the 80 different artificial worlds hoping to win the prize. The "worlds" are really frictionless mazes filled with blocks, some to be destroyed and some deadly. You try to guide a power ball through the mazes with a block-shaped paddle. When the ball hits the right blocks they are destroyed. When the ball hits death icons you lose a life.

Don't bother to read the few pages of instructions, which are confusing, misleading and not even close to English. Other than that single flaw, the game is fun. The simple graphics are extremely well done and the scrolling

is unbelievably fast. Some of the screens are almost too simple while others seem almost impossible. A cross between Pong, Arkanoid, and Emerald Mine, Titan is fast and addictive. What more do you want from an arcade game?

International Championship Wrestling

++ 1/2

Hulk Hogan, watch out. There are four new challengers for the coveted championship belt. From the good ol' U.S .of A. comes Lance "Eagle" Do-Good, from China Kai-Leung "Killer" Kahn, from the USSR Ivan "The Bear" Trotsky, and from Cuba the mysterious "Bruiser" who currently claims the ICW belt. You can pick any of the first three to start, and if you work your way up you can challenge Bruiser for the title.

In this one or two person game you use joysticks to box, grab, Airplane Spin, PowerSlam, run the ropes, elbow smash, kick, Suplex, body slam, and perform all the moves you see on "professional" wrestling. The game is about as hokey as the "real" thing, complete with victory poses, secret weapons and dirty fighting. There are three difficulty levels plus a demo mode. When you first play this game expect to be beaten quite a bit. The graphics are fair and control of the wrestlers is a little sloppy, but with practice you can get better. There seem to be a few bugs in the version I played. (If you stand in just the right spot and keep the fire button pressed, your opponent won't attack you until your power gets back up to normal.) This silly and frustrating game will probably keep you playing until four in the morning or until your joystick breaks.

Lords of the Rising Sun

+++ 1/2

This game isn't really new, but is worth taking a look at. Set in 12th century Japan, your goal is to conquer the country and become Shogun. You do this by forming alliances, storming castles, defending castles, taking villages, sending out ninja assassins, marching, sailing, and resupplying. Like all Cinemaware games this one has wonderful graphics, music, and sound effects. In the challenging action sequences you storm castles single handed, defend castles with a bow from a window, command forces in the field, and chase down routed enemy troops on horseback.

The action sequences are all very well done but the nicest part of the game is the strategy. Unlike some other Cinemaware games this game requires some careful thought and planning. You control a number of

Lords of the Rising Sun

different forces, sending them to various towns. At times you can have four or five armies on the march with different destinations. You can even avoid the arcade elements by having the computer resolve the conflicts for you, so you can concentrate on the strategy. A combination of great graphics, good arcade sections, and planning, this is one of the best Cinemaware games yet.

Will Harvey's Zany Golf

++

Grab your putter and head out for the strangest miniature golf course you ever played. One to four players can try their hand at nine very odd holes. Using the mouse you control the direction and velocity of the ball as you navigate such hazards as pinball machines, bouncing hamburgers, and places where the laws of physics just don't apply. If you complete a hole using less than the allotted number of strokes the extras are carried over to the next hole (you will need those extra strokes to complete the course.) The graphics are very good and the course is fun, at first. The only problems are in the loading times for each hole and the fact that you can't go over par (if you do then you have to start all over again at the first hole) which makes it a little frustrating. I also wonder how much playability you will get from the game. It isn't bad but it isn't great either. ■

MANUFACTURERS INFORMATION

AQUABLAST $34.95
Elite, distributed by Keypunch USA Software, 1221 Pioneer Building, Saint Paul, Minnesota 55101.
CIRCLE 225 ON READER SERVICE CARD

PLANET OF LUST $39.95
Free Spirit Software, P.O. Box 128, 58 Noble St., Kutztown, PA 19530. (215) 683-5609.
CIRCLE 226 ON READER SERVICE CARD

DENARIS $39.95
Hard Wired (Gold Disk), P.O. Box 789, Streetsville, Mississauga, Ontario, Canada, L5L 1X2. (416) 828-0913.
CIRCLE 227 ON READER SERVICE CARD

TITAN $44.95
Titus Software, 20432 Corisco St., Chatsworth, CA 91311. (818) 709-3692.
CIRCLE 228 ON READER SERVICE CARD

INTERNATIONAL CHAMPIONSHIP WRESTLING $32.95
Avatar Consulting, 9733 Roe Drive, Santee, CA 92071.
CIRCLE 229 ON READER SERVICE CARD

LORDS OF THE RISING SUN $49.95
Cinemaware Corp., 4165 Thousand Oaks Blvd., Westlake Village, CA 91362. (805) 495-6515.
CIRCLE 230 ON READER SERVICE CARD

WILL HARVEY'S ZANY GOLF $39.95
Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.
CIRCLE 232 ON READER SERVICE CARD

Spirit AX-S, Pro Page 1.3, Art of Go, BGraphics, Rendition, TV*Text Professional, MaxiPlan-III, Distant Suns...and much more

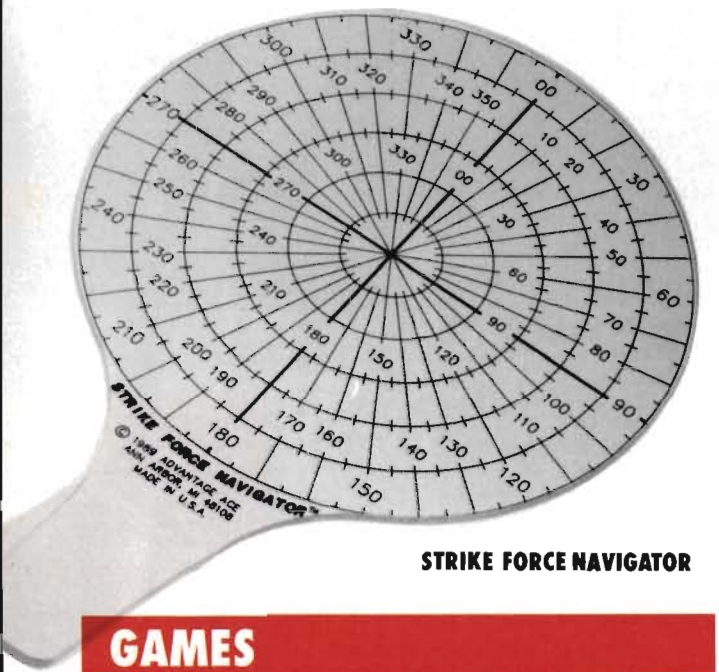
By Carolyn Cushman, AMIGA *Plus* Associate Editor

MIDI

Peggy

A hit on the C64/128, the **Peggy** MIDI Arpeggiator from Triangle Audio comes to the Amiga with new and improved features. Peggy takes your incoming MIDI data and arpeggiates any notes currently active, using patterns, tempos and repeats you can set yourself via mouse or keyboard.

$52.50, MIDI interface and output device required. Triangle Audio, P.O. Box 1108, Sterling, VA 22170. (301) 526-6224.
CIRCLE 176 ON READER SERVICE CARD



STRIKE FORCE NAVIGATOR

GAMES

Art of Go

The ancient Asian strategy game comes to the Amiga in A-Squared's **Art of Go.** A software tutorial and play book (approved by the American Go Association) make learning easy.

$49.95 A-Squared Distributions, 6114 La Salle Avenue, Suite 326, Oakland, CA 94611. (415) 339-0339.
CIRCLE 177 ON READER SERVICE CARD

Killing Game Show

You must save your world by winning a deadly TV game show in Psygnosis' latest seek-and-destroy epic. For a light-hearted touch, amusing alien advertising will appear between the contests.

$34.95. Psygnosis Limited, P.O. Box 483, Addison, IL 60101. (312) 620-4444.
CIRCLE 178 ON READER SERVICE CARD

OMNI-PLAY BASKETBALL brings all the on-court excitement and backroom strategy of real-life basketball into your Amiga.

Bride of the Robot

Space captain Brad Stallion of "The Big Thruster" takes off once again in **Bride of the Robot**, third in this series of adult graphic adventures. Rescue Miss Galaxy from Professor Wang's sex-crazed robot.

$39.95, 1Mb required. Free Spirit Software, P.O. Box 128, 58 Noble Street, Kutztown, PA 19530. (215) 683-5609.
CIRCLE 179 ON READER SERVICE CARD

Battle Squadron

Fight almost-invisible "chameleon" enemies in **Battle Squadron**, a unique 3-D futuristic gaming experience. Blast your way across alien landscapes in your space cruiser in this complex shoot-'em-up from the authors of Hybris.

$39.95. InnerPrise Software, 128 Cockeysville Road, Hunt Valley, MD 21030. (301) 785-2266.
CIRCLE 180 ON READER SERVICE CARD

Times of Lore

As a medieval hero-for-hire you'll face wizards, assassins and fearsome creatures in **Times of Lore**, a fast-paced combination of fantasy role playing and arcade action.

$39.95. Origin, 136 Harvey Road, Building B, Londonderry, NH 03053. (603) 644-3360.
CIRCLE 181 ON READER SERVICE CARD

S.S.I. Otherworlds

From Strategic Simulations Inc. come two new fantasies in the Advanced Dungeons and Dragons series. **Dragons of Flame** ($39.95) takes you and ten Companions on an action quest in the magical world of the Dragonlance game system. **Hillsfar** combines action and

adventure as you embark on a series of quests in the Forgotten Realms game world. ($49.95, cluebook $7.95.) For a science fiction adventure, **Star Command** ($49.95) lets you explore planets and space stations and even fight hand-to-hand or ship-to-ship combat as you try to save the galaxy from pirates and aliens.

S.S.I. Distributed by Electronic Arts, Gateway Drive, San Mateo, CA 94404. (800) 245-4525.
CIRCLE 182 ON READER SERVICE CARD

SportTime Simulations

Add the **College League Option Module** to your Omni-Play Basketball game, and you can lead any one of 64 top teams in the nation to lead through tournament play. Or add the new **Side-View** Game Option Module and enjoy the sport from a whole new perspective, leading the team as its Center at all times. ($19.95 each.)

Take a gamble on some exciting races in **Omni-Play Horse Racing** ($49.95). With up to four players, 128 horses at each track, variable tracks and jockeys, this complete simulation lets you play and compete in a Handicapping Tournament.

SportTime Software, 3187-G Airway Avenue, Costa Mesa, CA 92626. (800) PLAY-GAMES, orders (714) 966-1311.
CIRCLE 183 ON READER SERVICE CARD

Strike Force Navigator

Add accuracy to your navigation in any onscreen game that uses a map with **Strike Force Navigator**, a manually-held device of durable, transparent plastic, marked with a 360 degree navigation compass. Line up the Navigator with your ship or plane onscreen, and you can see at a glance that your target is 35 degrees to your right (or wherever). Compatible with all systems and software.

$7.95. Advantage Ace, 3542 Pheasant Run Court, Suite 8, Ann Arbor MI 48108. (313) 677-0732.
CIRCLE 184 ON READER SERVICE CARD

Targhan

Fight the Evil One to free your village in the strategy-action adventure **Targhan**, featuring a detailed plot, arcade-quality play, 40 different detailed characters and 120 landscapes.

$39.95. Star Games, 708 West Buffalo Avenue, Suite 200, Tampa, FL 33603.
CIRCLE 185 ON READER SERVICE CARD

Broderbund Bonanza

Hit the slopes at home with **Downhill Challenge** ($34.95) for the skiing experience of a lifetime as you test your skills at downhill racing, slalom, giant slalom and jumping. Or, fight your way over land, sea and air as Agent 007 in **Licence to Kill** ($34.95) , the latest James Bond thriller now brought to your computer. For shoot-'em-up thrills, check out **If It Moves, Shoot It!** ($29.95), chock full of spaceships and giant aliens to blast.

For a more educational diversion, Broderbund offers **Where in the U.S.A. is Carmen Sandiego?** ($49.95). This popular geography/detective game has been redesigned to take advantage of the Amiga's graphics, and includes *Fodor's USA* travel guide for reference. History buffs can replay the Middle Ages in **Joan of Arc: Siege & the Sword** ($44.95), a history-based action/strategy game. As in history, Joan fights the English and is burned at the stake, and then it's up to you as Charles VII to unite France.

Broderbund Software, 17 Paul Drive, San Rafael, CA 94903. (800) 521-6263, (415) 492-3200.
CIRCLE 186 ON READER SERVICE CARD

World Odyssey

Get to know your geography with **World Odyssey**, a colorful and creative game designed to teach geography through map puzzles and multiple choice questions about states, countries and regions. World Odyssey lets you make corrections to maps and questions, or even create your own.

$49.95. Other Guys, 55 North Main Street, Suite 301-D, P.O. Box H, Logan UT 84321. (801) 753-7620, (800) 942-9402.
CIRCLE 187 ON READER SERVICE CARD

ART

ProVector

A fast, structured drawing program, **ProVector** is the first release planned from the newly-founded Taliesin, Inc. Using unique dithering routines, ProVector simulates 256 colors on-screen at once. ProVector saves files in IFF or PostScript format, and can plot structured graphics to super-bitmapped files for extra detail in your bit-mapped graphics.

Taliesin, P.O. Box 1671, Fort Collins, CO 80522. (303) 484-7321.
CIRCLE 188 ON READER SERVICE CARD

Superb photorealism without the long, long wait for ray tracing. RENDITION does it with sophisticated algorithms that reproduce a vast library of effects.

Rendition

Numerical Design plans to make their image generation program, **Rendition**, available to end users. Currently available only to developers, Rendition creates state-of-the-art photorealistic imaging *without* time-consuming ray tracing, thanks to a scan-line algorithm. Images are originally produced in 24-bit color, and options include smooth shading, natural highlights, anti-aliasing, transparency, multiple directed light sources, textures, environment mapping, shadows and metallic surfaces. Pricing not firm yet.

Numerical Design, Ltd., 1506 East Franklin Street, Suite 302, Chapel Hill, NC 27514. (919) 929-2917.
CIRCLE 189 ON READER SERVICE CARD

AnimFonts

Kara Computer Graphics adds movement to their popular Kara Fonts Collection, with **AnimFonts1** and **AnimFonts2**. Each package includes a standard version of the font, plus animated versions compatible with Deluxe Paint III's ANIM Brush format. AnimFonts1 contains *ChromeScript*, a sophisticated eight-color font in Roman-style script handwritten across the screen. AnimFonts2 has *BULLION*, a dimensional, beveled, highlighted uppercase gothic font that rotates 90 degrees into the screen with a distinctive, traveling glint of light.

$49.95 each. Kara Computer Graphics, 6365 Green Valley Circle #317, Culver City, CA 90230. (213) 670-0493.
CIRCLE 190 ON READER SERVICE CARD

TV Graphics

Slide City introduces **TV Graphics**, a two-disk set of video graphics clip-art. Created in IFF interlaced overscan, backgrounds include decorative patterns and textures such as wood, marble, brick and fiber.

$49.95, 1Mb required. Slide City, 6474 Highway 11, Deleon Springs, FL 32130. (904) 985-1103.
CIRCLE 191 ON READER SERVICE CARD

Turbo Silver Module

The **Module Pack** from Syndesis includes Conversion Modules to read and write both the 2.0 and 3.0 SV formats, plus four other programs for manipulating objects with InterChange and InterFont. In the InterChange system, these Tool Modules modify 3-D objects without changing their format.

$29.95. Syndesis Corporation, N9353 Benson Road, Brooklyn, WI 53521. (608) 455-1422.
CIRCLE 192 ON READER SERVICE CARD

TV* TEXT Professional

Produce eye-catching lettering and graphics for your video

titling and desktop presentations with **TV*TEXT Professional** from Zuma Group. Add colorful stylistic effects to your text and graphics, such as outlines, shadows, metallics — even color-animated sheens, glints and glows. Borders, backgrounds, and Volumes 1-3 of the Zuma Fonts are included.

$169.95, 1 Mb required. Zuma Group, 6733 North Black Canyon, Phoenix, AZ 85015.
CIRCLE 193 ON READER SERVICE CARD

Here are a few of the flashy new font effects (glows, glints, sheens etc.) found in the Zuma Group's upgraded TV*TEXT PROFESSIONAL.

APPLICATIONS

MaxiPlan-III

Also known as Plan/IT (published by B.E.S.T.), **MaxiPlan-III** returns to its original name with an improved program. To update its highly-respected spreadsheet, Intuitive Technologies has added ARexx support, word charts & Gantt charts, integrated Lotus 1-2-3 import/export, print preview, built-in presentation storyboards (with sound and IFF backgrounds), logarithmic scales and more. MaxiPlan users can upgrade for $40 plus the original disk; Plan/IT users can update free.

$250, 1 Mb required. Intuitive Technologies, 2700 Garden Road, Suite 6, Monterey, CA 93940. (408) 646-9147.
CIRCLE 194 ON READER SERVICE CARD

Brown-Wagh

Service Industry Accounting targets companies that bill customers with labor and material charges. The package includes Job Estimating, Job Costing, Billing, Accounts Receivable, Accounts Payable, Inventory and General Ledger. ($395, 1 Mb required.) **BGraphics** ($149.95) generates professional business graphics, with colorful 2-D and 3-D charts, graphs and diagrams. ($195, 1 Mb required.) **Pen Pal** Version 2.0 is now available, with improved printer handling and output, increased font flexibility, and added database capabilities.

Brown-Wagh, 16795 Lark Avenue, Suite 210, Los Gatos, CA 95030. (408) 395-3838.
CIRCLE 195 ON READER SERVICE CARD

Noah's Ark

With its varied animal cargo, **Noah's Ark** makes an educational and entertaining story for young children, and a logical addition to the Hilton Android Robot Reader series of talking tales for beginning readers.

$29.95. Hilton Android Corporation, P.O. Box 7437, Huntington Beach, CA 92615. (714) 963-4584.
CIRCLE 196 ON READER SERVICE CARD

PageStream Additions

Intended for use with PageStream desktop publishing software, each of Soft-Logik's eight new **PageStream Fonts** disks contains three new typefaces for use with dot-matrix, laser and PostScript printers. The new **PageStream Forms** disk contains over 40 form styles, such as invoices, memos, purchase orders and statements. A new version (1.8) of PageStream is due out as well, with some significant bug fixes and improvements.

$39.95 each. Soft-Logik, 11131F S. Towne Square, St. Louis, MO 63123.
CIRCLE 197 ON READER SERVICE CARD

Distant Suns

The award-winning planetarium program Galileo has resurfaced as **Distant Suns** from Virtual Reality Laboratories. Distant Suns features 2,200 stars and 450 deep sky objects in an astronomically correct sky. A new 9,100-star **Expansion Disk** is also available.

$69.95, display disks $3.95, Galileo upgrades available. Virtual Reality Laboratories, 2341 Ganador Court, San Luis Obispo, CA 93401. (805) 545-8515.
CIRCLE 198 ON READER SERVICE CARD

Professional Page V1.3

An important upgrade to Professional Page, Version 1.3 offers support for AGFA Compugraphic Fonts, high-resolution dot-matrix output using these fonts, full online support for the Transcript word processor, and Encapsulated PostScript (EPS) file support, so you can import those thousands of graphic images from Mac or MS-DOS.

$395, upgrade $40. Gold Disk, P.O. Box 789, Streetsville, Mississauga, Ontario, Canada, L5M 2C2. (416) 828-0913, U.S. Orders (800) 387-8192.
CIRCLE 199 ON READER SERVICE CARD

Deluxe Print II

Deluxe Print II Version 1.1 now supports Workbench 1.3, making it more convenient to design and print your own signs, greeting cards, banners, letterhead, calendars and more.

$79.95, upgrade free to owners of V1.0. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (800) 245-4525.
CIRCLE 200 ON READER SERVICE CARD

WordPerfect Update

A "maintenance update," **WordPerfect 4.1** now uses the standard Amiga file requester system, and WordPerfect 4.2 PC files can be imported directly into WordPerfect Amiga.

$250, update $12.50. WordPerfect Corp., 1555 N. Technology Way, Orem, UT 84057. (801) 225-5000, (800) 222-9409.
CIRCLE 201 ON READER SERVICE CARD

PROGRAMMING

Software From Hell

Let the routines and libraries in **Software from Hell** show you the way past the Amiga's programming pitfalls. All source code included with examples, some of which are libraries of audio routines, assembly language disk routines, screen/graphics routines, and several utilities.

$69.95. Conceptually Advanced Technologies, P.O. Box 3302, Santa Monica, CA 90403. (213) 452-1732.
CIRCLE 203 ON READER SERVICE CARD

Amiga Logo

Amiga Logo brings the classic starter programming language to the Amiga, taking advantage of the Amiga's speed, sound and graphics to offer up to 32 colors, four screen resolutions, pull-down menus and adjustable edit windows.

$99.95. Commodore Business Machines, 1200 Wilson Drive, West Chester, PA 19380. (215) 436-4200.
CIRCLE 204 ON READER SERVICE CARD

Abacus Programming Aids

From Abacus comes the **Amiga Advanced System Programmer's Guide** ($34.95, program disk $14.95), the latest volume in their series on the Amiga's inner workings. Important topics include the latest information on Kickstart and Workbench 1.3, interfaces, hardware, EXEC structures, multitasking, I/O, DOS libraries, CLI design, and Devices. Also new, the **Amiga Virus Protection Toolbox** ($59.95) helps you protect your Amiga with a collection of essential tools, and a 160-page guide to computer viruses.

Abacus, 5370 52nd Street, Grand Rapids, MI 49512. (616) 698-0330, orders (800) 451-4319.
CIRCLE 206 ON READER SERVICE CARD

HARDWARE

PRO-RES Still Video Interface

Best known for packaging desktop publishing systems, The Desktop Advantage now introduces their custom **PRO-RES Still-Video Interface**, designed to work with digitizers to produce professional-quality color separations and digitized images from still video.

$399. Desktop Advantage, 543 NE "E" Street, Suite C, Grants Pass, OR 97526. (503) 476-8254.
CIRCLE 207 ON READER SERVICE CARD

Spirit Technologies

The new **AX-S Expansion System** allows all Amiga users to add low-cost XT/AT boards (modems, hard drive controllers, scanners, FAX cards, etc.) to their Amigas by simply plugging them in. Not a Bridgeboard, the AX-S lets you use such expansion boards at prices far below the costs of dedicated boards — without turning your Amiga into a slow PC. The full AX-S includes a heavy-duty 200-watt power supply and seven plug-in explansion slots including XT/AT bus, at a projected price of $999.95. An abbreviated version with fewer slots and without power supply is also in the works, with a tentative price of around $600.

Spirit also has several new memory expansion designs. Among them are two new fully-socketed, expandable (0, 2, 4 or 8Mb) RAM memory boards, the **Octabyte** internal board for the A2000, and the **X-RAM** external version for an A500 or A1000. Two versions of the A500 "trap-door clone" **Trapper** let you add a 512K RAM expansion to your A500, the latest version using only four 256K x 4 DRAMS, the other populated with 16 256K x 1 DRAMS. Both Trapper boards are socketed and available with optional battery-backed clock calendar. For optimal performance of ReadySoft's A-Max Macintosh emulator, **A-MAX RAM** adds 1 megabyte of contiguous memory to your Amiga's chip memory, and includes a sofware switch to convert the RAM to regular expansion RAM for use in Amiga applications. Prices are all tentative, as of press time: Octabyte with 0K $299, 0K X-RAM $399, 0K Trapper board $69.

Spirit Technology Corp., 220 West 2950 South, Salt Lake City, UT 84115. (801) 485-4233.
CIRCLE 208 ON READER SERVICE CARD

Imtronics Hard Drives

According to Imtronics, their fast **HD 4000** ($849) is the only Amiga 500 hard drive that allows you to have 32Mb of hard disk capacity — and add up to 8Mb of RAM — in a single case that exactly matches the slope of your keyboard. The **HC 2000** ($649) is the low-priced Imtronics hard card for all Amiga 2000 models. Both drives use high-speed, non-DMA designs, and with added options are capable of autobooting under FFS with Kickstart 1.3.

Imtronics, 12301 South West 132 Court, Miami, FL 33186. (305) 255-9302.
Distributed by American Software, (800) 225-7941.
CIRCLE 209 ON READER SERVICE CARD

PERFECT SOUND 3.0 is a major upgrade of this popular sound digitizer. New tools include digital filter and gain, faster precision sampling.

Perfect Sound 3.0

A major new release, **Perfect Sound** 3.0 adds new tools, a revamped user interface, digital filter, digital gain, fast sampling and precision sampling to the popular sound digitizer. In addition to stereo recording, you can now connect a microphone directly to your sampler.

$99.95. SunRize Industries, P.O. Box 1453, College Station, TX 77841. (409) 846-1311.
CIRCLE 210 ON READER SERVICE CARD

Digital Animation Transputers

Now your Amiga can ray-trace with astounding speed. From Digital Animation Productions come two transputer boards for high-speed, parallel-processing power in your Amiga 2000. The **SANG Transputer Board** uses 32-bit RISC parallel architecture transputers (Inmos T800) to speed processing and data transfer. With a board containing four T800 chips and four megabytes of memory, the system will run 40 times faster than a plain, 68000-based Amiga — the speed of a $175,000 Iris workstation. The **Video Graphics Transputer** is a high-end graphics and video system that combines a T800 transputer with an Inmos G300 Color Video Controller for up to 16.7 million simultaneous colors, and faster processing that cuts ray-tracing and rendering times dramatically. (SANG Transputer Board with 1 chip, 1 meg DRAM, $2,000; 4 chips, 4 meg DRAM $7,000; graphics board with 2Mb DRAM and 2Mb of Video RAM $5,500.)

Digital Animation Productions, 10 Thacher Street, Suite 116, Boston, MA 02113. (617) 720-2355, (617) 720-2038.
CIRCLE 211 ON READER SERVICE CARD

New Tool Box

With the **Tool Box** 2-slot expansion card cage you can use A2000 cards in you Amiga 500 or 1000, and the new and improved Tool Box now features a new 40-watt power supply, an on/off power switch, hard drive indicator, and eight changes to improve fit and reliability.

$269.95. Expansions Technologies, 44862 Osgood Road, Fremont, CA 94539. (415) 656-2890.
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Supra WordSync

New techniques make the **WordSync SCSI Hard Disk Interface** for the A2000 as fast as DMA (Direct Memory Access), without DMA's conflicts with sound, video and serial I/O operations. Currently included with every SupraDrive Hard Card for the Amiga 2000, the interface is also available separately in **WordSync Interface Kits**. (30Mb SupraDrive with WordSync interface $649.)

$199.95 Kit. Supra Corporation, 1133 Commercial Way, Albany, OR 97321. (503) 967-9075, orders (800) 727-8772.
CIRCLE 213 ON READER SERVICE CARD

Amiga Video Terminal

The **Amiga Video Terminal** (AVT) system lets you transmit and receive high-resolution facsimile (FAX) and slow-scan television (SSTV) images with your Amiga, and then print or save them to disk. For SSTV, the AVT offers higher resolution than any other SSTV mode in use to date. The AVT system can also send high speed color images over phone lines to similarly equipped AVT system stations.

$349.95. Advanced Electronic Applications, P.O. Box C1260, Lynnwood, WA 98036. (206) 775-7373.
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Tiny Tiger Two

Now more powerful and versatile, the new **Tiny Tiger** (45Mb $799, 182Mb $1,749) hard drive system consists of a SCSI hard drive, power supply, and low profile case. Customers can choose from M.A.S.T.'s new proprietary parallel port **SCSI Adaptor-in-a-Cable** ($129), or any other SCSI adaptor on the market. Among other new features, the innovative front panel displays current SCSI ID address, parity on/off, write protect on/off, termination on/off and auto power on/off.

M.A.S.T., 1395 Greg Street, Sparks, NV 89431. (702) 359-0444.
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"Without a doubt the best of the soccer action games"

Amiga Computing, October 1988

If you're a soccer fan, then Microdeal's International Soccer is the game for you. Superb graphics, plus the ability to select team colors, wind direction and speed, wet or dry weather, and day or night game conditions, make this one of the best simulations ever. You can have high caliber competition under any conditions. One or two players can take on the computer, or two players can play against each other. With the optional four player adapter from Microdeal you can pit three players against the computer, two players against two players, or two against one. You won't believe the action. The animated crowd, electronic scoreboard, and on screen refereeing keep the gameplay fast and furious. Don't be left out of bounds. International Soccer is playing now!

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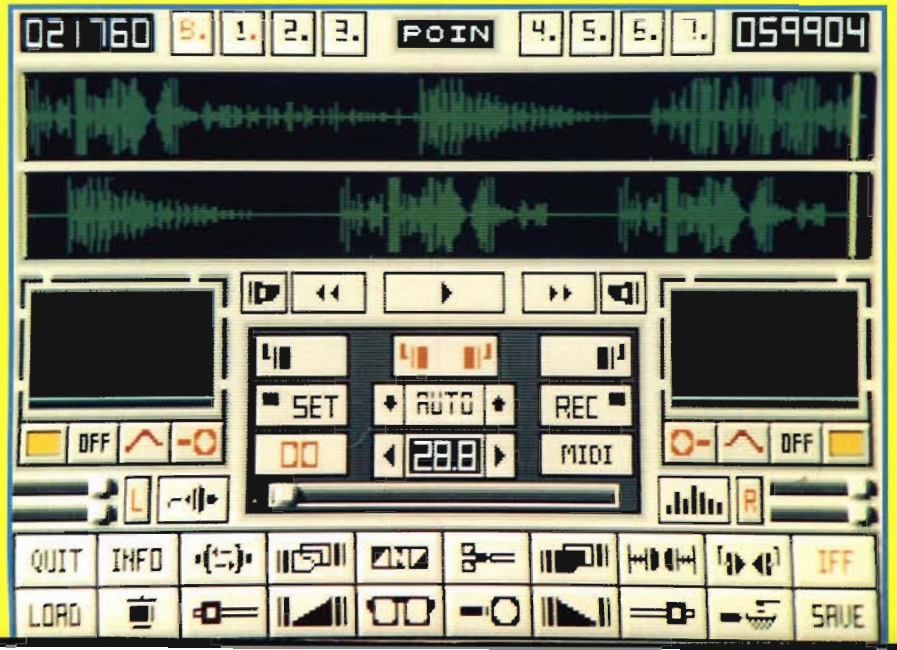
The Advanced MIDI Amiga Sampler



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