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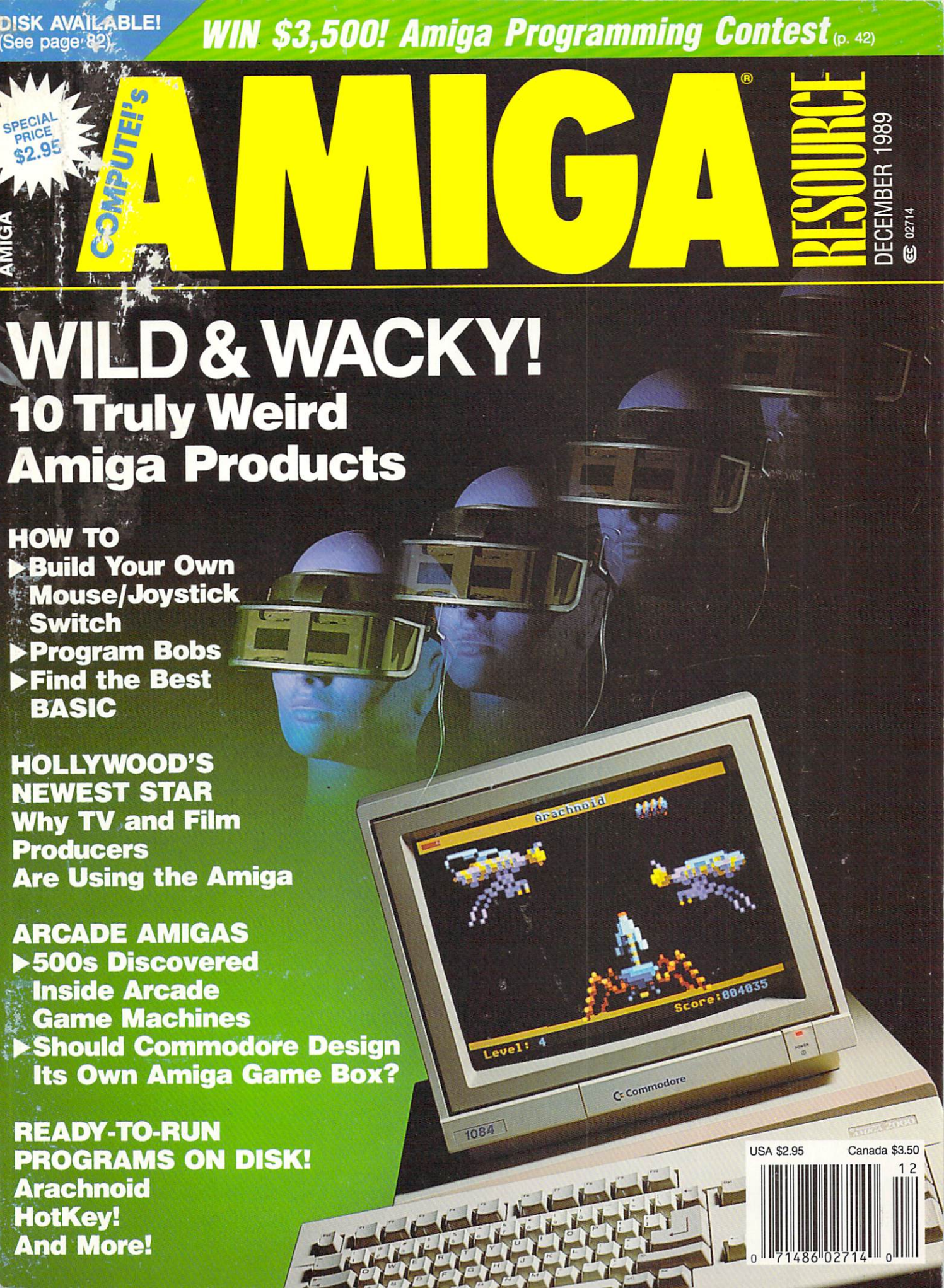

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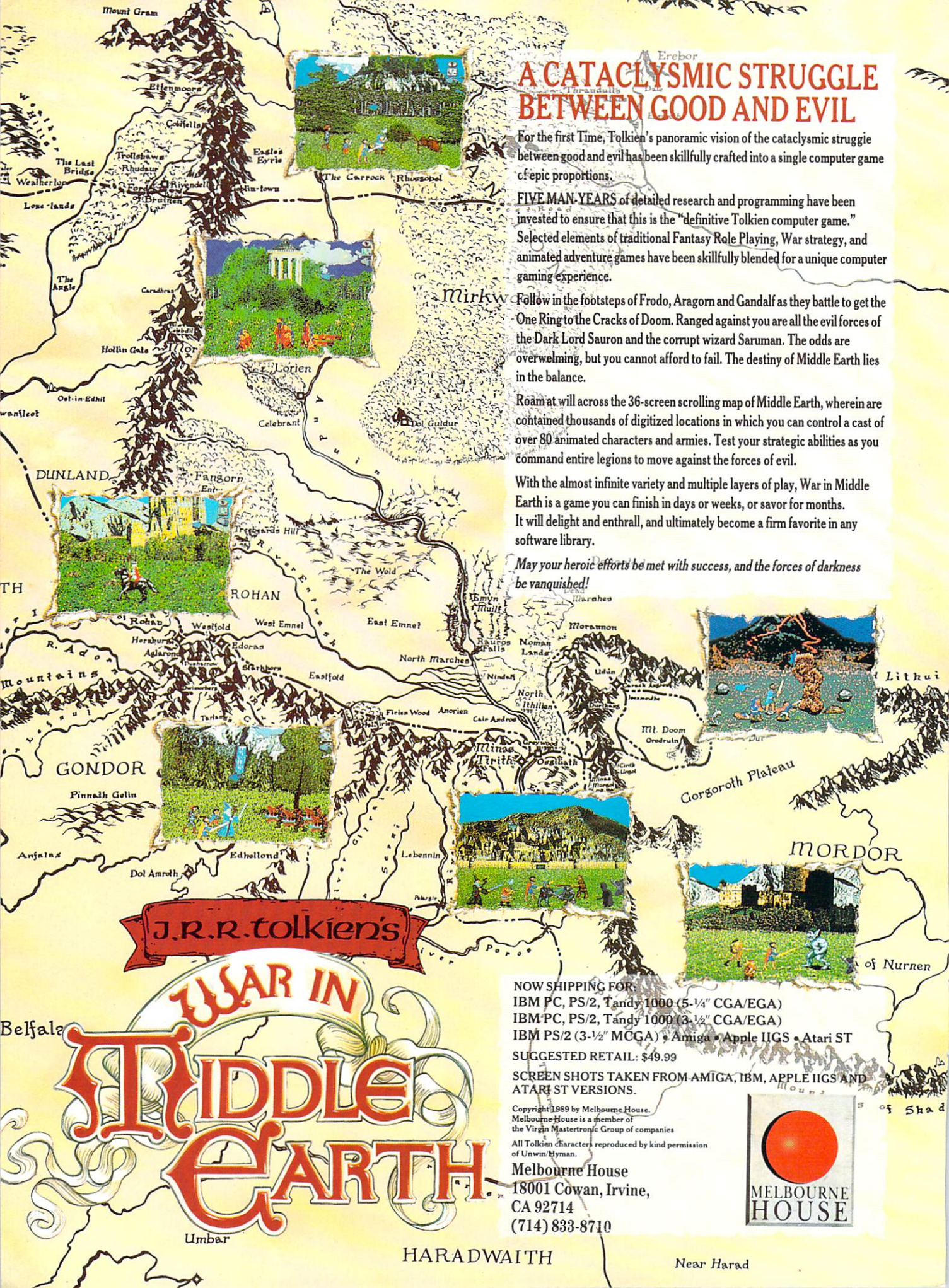

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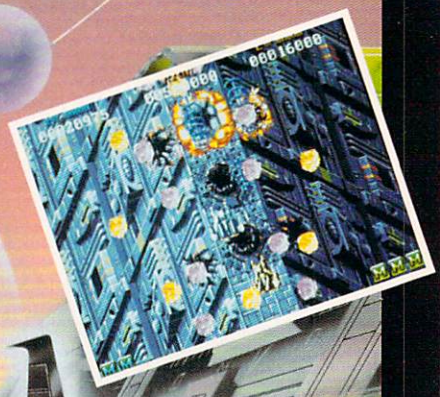

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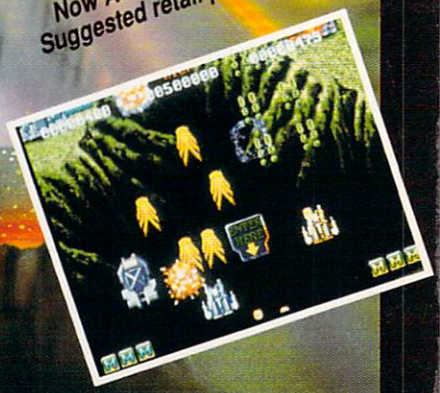

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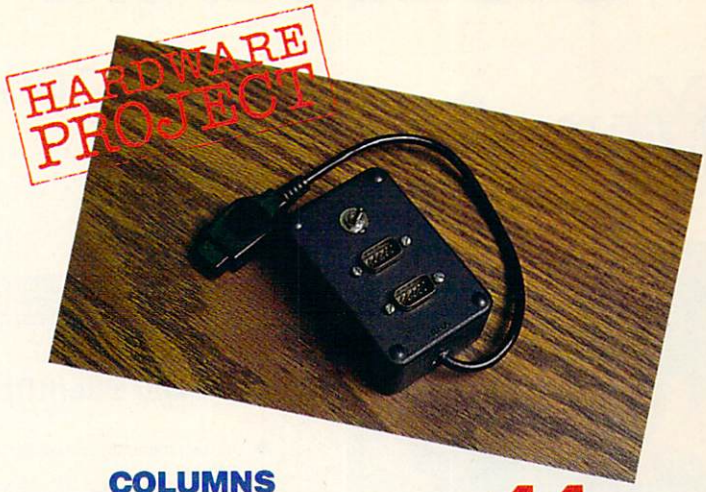

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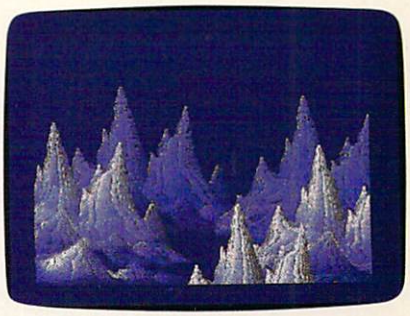

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ON DISK

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Arachnoid, HotKey!, Page, V, NewZap, BoxMove, and more

How to Use the Disk 93

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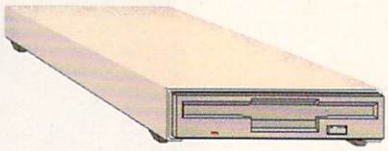

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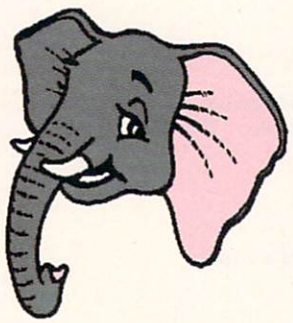

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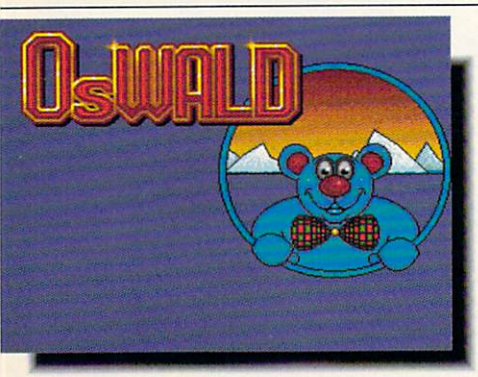

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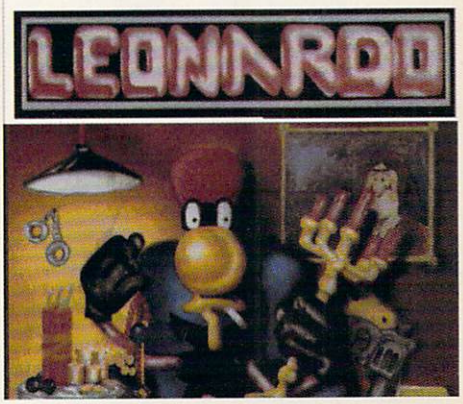

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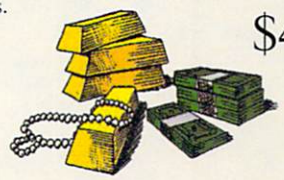

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THE WINDOW

Perspectives from the Editors

This could be a big Christmas for the Amiga. With Commodore pumping an estimated $15–$20 million into television and magazine advertisements, and Amiga 500s hitting the shelves in high-volume retail stores such as Sears & Roebuck, Montgomery Ward, and Service Merchandise, sales of the Amiga may just go through the roof. (Check out Sheldon Leemon's "Perestroika Comes to West Chester" segment in this issue's "Trends" for the down-and-dirty details on Commodore's recent marketing spree.)

Of course, this won't be Commodore's first foray into television advertising. If you've been following the Amiga long enough, you may remember a series of black-and-white commercials starring the famous checkered Boing ball. (The animated Boing ball was *the* first Amiga graphics demo, designed—purportedly in one drunken evening—to wow the crowd at the 1984 Consumer Electronics Show.) Bouncing its way through the commercial, the Boing ball splashed color on each monochrome scene, illustrating the Amiga's ability to add life to an otherwise drab world of "me too" MS-DOS computing. Contrary to popular opinion, I thought these were good, effective commercials. They were short, to the point, and best of all, they caught your attention.

Other Commodore television commercials included one in which a mysterious white-haired man approached a brilliantly lit Amiga 1000 that sat raised upon a pedestal. The whole thing had sort of a sci-fi surrealism to it—so much so that, unless you owned an Amiga, you didn't really know what the commercial was trying to sell you.

Then there were last December's MTV and VH-1 commercials, which offered a free VCR with every purchase of a new Amiga 500. These 15-second spots were so brief and so confusing, not even an Amiga owner knew what was going on. *(Hey Joe, I think I just saw an Amiga commercial. . . . I think.)* Lucasfilm, the company producing this year's Amiga ads, should have no trouble topping these beauties.

And what about Commodore's new mass-merchandising ploy? Selling computers through retailers such as K mart is what put the Commodore 64 into millions of American homes and turned today's inexpensive MS-DOS clone into a standard household appliance.

Specialized computer dealers may not welcome the thought of competing with the likes of Sears and Service Merchandise, but if these low-budget stores can place more Amigas into people's homes and offices, I say more power to them. The more Amigas out there, the better support we'll get from Commodore and third-party software/hardware developers. Besides, coupled with the television ads, this on-the-shelf exposure may finally get the Amiga the name recognition it deserves. It's always frustrating to tell your friends and relatives that you own an Amiga and then have to explain to them what an Amiga is *(it's a computer, see, just like an Apple, but much better)*. Maybe after the end of this year, Commodore will have explained this to them for us.

There's no doubt about it: The Amiga needs exposure. Let's just hope that this holiday campaign can do the trick because, for today at least, the Amiga is Commodore's most powerful computer, and, ironically, its best-kept secret.

—Randy Thompson

Looking ahead . . .

Next month we'll take a special look at how the Amiga will fare in the next decade. Technically minded readers will want to catch our feature on programming in the 1990s. Others will be interested in a new way of obtaining news and programs—from your local cable television service.

Shopping for a telecommunications service? Sysops from the major online services will tell you why their service is best. Do you know what's what inside your Amiga? You'll find out next issue when we go inside your Amiga 500.

John Foust will give you the rundown on 3-D graphics on the Amiga—where they've been, where they are, where they're going. We're lining up fantastic 3-D art to grace the pages of John's feature.

Next issue's disk will be something special, too. "Boomerang," a fast-paced arcade game, will keep your trigger finger twitching. "Sliced Ham Utility Package" will bring new graphics potential to your machine.

And, as always, our columnists will keep you up to date with the latest news, gossip, tips, and tricks. On sale January 12, 1990.

Send questions or comments to Amiga Feedback, COMPUTE!'s Amiga Resource, *P.O. Box 5406, Greensboro, North Carolina 27403. We regret that, due to the volume of mail received, we cannot respond individually to questions. We reserve the right to edit letters for clarity and length.*

Memory-Hungry Amigas

I have had an Amiga 1000 for 2½ years now, so I'm what you might call an "old hand" Amigan. I currently have only 512K RAM and would like to upgrade to two megs. Any suggestions?

M. J. Waters
Naracoorte, South Australia

All of the programs that I currently want for my Amiga 1000 need more memory. What would be the cheapest way for me to expand to at least a full megabyte?

Mike Sinks
Morenci, MI

There are two types of memory-expansion boards available for the 1000: internal and external. No matter which type you get, both will increase your computer's RAM to at least one megabyte.

Generally, internal memory-expansion boards are the least expensive way to go. They are also the most difficult to install because you must open the Amiga's case, remove its 68000 chip, plug the expansion board into the 68000's socket, and then place the 68000 onto the expansion board. If you've never tinkered with electronic components or removed and inserted integrated circuits, installing internal memory expansion is not *a good way to begin.*

Both Spirit Technology (220 West 2950 South, Salt Lake City, Utah 84115; 801-485-4233) and Michigan Software (43345 Grand River, Novi, Michigan 48050; 313-348-4477) make internal RAM expanders. Michigan Software's Insider has the smallest price tag ($150 suggested retail with 0K RAM), but it's less flexible in that it can only expand your Amiga to 1.5 megs—no more, no less. The Inboard from Spirit Technology costs more ($239 suggested retail with 0K RAM), but it can be configured to accept 0.5 meg, 1 meg, or 1.5 megs of RAM, thus giving your Amiga a total of 1 meg, 1.5 megs, or 2 megs. Both products come with their own battery-backed clock, so you won't have to set the date and time every time you boot your computer.

To avoid disassembling your Amiga, you might want to purchase external memory expansion. External memory boards simply plug into the expansion slot found on the right side of your 1000. There are several manufacturers of external memory boards, including Access Associates (491 Aldo Avenue, Santa Clara, California 95054-2303; 408-727-8520), ASDG (925 Stewart Street, Madison, Wisconsin 53713; 608-273-6585), C Ltd. (723 East Skinner, Wichita, Kansas 67211; 316-267-3807), Comspec Communications (74 Wingold Avenue, Toronto, Ontario, Canada M6B 1P5; 416-785-3553), M.A.S.T. (3881 Benatar Way, Chico, California 95928; 916-342-6278), and MicroBotics (811 Alpha Drive, Suite 335, Richardson, Texas 75081; 214-437-5330). Suggested retail prices range between $199 for a 0K Minimegs board from M.A.S.T. to $339 for a 0K Starboard2 from MicroBotics.

Not all external memory-expansion boards are the same. A couple of options you can look for are a battery-backed clock and an expansion bus pass-through. If the external memory expansion does not have a pass-through (a plug on the right side that allows you to connect additional peripherals), you will not be able to use it with other non–pass-through expansion devices.

Note that the prices listed here are for expansion boards without any RAM chips installed (unpopulated). Some people prefer to buy unpopulated boards with the presumption that they can purchase RAM elsewhere at a lower price. This can be less expensive, but it entails ordering the RAM separately and installing the chips yourself. If you want a memory-expansion unit that you can just plug in and use, be sure to order it with the RAM chips installed.

To get the best deal, call up a few mail-order companies and ask for their latest prices on the memory-expansion boards you're interested in (be sure that you get the complete price, with tax, shipping, and other possible surcharges included). The last time we checked, an Inboard populated with 512K was selling for about $310 while a 512K M.A.S.T. Minimegs was around $320. You'll find better product support if you purchase memory from a computer store, but you'll also find higher prices.

Hemi-Syncs and 2-D FEMs

I have reason to believe that because of your frequent articles on programming Amiga computers, you may have written one that I am looking for, specifically on how to program an Amiga stereo computer to produce sound-wave patterns which, when heard on stereo headphones, cause the brain-wave patterns of both hemispheres to synchronize. This process is known as *Hemi-Sync* as discovered by Robert Monroe. If you have featured such an article, I would like to purchase a back issue of that magazine.

Ron Nienhaus
Tampa, FL

My name is Stefan Selkman. My company is SEMAROCK. I have an Amiga 500. I am a mining engineer and need a FEM program for my calculations. Could you help me find one? A two-dimensional version would be suitable. I would like source code because I would like to be able to change it.

Stefan Selkman
Ludvika, Sweden

Hemi-Sync? FEM? Is it April 1 already? Honestly, we don't know what either of you are talking about. But if any of our readers can help out, we'll pass along the information.

READERS FEEDBACK

Back Issues and Disks

The Summer 1989 issue of *Amiga Resource* listed the C and Modula-2 versions of your "Colorbench" and "Normalbench" programs, but because of their length, you did not list assembly language versions. I do not get your companion disk, but I would like to have these programs and their assembly language listings. How can I get them and how much do they cost?

John Dellar
Little Rock, AR

To receive a single copy of our disk, simply use the order form that appears opposite the "On Disk" contents page. To order disks from previous issues, such as Summer 1989, use the back-issue ad which appears elsewhere in the magazine, or send $10 to the single-copy disk-order address given in the "Where to Write" box on the following page. Be sure to specify which disk you're ordering when you write. If you missed an issue of the magazine, you can order one for $6, or order both the magazine and disk for $12.

Amiga Logo

Would you send me the name of a company or distributor that sells a version of the Logo language for the Amiga? I have an Amiga 1000 with 512K of RAM.

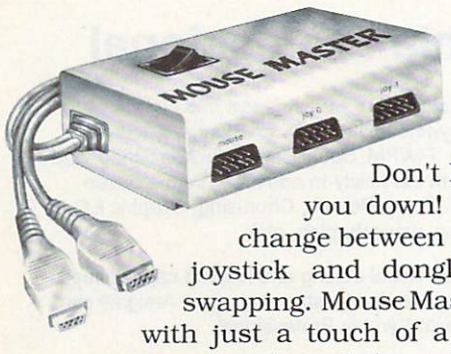
Theodore F. Blume
Emmett, ID

You're in luck, Theodore. We've just received a press release from Commodore announcing that Amiga Logo *is now shipping. The product's part number is AS200, and its suggested retail price is $99.95. Look for it at your local Commodore computer store or try calling one of the many Amiga mail-order companies. If they don't currently have it in stock, they can probably order one for you.*

According to the press release, Amiga Logo *requires only 512K RAM and one disk drive. The program's features include up to 32 colors and four selectable screen resolutions. Dutch, French, Italian, German, and Spanish versions are due out soon.*

Semimonthly?

I was pleasantly suprised by your October editorial which mentioned that *Amiga Resource* had become a bimonthly publication. Imagine my delight at the thought of receiving 24 issues of your excellent magazine



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every year. How hectic it must be, I thought, preparing twice as many editions as any other Amiga publication!

However, upon checking your subscription information, I noticed that your annual rate was based on six issues. I wonder if it might not be a little more accurate to describe your publication's frequency as being *semimonthly.* High gear certainly, but not overdrive yet!

Mark Owen
Wawa, Ont., Canada

Gadzooks! Twice a month would be hectic indeed, especially when we assemble a disk packed with original programs for each issue. Quality programs take time to develop.

We're sorry if our statement was misleading. Maybe someday we'll make the shift into overdrive, but for now, high gear is fast enough. ▲

Where to Write

Question, comment, problem, or submission? If you want to get in touch with us, here's how.

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Be sure to include the correct department in the address:

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For questions or comments about the Amiga or this magazine

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For programming questions

Programmer's Page
For programming tips

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For "On Disk" program submissions

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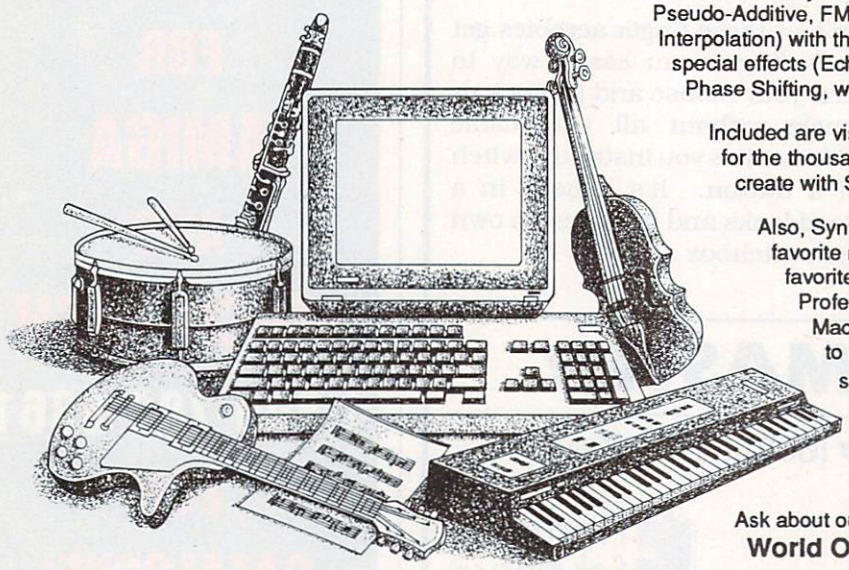

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Shay Addams

Amigas with Coin Slots

Next time you visit the local arcade, take along a crowbar and pry one of the *Magic Johnson Basketball* cabinets apart. Inside you'll see the motherboard from an off-the-shelf Amiga 500, a piggyback board mounted parallel to it and providing up to 1.5 megabytes of ROM, and a wiring harness connecting the motherboard to the joystick, buttons, and other controls. The arcade operator *might* get upset if you do this, so take my word for it.

Actually, take Justin Heber's word for it. Heber heads up Arcadia Systems, the coin-op division of Virgin Mastertronic (a subsidiary of The Virgin Group, a London-based conglomerate that owns everything from airlines and hotels to record and film studios). "Other coin-op companies use custom-masked ROMs, memory chips whose programming can't be changed," said Heber. "We use EPROMs, a generic part that can be reprogrammed infinitely." These are mounted in that piggyback board, making it easier for the arcade operator to replace them with a new game than the conventional method of ripping out racks of chips and boards designed for a specific game.

Before Arcadia came along, a coin-op machine housed custom ROMS and circuits designed for a single game. When customers grew weary of gobbling dots in *Pac-Man,* for example, the operator had to replace the machine's innards or even buy a whole new cabinet so people could play *Ms. Pac-Man.* With an Arcadia machine, operators just yank out the old EPROMS, pop in the new ones, and slap some fresh graphics on the outside of the machine. They can even get a kit that converts an old arcade machine such as *Pac-Man* to the new Arcadia format.

Mastertronic's Mega Games opened the door for Amiga-based coin-op entertainment to enter the home. *Magic Johnson's Basketball* began life in the arcades and migrated to Amiga this fall. (Certain elements, such as providing for mouse rather than joystick control, were rewritten, but otherwise the code remained intact.) Arcadia's initial game plan, however, was not just to move successful coin-op titles to the home computer market, but to develop games for simultaneous release in both formats. "The same team does simultaneous development of home and coin-op games," Heber points out.

Arcadia's first two home/coin-op releases are *Rick Davis' World Trophy Soccer* and *NY Warriors.* (Rick Davis—in case spectator sports put you to sleep as quickly as they do this columnist—captains the U.S. Olympic soccer team.) *NY Warriors* is a shoot-'em-up combat game. Both games require a megabyte of RAM, though whittled-down 512K versions may reach the market in 1990.

Heber says Arcadia has done a dozen Amiga-based coin-op games since the 1988 introduction of *Leader Board,* an Access Software golf game. The *Leader Board* game you play in the arcades employs virtually the same code as in the original Amiga program. Difficulty levels, high-score tables, and other elements were added to tailor it for the arcade environment, but otherwise the coin-op game is very faithful to the home version.

So, the other side of this coin (in all likelihood a quarter) is that Arcadia is also transporting home computer games to the arcade. *Bowling* and *Air Hockey,* both created by DesignStar and included in Mindscape's *Indoor Sports* package, followed the *Leader Board* success story, and Heber said, "We'll continue to do this when we run across home games with potential for the coin-op environment."

> What's the difference between an Amiga 500 and a coin-operated arcade machine? Not much.

Another home-to-arcade tale illustrates the significance of Arcadia's decision to install souped-up Amigas in their arcade machines. Atari got the coin-op license to *Tetris,* but its coin-op division is still stuck in the old system. So, as Atari's Linda Benzler explained, Atari engineers first had to "design the game, then design the custom hardware to fit the game." (For some odd reason, Atari has no plans to put Amigas inside their arcade machines.)

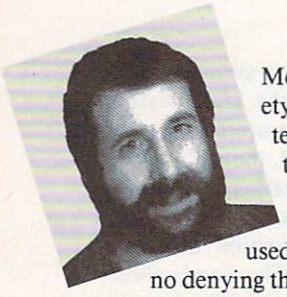
But development time isn't Arcadia's only advantage to using the Amiga. Heber says the Arcadia system also gives them a creative edge over other coin-op manufacturers, one that the home gamer will appreciate. "The decision to use this type of commonly available hardware [the Amiga] gives us access to a lot of creative talent, compared to other coin-op companies that use their in-house designers and custom electronics. This gives us a distinct advantage in originality," Heber elaborates, "one that will be visible in the home and the arcade games."

That's fine with me, since I'd rather have an Amiga that will take quarters than to keep trekking down to the arcade and stuffing my money into the coin-op slots. Because if Commodore or a third-party outfit ever decides to invent an Amiga peripheral that takes quarters, I'll actually be able to make some money when people drop by my place to play computer games all night. ▲

ABSTRACTIONS

Arlan Levitan

Lies Computer Dealers Tell



Most computers can perform a wide variety of tasks with a fair degree of competence, but computers are tools, and no tool is perfect for every job. A screwdriver can be used as a pry bar, hammer, and chisel, in addition to being used for its intended function; but there's no denying that a tool's design imparts strengths and weaknesses that make it better equipped for a specific task. Over the years I've been fortunate enough to use and own many different types of computers. My computer allegiance varies with the task at hand.

For my money, the Amiga is at its best when dealing with animated graphics and overlaid video applications. I use a Macintosh to develop presentation graphics and prefer the text display of EGA- and VGA-equipped PCs for dealing with online and written text. While I don't own an Atari of recent vintage, I'll grant that it's a fine computer for MIDI-based applications.

Before everyone starts firing off letters questioning my good sense and parental lineage, let's agree that your personal mileage may vary. Everyone is entitled to his or her opinion (however misguided it may be) and I'm as prone to argue the merits of one system over a tall cool one as any other computer aficionado.

Even allowing for differences in digital dogma, it's obvious to even the most casual observer that the Amiga (and most other non-IBM/-Apple computers) have been getting an increasingly short end of the stick. Proof positive of such was afforded when the editor of a consumer-oriented computer buying guide that I write for recently asked me what I thought of dropping everything but coverage of PC and Macintosh products from his publication. To his credit, he didn't flinch as the earpiece of his phone was transformed into molten slag by my reply.

Much of the Amiga's identity crisis has resulted from a severe lack of visibility in many of today's general-interest computer magazines. Half of the blame may rest with the editorial weight afforded by millions of MS-DOS– and Apple-related advertisements, but the other half sits squarely on the shoulders of Commodore itself. Until recently, Commodore's definition of press relations was "the immediate families of journalists."

Let's face it, in comparison to the number of PC and Apple outlets in a typical town, there are darn few Amiga dealers around. When first-time computer buyers start shopping, they're not likely to run into an Amiga. In practice, the Amiga's low public profile is sorely aggravated by the unwillingness of thousands of MS-DOS– and Apple-oriented retail salespersons to understand what the Amiga is about and a bizarre tendency to embellish anti-Amiga knocks we've all heard into patently preposterous "facts." I'd like to think that most of us can live with honest differences in opinion, but when honest becomes a non-operational adjective, it's time to do something about it.

Think I'm overreacting? Consider the following: Over a period of three months or so, I've been doing some undercover shopping at local computer stores where I'm not a familiar face and in out-of-town shops when I've been traveling on business. During that time I've visited over 30 different computer stores, most of them purveyors of IBM PCs and their clones, along with a smattering of Apple and Atari dealers. I usually pose as a well-to-do yupster intent on buying a machine today or tomorrow, whose primary application would be generating animated sales presentations that would be run live on the computer or transferred to videotape.

> All Amiga 500 power supplies had to be recalled because they were shorting out and starting fires.

In most cases, I would let the salesperson lead me to the brink of closing on a costly 80386, Macintosh II, or Atari Mega ST and then start to hedge. When pressed for reasons for my hesitancy, I would finally confess that I had looked at the Amiga 500 and/or 2000 a few hours before and was much more impressed with its capabilities and price/performance.

Almost without exception, the mere mention of an Amiga was enough to unleash a flood of misinformation, half-truths, and downright lies. Accommodating demeanors rapidly turned patronizing, haughty, and sometimes downright vicious.

Here are ten nominations for the Amiga Believe It or Not Hall of Fame, culled from my informal field study. The names of the salespeople and computer stores have been changed to keep this column printable and to minimize the odds of being tagged by multitasking subpoenas.

Lie #1: Brad Bull, Empty Suit Computers. If you buy an Amiga you'll be stuck with a worthless orphan computer. Commodore is going out of business; its president just quit, and all of the board of directors are unloading their stock before the company folds.

Hoax #2: Mike Hazard, Shifty Systems. Amigas are dangerous computers. All of the power supplies shipped

with the Amiga 500 had to be recalled because they were shorting out and starting fires in people's homes. Even the replacement units are of marginal quality. If you add an external disk drive to the Amiga 500, it will blow the power supply.

Fabrication #3: Hardly Serious, GladHand Computing. The Amiga is an overpriced, modified Commodore 64. Commodore was stuck with warehouses full of parts for the 64 that it couldn't sell. The company just designed a new case, and added a new sound-and-graphics chip to the 64 and called it a new computer. The only place selling them by the end of the year will be Toys "R" Us.

Fraud #4: Mosley Status, Bootlicker Electronics. The Amiga was never intended to be a home computer and is not suitable for serious use. It was originally designed to be a home videogame machine. That's why most of the software available for the Amiga is entertainment titles. When the Nintendo was introduced and became a hit, Commodore realized that it would have little luck trying to sell a $400 game machine. It changed its plans at the last minute and added a keyboard and I/O ports to the system so that it could pretend the Amiga was a real computer.

Fib #5: José Canyoucé, Airhead Confusing Center. Atari owned all the rights to the Amiga but decided not to produce it because its design was inferior to that of the Atari ST. The same team that designed the Atari 800 wanted to build the Amiga and were laid off. They convinced Commodore to buy the rights to manufacture the system in order to get even with their old bosses. Jack Tramiel was so disappointed with the Amiga, and so impressed with the Atari ST, that he immediately quit Commodore and bought Atari.

Sham #6: Lester Legal, Rich & Fruity Computers. It is illegal to run a Macintosh simulator on an Amiga. All Macintosh ROM chips are the property of Apple Computer. If you purchase a set of Mac ROMs from an unauthorized source and use them with a simulator on your Amiga, the FBI can confiscate your system. Besides, Apple is suing Commodore for copying the Macintosh user interface. When Commodore loses the case, the Amiga will be left without an operating system and you won't be able to run Amiga software, either.

Deception #7: Dirk Underhand, Switcheroo & Company. You can't hook up third-party peripherals to an Amiga. Your monitor, printer, and add-on disk drives must all be Commodore-brand products. If you try to hook up a non-Commodore product to an Amiga, it will probably be damaged; it certainly won't work. The Amiga computer itself may seem like a bargain, but all of the peripherals cost twice as much as the same items for IBM PCs and PC clones.

Fantasy #8: Watme Worry, Digital SnakeOil. The Amiga isn't suitable for animation purposes because its screen flickers so much it will give you a headache. The Amiga's video hardware is so buggy that Commodore has to keep releasing new revisions of the chips to keep from being sued. The operating system isn't much better either. Unlike MS-DOS, every time the Amiga is upgraded you have to replace chips in it. Anytime you want to have a dealer change a chip in an Amiga, it costs at least $300 because the entire motherboard must be thrown away and replaced.

Tall Tale #9: Stickit Tuem, Whizzoland. No one is writing software for the Amiga anymore because Commodore keeps making changes to the operating system that cause most software to bomb. The software that is available is mostly poor translations of IBM PC and Commodore 64 titles.

Ruse #10: Ivan Misled, True Blue BizCorp. The Amiga PC and AT Bridgeboards don't really give Amiga 2000 owners full IBM compatibility. A lot of IBM PC programs contain code that checks to make sure that they're running on a real PC or PC clone. They will quit or give wrong answers if run on an Amiga Bridgeboard, and their manufacturers won't honor their warranties.

> It is illegal to run a Mac emulator on an Amiga. If you do, the FBI can confiscate your system.

Had enough? Anyone who has more than a passing familiarity with Amigas recognizes all of the above as a load of malarkey, and many of our readers may recognize the seminal specks of truth from which these gross distortions arose. Unfortunately, many shoppers presented with consistently negative information never take the time to seek the truth. The only way these potential Amiga buyers will be motivated to visit an Amiga dealer is by giving them a taste of what an Amiga can really do.

Commodore, under the direction of new CEO Harold Copperman, is taking the first step with an Amiga advertising blitz that should be in full swing by the time you read this. Based on what I've heard of its intended content and frequency at this early date, I'm willing to bet that this Amiga ad campaign may be the first to score a bull's-eye with the home computing market and cut through some of the pea-soup fog of Amiga disinformation I routinely encountered.

In closing, let me acknowledge the tenacity and forthrightness of Carl S., a computer salesman in a downtown Chicago store who seemed unusually knowledgeable about Amiga systems.

With unerring accuracy, Carl ticked off a complete litany of chinks in the Amiga's armor as he extolled the virtues of a Compaq DeskPro 386. In a moment of intuitive suspicion I asked him point blank, "What kind of system do you have at home, Carl?"

"Compaq Deskpro 286. I can't afford the 386 . . . even with my discount."

"Anything, else?"

Carl grinned sheepishly, "Amiga 2500." ▲

John Foust

Professional Page and Professional Draw

This month, "Spotlight" features Gold Disk's *Professional Page* desktop publishing program and its companion structured-drawing program, *Professional Draw*. At my software company, Syndesis, we've used *Pro Page* to produce all our manuals and flyers. I've spent many evenings working with these two programs.

My first lesson is that you can't underestimate the value of reading the manual. Or should I say rereading the manual? While researching this column, it took a long time to find my manuals. After I found them, I casually paged through each one, including the 1.1 and 1.2 supplemental manuals, and what surprises I found! I'd forgotten a dozen commands that could have saved me plenty of time and effort over the past months.

Layout style. Skill in page layout and graphics design takes many years to learn, regardless of whether you're working on a computer or not. It can improve your document far more than using one or two flashy features of a program can. The fact that you're using a computer adds its own constraints on page layout. Consider reading desktop publishing magazines such as *Publish!*. Even though most of the material is about software for the Macintosh or the IBM PC, the tips on desktop publishing style are well worth the cover price. Also, many ritzy Mac companies have great giveaways in their advertisements, such as catalogs and posters of example typefaces and clear plastic type-size rulers.

The latest version of *Professional Page* sports improved text handling.

You can scale fonts to a variety of sizes.

One popular feature in desktop publishing magazines is the "page makeover" column. Each month, they rework a sample document to improve the layout. Page layout requires a subtle vocabulary to describe the characteristics and errors of a document. It also requires preplanning and consistent style.

Slow and jaggy no more. The two most common complaints about *Pro Page* are that the screen refresh is unbearably slow and that the dot-matrix output looks too jaggy. The latest release of *Pro Page*, version 1.3, addresses these problems. Bear in mind that I'm using a beta version of the program. Screen refresh is faster in text blocks, but complex graphics don't show much improvement unless you turn on the new wire-frame-graphics feature.

The greatest improvement is fonts, both onscreen and in dot-matrix output. Gold Disk has licensed the Compugraphics' Intellifont outline-font technology. This means fonts will always be at the highest resolution. With any Preferences printer, output is the best resolution possible.

Pro Page's regular price is $495. On release, *Pro Page* 1.3 will be on sale for $295. Soon after this, Gold Disk will offer a package of Compugraphic fonts that match the 35 fonts found in most PostScript laser printers, for about $200. Version 2.0 of *Professional Draw* is due in early November.

PostScript alternatives. What if you don't have *Pro Page* 1.3 yet? *Pro Page* 1.2 is designed for PostScript, not dot-matrix, and there is no getting around it. What you need is PostScript. Copy centers are offering PostScript laser-printing services at a rapid rate. If you have a 5¼-inch drive on your Amiga, you can use the Workbench PC Tools to copy an Amiga PostScript file to an IBM-format disk, which most laser-printing services can read.

Another PostScript alternative is *PrintScript* from Pixelations. It prints PostScript files to any Preferences printer. After all, with an HP DeskJet or LaserJet, or a good 24-pin dot-matrix printer, you get very good results. *PrintScript* isn't as fast as a laser printer, but at $149, it's certainly cheaper. It understands any PostScript file generated by any program, not just *Pro Page* and *Pro Draw*.

Text editing. If possible, avoid editing text in *Pro Page*. You'll save time and eyestrain by embedding your own formatting commands in the text using a separate text editor and then importing the text and pasting it into the box. The formatting commands are described in Appendix F. For example, "This is a \Bdistinct\b \Iimprovement\i" would be appear as "This is a **distinct** *improvement*" on the *Pro Page* screen. The \B turns on boldface and \b turns it off. You can change type size with the command \fs<24>.

If you must edit text while in *Professional Page*, switch to the black-and-white display mode from the Preferences

menu. Take advantage of the interruptable refresh in *Pro Page* 1.2. When the thing you're working on is refreshed, click the right mouse button, and the screen refresh will stop. If your document has a lot of bitmaps, turn on quick move and greek each box to save memory and increase refresh speed. If you don't need the rulers, turn them off, too.

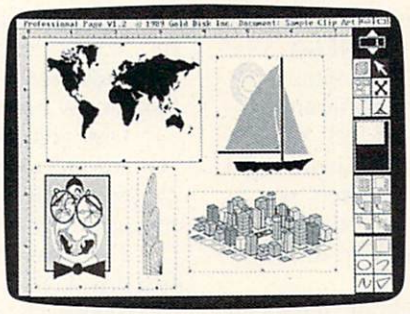
It may be faster to edit text outside of *Pro Page,* but what about editing the text that's already inside a *Pro Page* document? There's a way to rescue the text you've already composed. You'll need to find a CLI utility called *Strings.* You can find it on Fred Fish disk 174. *Strings* examines an otherwise unreadable binary file and outputs any of the printable ASCII text to the screen. You can redirect this text to a file. From the CLI, if your document filename is mydoc.pp, enter **strings > RAM:mydoc.txt -o mydoc.pp.** Load the mydoc.txt file into an ASCII text editor, and you'll see the text of your document mixed in with *Pro Page* formatting commands and other garbage text such as ink-color names.

Gold Disk sells the *Transcript* text editor for $69.95. It can communicate with *Pro Page* 1.3 if they're run at the same time. The *Pro Page* 1.3 Edit menu has a *Transcript* option. Place the text cursor in a box and select this item, and *Transcript* pops forward so you can edit the text.

If you feel comfortable programming in Amiga Basic, it's easy to write short programs that generate formatted text for *Pro Page.* One common stumbling block is page numbering. *Pro Page* has no built-in mechanism for automatically numbering pages, so many people are reduced to the tedium of placing and editing page footers and headers by hand. When a new page is inserted, each page must be changed by hand.

By combining formatted text with linked boxes, it's easy to automatically number pages. Imagine a series of pages with small boxes at the bottom where the page number belongs. Each box is only one line tall. (This would be a good candidate for using *Pro Page's* odd-and-even template feature.) Type in Program 1 in Amiga Basic and run it. It generates a file called lines.txt that has consecutive numbers on each line. If this is imported and pasted into the first page-number box, and all the following page-number boxes are linked to it, then each box will contain one consecutive number. To insert a page in the middle, you'll need to unlink and then relink the boxes, but this is certainly easier than editing each page number.

Program 2 extends this example to include the correct right- and left-justification of page numbers and chapter titles. For this example, the page-number box should be as wide as the page. If X is odd, then the program makes a chapter title that is right-justified, but, for even-numbered pages, it's left justified. Again, import and paste this text into the first box, and link it to the others. The " \jr" and " \jl" format commands set the justification for each line. The chapter title Creating Text will be set in italic type.



Structured clip art from Gold Disk: The next rage in Amiga graphics?

Program 1

```
OPEN "O", #1, "lines.txt"
FOR x=1 TO 100
  PRINT #1, x
NEXT x
CLOSE #1
```

Program 2

```
OPEN "O", #1, "lines.txt"
PRINT #1, "\ff<Helvetica>\fs<12>\c<Black>";
FOR X=1 TO 100
IF (X MOD 2) = 1 THEN
  PRINT #1, "\jr\ICreating Text  \i"; X
ELSE
  PRINT #1, "\jl"; X; "\ICreating Text\i"
END IF
NEXT X
CLOSE #1
```

Structured drawings. Not everyone is an artist, and it takes a lot of skill to become proficient with *Pro Draw.* Fortunately, several companies sell *Pro Draw* clip art. AlohaFonts makes the *Eclips* clip-art library, which includes a total of four disks encompassing more than 300 distinct designs. For $99, it's quite a deal. The art is very contemporary in design, ranging from formal to cartoonish. It includes borders and patterns that can spice up your documents.

Gold Disk's *Structured Clip Art* disk sells for $59.95. The clip art is more informal than the *Eclips* set. The disk includes *ClipMap,* a very useful program that transforms *Pro Draw* clip art into IFF bitmap brushes or pictures. In other words, you can use this library of *Pro Draw* clip art in any program that supports IFF.

IFF output should be built in to *Pro Draw* instead of being sold separately. After all, the ability to smoothly resize a graphic is the primary advantage of structured drawing. A serious *Pro Draw* user should get this clip-art library for this utility alone. It means you can draw something now in *Pro Draw* and *later* transform it to a bitmap of the resolution you need, from an icon to a brush to superlarge high resolution.

Finally, my company, Syndesis, makes a product called *InterFont* that generates *Pro Draw* clip art. *InterFont* is a structured font editor and titler that makes text blocks for 3-D programs such as *Sculpt 3D* as well as Aegis *Draw* and *Pro Draw.* You can also make simple renderings of 3-D objects for the *Pro Draw* format.

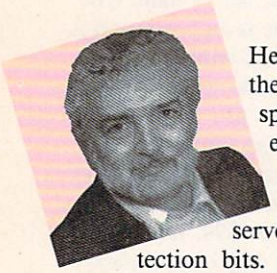
Two warnings about Aegis *Draw* clip art. When it is imported into *Pro Page,* it comes in with a certain line thickness that you can't change. Small details may get lost. Unfortunately, *Pro Draw* does not import Aegis *Draw* clip art, so you can't get around it that way. Second, make a small addition to the psprlg file in the Data directory on your *Pro Page* disk or directory. Using an ASCII text editor, add the PostScript command **1.415 setmiterlimit** to the bottom of the file, on its own line, right after the **gsave** line. This eliminates the small sharp extensions that appear on the ends of Aegis *Draw* lines when output to PostScript.

Special thanks to Jay Gross and Gold Disk tech support for some of these tips. ▲

CLI CLIPS

Jim Butterfield

Names and Editors



Here's a quick tip. With Workbench 1.3, the ALIAS command can be used to speed up your favorite operations. For example, you may wish to copy many files using COPY CLONE—a wise idea, since the CLONE option preserves the original date of the file and protection bits. Set things up with ALIAS XCOPY COPY [ ] CLONE, which makes XCOPY invoke the COPY CLONE operation. The square brackets say, in effect, "put whatever follows the command word here," so that XCOPY DING DONG will be executed as COPY DING DONG CLONE.

The XCOPY definition above is built into the standard shell-startup file in the S: directory; you'll have it the moment you open a shell window. You may find it useful to enter TYPE S:Shell-Startup and read the alias definitions that are automatically made on your behalf. You may change this file as you please, or you may set up new aliases or cancel existing ones at any time.

ALIAS is handy for those who would like to save keystrokes. For example, ALIAS CP COPY [ ] CLONE would allow you to copy by typing CP as the command word. ALIAS CP cancels the alias when it is no longer needed. Be careful with short names: Don't choose one that conflicts with existing file, drawer, or device names.

Keywords Used by Major CLI Commands

ADD	FILES	PURE
ALL	FLAGS	QUICK
AS	FROM	QUIET
BLOCK	GE	REMOVE
BUF	GT	REPLACE
BUFFER	HEX	RES
CLONE	INTER	SINCE
COLSTART	KEYS	SIZE
COM	LFORMAT	SUB
COMMENT	LIST	SYSTEM
DATE	NAME	TASK
DATES	NOHEAD	TIME
DIR	NOPRO	TO
DIRS	NORES	UPTO
EQ	NOT	VAL
ERROR	NUMBER	VER
EXISTS	OPT	WARN
FAIL	P	
FILE	PAT	

Name Conflicts. You can save time and trouble by choosing good names for disks, drawers, and files. The system warns you about some bad names. For example, the colon (:) and slash (/) characters are reserved for defining file paths and cannot be contained within a name.

The space character is often used in filenames, but it makes extra work for CLI users. Any filename containing a space must be enclosed in quotation marks. If defined with a full directory path, the quotation marks would need to enclose the whole path, for instance, "DF0:SALES/CUSTOMERS/BIG LIST". Use the name BIG_LIST instead.

Characters that might be used for pattern-matching are bad news within a name. These characters—' ( )? % # |—may be used in filenames, but they will make usage tricky. Names such as Bill'sBox, (memo), or Final? are legal but hard to handle. For similar reasons, stay away from the characters < > + . ; * which have special meanings in CLI lines and script files.

Special Names. Your filenames should not conflict with keywords. You might think that FROM is a wonderful name for a file; but when you try to copy it with the command COPY FROM OTHER, you will discover that the COPY command won't recognize FROM as a file. Giving a full pathname or using quotation marks would get you out of this pickle, but why bother? A list of keywords used by major commands is given in the table "Keywords Used by Major CLI commands."

Disk volume names are a special case. In principle, you may call a disk whatever you like; but if the name you choose conflicts with another logical device name, you may get a few surprises.

The most common problem happens if you call the first disk A, the next B, and the third C. That third one will trip you up. The disk's name is C:, and it will take priority over logical device C:, the place where your commands are stored. Depending on your startup-sequence, the system may suddenly seem to have forgotten all its CLI commands. You can always get these commands by giving their full pathname; probably the first thing you would want to do is SYS:C/RELABEL the disk to a name other than C.

There are many common devices; avoid giving their names to disks. Type ASSIGN and you'll see a list of forbidden names, including C:, L:, S:, PRT:, and PAR:.

Fitting CLI to Workbench with IconX. Your CLI skills allow you to do things that are unavailable to users bound to the Workbench. Within limits, you can help users break the Workbench barrier by fitting CLI capabilities to Workbench icons using the support program IconX.

Here's how it works. Using a text editor, write a "script" of things you would like to happen. Next, link this script to IconX. When the icon is double-clicked, the activities written in the script will be performed. You may even set up a multiple-selection situation.

An easy project is to create an icon that brings up a help screen. The script to do this would consist solely of ECHO commands. Let's take this on as a project. The Enhancer documentation isn't quite correct, so you may find the exercise instructive.

Notepad creates an icon (a related .info file), which is why we use it rather than more popular text editors such as Ed or MEmacs. In a moment we'll discover that Notepad has a drawback that we must work around. Don't worry about it—let's start up Notepad (in your Utilities drawer) and write a few ECHO commands. A HELP file for ED can be found in the center of the next page.

Type it in. It's not exhaustive, but it's enough to give us the feel of a help screen. Don't forget that each ECHO line must end with quotation marks. When you've finished typing, drag down the PROJECT menu and select SAVE AS. When asked for a filename, enter RAM:EDHELP. Using the menu again, ask Notepad to QUIT.

Open your ramdisk drawer on the Workbench (double-click on the icon), and you'll see the EdHelp icon there. It's not yet linked into IconX; if you open the icon, you'll be back in Notepad. Instead, select the icon with a single click, and then go to the PROJECT menu and select INFO. You'll get a chart of information about file EdHelp. Browse if you wish; we'll use Default Tool and Tool Types.

Let's go after the default tool area first. Click in the text box, which currently contains something like Workbench:Utilities/Notepad. Type C:IconX in the box, erasing what was there before. Then click on the SAVE box at the lower left. Here's what we have done: Formerly, this file said, "I want Notepad to handle me." Now it says, "I want IconX to handle me."

In theory, you should now be able to click on the EdHelp icon and see your script commands performed. It probably doesn't work; that's because of an oddity in Notepad. We'll fix it by using an oddity in Ed.

Trying the icon is likely to produce a partial output followed by INVALID ARGUMENT TO ECHO. You might suspect that you have typed something incorrectly. If you try to see the file using the command TYPE RAM:HELPED, a curious thing will happen; the file will appear and then vanish. Here's the problem: Notepad always ends pages with character 12, form feed, and this character will always cause the screen to be cleared. The ECHO command does not like this character and responds with the INVALID ARGUMENT error.

How do we get rid of this unwanted character 12? A cute way would be to end the last line with a semicolon character; the peculiar character would stay, but the semicolon would terminate the ECHO command so that following stuff would be ignored. To do the job more cleanly, we'll use the text editor Ed, which throws away unusual characters. Type ED RAM:HELPED, and as soon as the screen appears, save the file by pressing ESC and then X. Your script file is saved unchanged, except that offending character is gone.

After this brief visit from Ed, the icon works properly. Double-clicking produces the desired text. There's some trimming to be done—positioning the window and adjusting the timing. We do these by changing the Tool Types.

Select the icon and then the PROJECT/INFO menu again. Scroll the information in the Tool Types window and delete everything except the WINDOW= line. Change it to WINDOW=CON:10/0/400/160/HelpEd. Click on the ADD box and enter a new line: DELAY=200. This will hold the screen for a few seconds after the information appears. Click on the SAVE box to make it all official. Drag the icon from the ramdisk to a real disk.

Ed Help Script

```
echo " ED CTRL keys:"
echo "A - insert line       B - delete line"
echo "U - scroll up         D - scroll down"
echo "E - top/bottom of screen"
echo "Y - delete to end of line"
echo "G - repeat last extended command"
echo "  ED (ESC) extended commands:"
echo "T - top of file       B - bottom of file"
echo "D - delete line       A/I 's' - insert line"
echo "CS - start of line    CE - end of line"
echo "F 's' - find          E 's't' - edit replace"
echo "RP - repeat following command"
echo "X - save and exit     Q - quit, no save"
```

More Icon Power. We've shown IconX with a simple script file that uses only ECHO commands. Script files are much more powerful than that, of course. You can do powerful things—listing, copying, deleting, or whatever—and if they'll work in a script, they'll often hook into a Workbench icon using IconX.

A quick example will show the power of the system. We'll set up a script to copy the contents of one drawer to another. Unlike the Workbench drag-to-copy, we'll do it the clone way, preserving dates and protection bits. Set up the following script the same way as you did on the previous example. I suggest you use the name RAM:KOPY.

```
.KEY from,to
echo "copy clone all *"<from>/#?*" *"<to>*" "
copy clone all "<from>/#?" "<to>"
```

The asterisk characters in the ECHO line act as escape characters so that the quotation marks can be printed.

The KEY command signals that the script expects to get two names: a FROM drawer and a TO drawer. We supply these names from the Workbench with multiple selection.

Set up a couple of drawers on the ramdisk to test the system. Copies of Empty will do nicely. Put something in each of the drawers so that you can see how the copy has worked. Click Kopy; hold down the SHIFT key and click the FROM drawer; hold down SHIFT again and double-click the TO drawer.

The quotation marks that are sprinkled across the COPY command in file Kopy are needed in case the drawer name contains a space character.

Text Editors. We have used two text editors in this session: Notepad and Ed. Two others come with your Amiga, EDIT and MEmacs, and there are many others available, both commercial and public domain.

Edit is unusual in that it can handle large files and may be driven from a script file. The program holds only a small piece of the file in memory, so it can handle a massive amount of data without using up RAM. The WITH file option allows the editing to be controlled from a file rather than from your keyboard; it can be handy for "canned" edit jobs. Most Amiga users prefer the more visibly interactive screen editors.

MEmacs is in the Tools drawer of your Extras disk; the name stands for MicroEmacs. It has the ability, unique in this group, to handle several documents at once. It is rich with advanced features: It has menus, recognizes the mouse, and it allows macros, key definitions, and command files. MEmacs takes up more memory than ED, and some users who have only occasional need for an editor find its rich array of commands confusing. If you do a lot of text editing, MEmacs may be your best choice. ▲

trends

Perestroika Comes to West Chester

Perestroika is the Russian word for *restructuring,* and from what we've seen so far, the **appointment of Harold Copperman** as president of Commodore's U.S. operations may be just what Gorbachev would prescribe for **long-suffering Amiga owners.** The five-year plans of the two previous hard-line regimes, which tried to bring the U.S. operating company to profitability by paring expenses to the bone, have resulted in shortages of everything but consumer indifference. So in a bold move, Mr. Copperman has decided to adopt some of the techniques used by Western capitalists and to **actually spend some money** to promote the Amiga.

By the time this is printed, you may have already seen some of the effects of these reforms in the form of advertising for the Amiga. A **$20 million campaign** is slated for the fall, with most of the money targeted at the 15 largest markets. And yes, we will finally see some memorable television ads as part of the package. These spots will be directed by Matthew Robbins (of *Batteries Not Included* fame) and be produced by Lucasfilm. The ads will be Lucasfilm's first television commercials ever. But you won't be seeing **Raiders of the Lost Disk.** We've heard that the spot has more of the tone of *ET,* showing how the Amiga's multitasking capabilities help out **a brash kid named Stevie** when lots of friends come calling. These spots will be shown 150 times a week from October through Christmas, on prime time during the new fall season, on **visible sports programs like the World Series** and NFL and NCAA football, and on Christmas specials. The goal is for **92 percent of U.S. adults** to see an Amiga ad 20 times before Christmas. To complement the TV ads, there will be eight-page color print ads in **major magazines like *Time,*** as well as video, music, and graphic-design publications. If all goes well, we may never hear the words **What's an Omega** spoken again. —S.L.

Software Box-Office Boffo

Two Data East USA software titles, *Batman, The Caped Crusader* and *Robocop,* have reached the 100,000-units-sold plateau. The two games are based on motion pictures that have also done well at the box office.

In *Batman,* you must make your way through the streets of Gotham City and across rooftops to destroy The Penguin's master computer. After defeating that feathered fiend, you can try to rescue Robin, the Boy Wonder, who has been kidnapped by The Joker.

The software version of *Robocop* features the same action story line and adventure as in the movie. Old Detroit has been overrun by a gang of thugs, and it's up to Robocop, the half-man/half-machine, to preserve justice.

Tackle via Modem

Professional Football Simulation from MicroSearch offers the chance to compete with another Amiga in the same room or across the country. Playing options include having your computer play itself, trying your luck against a computer opponent, or going up against another player on the same computer or on two Amigas connected by a null-modem cable or connected long-distance by modems.

The program dials up your opponent's computer and automatically exchanges team files, playbooks, and game plans. A chat mode allows you to communicate with your opponent during a game.

Artificial-intelligence routines can alter a team's game plan according to its success or failure. Play results are based on real professional football statistics, probability, your team's personnel, and your ability to call plays. You can also simulate actual games by inputting the current statistics of two teams. The program comes with a standard playbook that contains popular offensive and defensive plays. You can also create plays of your own where each of the 11 players on the field moves according to your assignments. A beginner playbook and a mouse interface can simplify play calling.

The suggested retail price of *Professional Football Simulation* is $34.95.

MicroSearch, 9896 Southwest Frwy., Houston, TX 77074

To the Batmobile, Mr. Spock

Amiga developers are a strange bunch, so it should come as no surprise that the typical dress at a developers conference resembles that of a **Star Trek convention.** Still, I was pretty amused to hear one caped attendee complaining to another about a new level of misunderstanding caused by the Batman movie. Before, he commented, people thought he wore a cape **because he was weird.** Now, he griped, they assumed that he was taking part in the current craze and yelled **Batman!** at him when he walked down the street. —S.L. ▷

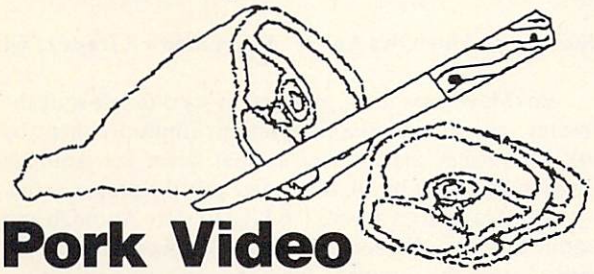
Hot News and Insider Gossip by Sheldon "The Ear" Leemon

New Products edited by Mickey McLean

Jack's New Box

We can only pray that an increased R & D budget will allow Commodore's engineering department to keep up with **former head honcho Jack Tramiel** and his Atari outfit in Sunnyvale. In September, Jack finally introduced the Atari TT, a machine that has been rumored to be in development for the last three years. The current plans for the $1,500 TT call for a **16-MHz 68030** processor, two megs of RAM, a 3½-inch floppy, and three VME bus slots. The specs for the on-board display adapter sound suspiciously similar to those announced for the Abaq Transputer (another Atari unit that's about two years overdue). It has **13 display modes,** including 640 × 480 with 16 colors, and 1280 × 960 monochrome.

The new wrinkle here is that the computer will come with a **built-in genlock device.** Considering Commodore's emphasis on the desktop video field, it would be pretty ironic if rival Atari stole its thunder by releasing the first computer with built-in video capabilities. If Commodore puts on enough manpower to finish the 3000 soon, maybe it could start work on a cost-reduced model that would be like a **68030 Amiga 1000 with standard video inputs and outputs.** Add MIDI jacks and some form of SMPTE encoding, and you'd have a producer's dream machine. **—S.L.**



Pork Video

With Rhett Anderson's **Sliced Ham** format sweeping the nation, is it any wonder that NewTek's **upcoming Digi-View 4.0** software will use much the same technique to improve the quality of digitized images? When questioned about the similarities, though, those nerds from Topeka protested that the only thing they knew about Sliced Ham is that it tastes good on toast. Since most NewTekians live in a **secret underground bunker,** cut off from news of the world, we can only conclude that this is a case of great minds thinking alike. Does this make Rhett **an honorary nerd? —S.L.**

DOS Direct

Consultron's *CrossDos* allows you to read and write 360K and 720K MS-DOS–, PC-DOS–, and Atari ST–formatted disks directly from AmigaDOS. It integrates itself into the Amiga operating system to allow MS-DOS–formatted disks to be transparently accessed from almost any utility or application.

With *CrossDOS,* you can relabel the disk, rename files and directories, obtain disk information, create directories, seek file positions, and allocate more cache buffers. Other features include two ASCII text-filter options, compatibility with Workbench, a kill utility to recover memory after use, format and copy utilities, and an installation program.

The suggested retail price is $30 plus $3 shipping and handling.

Consultron, 11280 Parkview, Plymouth, MI 48170

Aussie Academics Approve Amigas

The Departments of Education in the Australian states of New South Wales, Victoria, Queensland, and the Northern Territory have evaluated and recommended the Amiga 500 and 2000 for use in education from kindergarten through grade 12. Schools in those states may now purchase Amigas with allocated government budget money.

"The Amiga is well suited for education," says Richard Watson, national education manager for Commodore Australia. "It's our job to make it stick as an education computer."

Commodore hopes to have over 20,000 Amigas in the classrooms by the end of 1990 and a 28-percent share of the market. Currently, Watson estimates that the Amiga accounts for 15 percent of the education market.

"In the next 12 months, we need to concentrate on developing good software," he says. "We need to plug the gaps where people have been complaining about a lack of software and build a good platform."

Although the Amiga made the list of recommended computers, it has not been accepted as an all-purpose computer for the schools. Currently, its main uses are for art and video.

Robert Chirgwin, manager of the Northern Territory Computer Education Center, says that what attracted him to the Amiga was its ease of use as opposed to MS-DOS computers, which require learning many complicated commands.

"The point in school, especially in the primary levels, is not to learn about computers, but to provide a unique learning situation," he says. "Students shouldn't have to spend hours learning how to operate the machines."

In Australia, just as in the United States, education administrators look at the bottom line: How much is it going to cost, and how much are we going to get for our money?

Victoria's Senior Policy Officer of Computer Education Malcolm Mathias says, "I have a growing feeling that the Apple II is dying here. It's overpriced. Commodore can come in and sweep Apple aside because the Amiga is relatively cheap, has color, and is versatile. It is important for us to maximize our return for the dollar."

Syndesis Offers More

InterFont version 1.2 has been released by Syndesis, which now includes a professional draw converter and 20 Interfonts.

With the professional draw converter, you can create clip art ready for use with Gold Disk's *Professional Page* and *Professional Draw* desktop publishing programs. As in earlier versions, *InterFont* also includes an Aegis draw converter, a structured drawing format for the Amiga. Twenty InterFonts are also included with the package.

The program allows you to create 3-D text objects for modeling programs supported by the InterChange system such as *Sculpt 3D, Video-Scape 3D,* and *Turbo Silver,* as well as text clip art for desktop publishing programs such as *Professional Draw* and SoftLogik's *PageStream. InterFont* text clip art can include up to 16 colors.

With InterChange, you can translate 3-D objects to clip art. Converting a 3-D object to *Professional Draw* art results in a structured drawing that can be printed without jaggies on a PostScript printer.

InterFont with InterChange retails for $119.95. Present owners can upgrade to the newer version for $10.00.

Syndesis, N9353, Benson Rd., Brooklyn, WI 53521 ▲

ASK ROB PECK

Rob Peck

Animating Bobs

I can get AnimORoutines in the AnimOb structure to work, but when I set the AnimCRoutine in the AnimComp structure, the machine crashes. My AnimCRoutines and AnimORoutines are all the same—they just use WritePixel and then return. I'm programming in C using Manx 3.4a. What must I do to make these work?

John Billford
Ann Arbor, MI

I can suggest a few initial tips, John. Your program might work better if you use long integers. Also, it seems that putting long function calls such as WritePixel( ) into an AnimCRoutine might not be such a good idea. Perhaps it would be better to set a flag somewhere, as a quick operation in the routine; then check *after* Animate to see if you should execute a WritePixel:

```
Animate(animKey, rastport);
if(flag1_is_set) WritePixel(rastport, x, y);
if(flag2_is_set) WritePixel(rastport, x, y);
and so on
```

The example program we have on disk this month is called "BoxMove." The complete source code is found in the Source/AskRobPeck directory on the *Resource Disk*. BoxMove produces two large moving boxes. Each large box is moved by an AnimORoutine. Inside each large box is a smaller box which is moved by an AnimCRoutine.

BoxMove is a work-in-progress. As such, it leaves a few possible questions unanswered—how you tell the system to switch from one view of an AnimComp to another, how you use the RingTrigger value, and how you double-buffer AnimComps. (Because the example is not double buffered, the Bob images flicker slightly as they move.) If there is sufficient interest by readers, we can cover this topic in more detail in a future column. I'm working on a complete AnimOb/AnimComp tutorial for those who are interested, but for now, I'm just going to cover enough of the topic to answer John's question.

For those who haven't yet experimented with the Amiga animation system, let's define a few terms. Animation is achieved through the use of *VSprites* (Virtual Sprites) and *Bobs* (Blitter Objects). VSprites use the sprite hardware of the Amiga, while Bobs use the blitter hardware. VSprites suffer the color, resolution, and size limitations of SimpleSprites but are faster than Bobs.

Built on top of the foundation of Bobs and VSprites is the animation system. An *AnimComp* (Animation Component) adds animation to Bobs and VSprites by allowing you to define several frames for each object and timing information.

An *AnimOb* (Animate Object) allows you to marry several AnimComps together. For instance, a torso, a head, two arms, and two legs, each of which is an animated AnimComp. Neither an AnimOb nor an AnimComp is itself an object to be drawn. Instead, they are structures used to define shapes and their movement.

The *AnX* and *AnY* elements in an AnimOb structure define the base coordinate for each of the structure's AnimComps. The location of an AnimComps' Bob is specified as an offset from this base coordinate. This offset is contained in the AnimComp elements *XTrans* and *YTrans*. Both the base positions and the offsets for AnimObs and AnimComps are specified in 64ths of a pixel, as are the velocities and accelerations of the objects. This makes motion calculations fairly precise, even though the final positioning is possible only in single-pixel positions.

The following formula calculates the actual X position of a Bob:

Bob's X = (AnimOb's AnX + AnimComp's XTrans) / 64

BoxMove uses the C instruction <<6 to left-shift the absolute coordinates six bit positions (multiply them by 64). This scales the number so that when the Animate function divides it by 64, the Amiga gets the proper value.

The Amiga uses a word (16 bits) to store AnimOb and AnimComp coordinates and offsets. But because 5 bits are used to store the number's fractional portion and 1 bit is used as a sign bit (it's possible to have negative offsets), only 9 bits are left for the integer portion. This yields a maximum positive value of 512. So using the Amiga's Animate( ) function, Bobs cannot be positioned on a hi-res (640 pixel or wider) screen unless you are satisfied with an X position of 512 or less. Is this a bug or a feature? You get to decide.

Bobs that are a part of AnimComps are not added to the system directly by the user; they are added by the Animate( ) function. Animate( ) determines which of the Bobs are actually a part of an object and then builds a list of the active Bobs that should appear onscreen. When Animate( ) has determined which Bobs are needed (and which are not needed) it uses the AddBob( ) and RemBob( ) functions (internally) to create a new list. Thus, following the Animate( ) function, you should call SortGList( ) to get the list in order, DoCollision( ) to perform any collision processing, SortGList( ) again (because collisions might have changed the locations of objects), and finally DrawGList( ) to make the objects appear in their new locations, removing any old Bobs (old views of objects) in the process.

The Animate function does nothing with object priorities. It primarily determines which is the active view of an object and where that object should be located. If you want an object to appear in front of another object, you must establish the correct values for the Before and After point-

ers in the Bob data structure. Let's say that you are trying to represent a walking man where both of his arms have three views as they swing to and fro, his body has two views, and each leg has three views. Each of these views has a Bob attached to it.

Fortunately, it isn't necessary to set all Bob Before and After pointers; you only need to set those pointers for the initial side view of the man. In other words, if the man is walking to the right, then his left arm and leg must be shown behind his body, and both the right arm and leg should appear in front of his body. By setting the first draw-position pointers to reflect this, any time that Animate( ) picks an alternate view, it adjusts the Bob Before and After pointers so that the currently active view maintains the correct priorities.

An easy way to interpret a Bob priority setting is to read it as though it were a sentence. For example:

bob[0]->Before = bob[2];

reads as *Draw bob[0] before you draw bob[2].* And

bob[2]->After = bob[0];

reads as *Draw bob[2] after you draw bob[0].*

If you examine the AnimComp and AnimOb data structures (and the Bob data structure also), you'll find a large number of pointer variables. For example, in the AnimOb structure, you find a pointer to the first AnimComp, called the HeadComp. In each AnimOb structure, you find a pointer to the AnimOb to which this AnimComp belongs. The reason for the pointers is to let the system functions walk down the list from object to object and back again (most forward pointers have back-pointers to the object from which they came). It's very important that all pointers have the correct value.

The example BoxMove program has its own functions named MakeAnimOb( ), MakeAnimComp( ), DeleteAnimOb( ), and DeleteAnimComp( ) that tie things together so that the system functions can walk through the object list, finding what they need. Currently, these functions work only with AnimComps and AnimObs that have no alternate views. (Hopefully, I'll be fixing this little bug later.) BoxMove's MakeAnimOb( ), MakeAnimComp( ), DeleteAnimOb( ), DeleteAnimComp( ), moveob( ), and movecmp( ) functions are listed at the end of this article. The entire BoxMove source code may be found on the *Resource Disk.*

As you can see, using Bobs and VSprites requires extensive initialization. However, you can make your task much easier if you build a set of functions like MakeAnimOb( ) and MakeAnimComp( ). And though the initialization may be a pain, once everything is created and initialized, moving the objects the way you want becomes a simple matter of definition and timing.

If you have a programming question or problem that you'd like answered, write to Ask Rob Peck, COMPUTE!'s Amiga Resource, *P.O. Box 5406, Greensboro, North Carolina 27403. We regret that, due to the volume of mail received, we cannot respond to every question.*

BoxMove

```
/* MakeAnimOb:

X and Y  are initial positions for the object, they range from
         X = 0 to 511 and Y = 0 to 511 because of the way that
         the anim system represents the positions and velocities.

prevob   Are there others created already? If so link to this one.

headcomp is the main AnimComp for this object.  It will
         probably have a 0,0 offset from the X and Y we have here.
         There is no object physical definition for an AnimOb;
         it is only a concept.

routine  This is the address of the routine to run when this object
         is being considered for drawing (it's run before things
         get positioned).

         The function returns an address of a properly initialized
         AnimOb if OK, 0 if not.
*/

struct AnimOb *
MakeAnimOb(x, y, prevob, headcomp, routine)
WORD x, y;
struct AnimOb *prevob;
struct AnimComp *headcomp;
WORD (*routine)();
{
     struct AnimOb *ob;
     ob = (struct AnimOb *)AllocMem(sizeof (struct AnimOb),
          MEMF_PUBLIC | MEMF_CLEAR);
     if(ob == 0) return ((struct AnimOb *)NULL);

     ob->AnX          = x << 6;     /* hhhhhhhhhh.ffffff */
     ob->AnY          = y << 6;     /* vvvvvvvvvv.ffffff */
                        /* 16 bit signed binary fraction */
     ob->HeadComp     = headcomp;
     ob->PrevOb       = prevob;     /* link them together */
     if(prevob) {
       prevob->NextOb = ob;
     }
     ob->NextOb       = NULL;     /* just in case */
     ob->AnimORoutine = routine;
     return(ob);
}

/* MakeAnimComp:

   X and Y are offsets as compared to the main position of
           the AnimOb of which they are a part.

   headob  is the AnimOb to which this component will be attached.

   prevcomp is a pointer to the previous component that
           we added to the list of AnimComps.  This function
           not only creates an AnimComp, but also can link
           them together if we tell it the proper pointer value.

   prevseq and nextseq are pointers to the previous and next sequential
           views of an object if there is more than one view available.


   timer    is the initial time value which is set to zero if the object
            has no alternate sequential views or should never switch to
            them.  Some external function could trigger a change
            from zero.  When the system counts from "timer" to zero,
            the view is supposed to change.  Because of a bug in
            the initialization done in the current version of this
            function, a sequential view change crashes the system.
            This will eventually be fixed but is not working now.

    routine is a pointer to the AnimCRoutine. This function should
            be performed each time Animate() is called and this
            AnimComp, if active, should call this function for whatever
            reason the user has designed.

    The returned value is a pointer to an allocated memory area that is
            initialized as an AnimComp and is linked to a previous
            AnimComp if we provided a non-null pointer.  If there isn't
            enough memory available, the pointer is set to NULL.  The memory
            must be de-allocated when finished (that's what DeleteAnimComp
            is for).
*/

struct AnimComp *
MakeAnimComp(x,y,bob,headob,prevcomp,prevseq,nextseq,timer,routine)
WORD x, y;
struct Bob *bob;
struct AnimOb *headob;
struct AnimComp *prevcomp, *prevseq, *nextseq;
long timer;
WORD (*routine)();
{
     struct AnimComp *comp;
     comp = (struct AnimComp *)AllocMem(sizeof (struct AnimComp),
          MEMF_PUBLIC | MEMF_CLEAR);
     if(comp == 0)
     return ((struct AnimComp *)NULL);

     if(bob) {
        bob->Flags    |= BOBISCOMP;
        bob->BobComp   = comp;
        comp->AnimBob  = bob;
     }
     else {
        DeleteAnimComp(comp);
        return ((struct AnimComp *)NULL);
     }
     comp->XTrans   = x << 6;
     comp->YTrans   = y << 6;
     comp->HeadOb   = headob;
     comp->NextComp = NULL;
     comp->Timer  = timer;
     if(prevcomp) {
        comp->PrevComp = prevcomp;
        prevcomp->NextComp = comp;
     }
     if(prevseq) {
        comp->PrevSeq      = prevseq;
        prevseq->NextSeq   = comp;
     }

     if(nextseq) {
        comp->NextSeq      = nextseq;
        nextseq->PrevSeq   = comp;
     }
     comp->AnimCRoutine = routine;    ▷
```

```
    return(comp);
}
struct AnimOb *animob0, *animob1;
struct AnimComp *ac[6];

#define DeleteAnimOb(anob)    FreeMem(anob, sizeof(struct Animob))
#define DeleteAnimComp(ancmp) FreeMem(ancmp, sizeof(struct AnimComp))

/* Here is a move-the-AnimOb function that we can share.
 * Because the system does not pass the address of the AnimOb,
 * we have to figure out a way to move the correct object.
 */

WORD *moveob(n)
LONG n;
{
    struct AnimOb *an;
    SHORT i;

    if(n == 0) { an = animob0;  i = 0; }
    else       { an = animob1;  i = 1; }

    an->AnX = xmove[n]+an->AnX;
    an->AnY = ymove[n]+an->AnY;

    if(an->AnX >= (278<<6) ||
       an->AnX <= (0)          ) {
         xmove[n]=-xmove[n];
    }
    if(an->AnY >= (180<<6) ||
       an->AnY <= (0)          )  {
         ymove[n]=-ymove[n];
    }
    return((WORD *)NULL);
}
WORD *moveob0() { return(moveob(0L)); }
WORD *moveob1() { return(moveob(1L)); }

WORD *mvcmp(n)
LONG n;
{
    struct AnimComp *pac;
    pac = ac[n];

    pac->XTrans = xmove[n]+pac->XTrans;
    pac->YTrans = ymove[n]+pac->YTrans;

    if(pac->XTrans >= (22<<6) ||
       pac->XTrans <= (0)       )xmove[n]=-xmove[n];
    if(pac->YTrans >= (14<<6) ||
       pac->YTrans <= (0)       )ymove[n]=-ymove[n];
    return((WORD *)NULL);
}

/* Set the functions without parameters to call the shared
   function mvcmp(). */

WORD *movecomp0() { return(mvcmp(0)); }
WORD *movecomp1() { return(mvcmp(1)); }
WORD *movecomp2() { return(mvcmp(2)); }
WORD *movecomp3() { return(mvcmp(3)); }
WORD *movecomp4() { return(mvcmp(4)); }
WORD *movecomp5() { return(mvcmp(5)); }

void movesprite() { Animate(animKey, srp); }
```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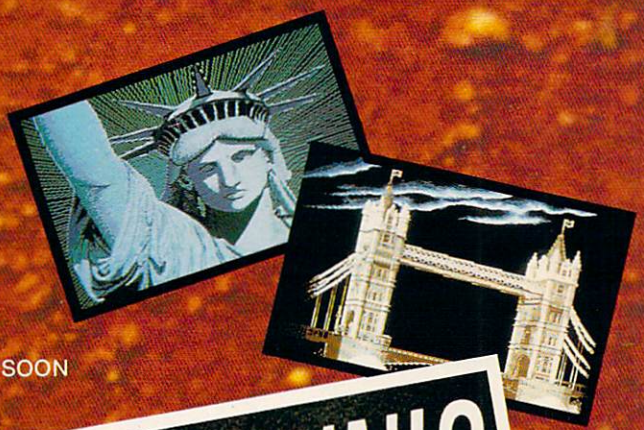

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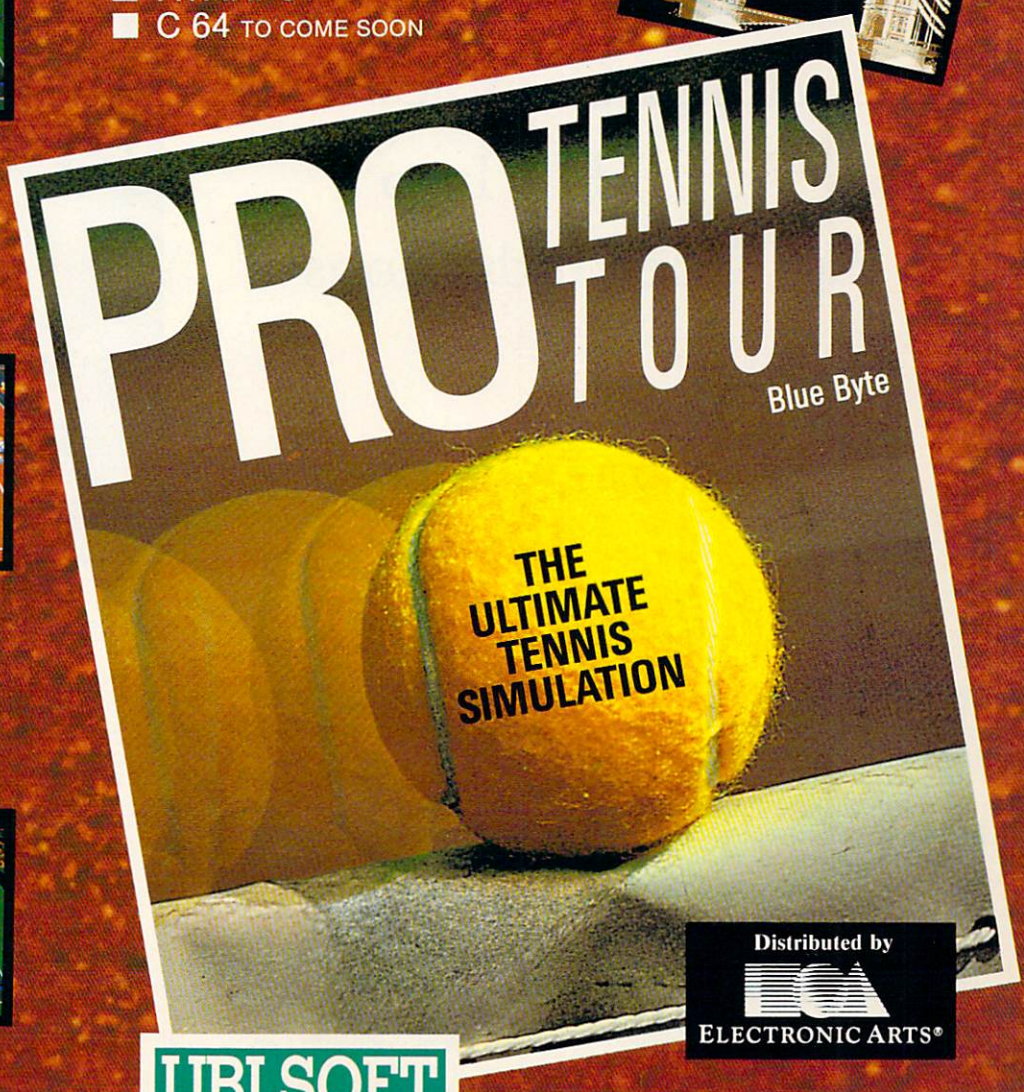

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MOTION

The Hollywood Design Studio Whose Amiga Graphics Turn Ideas Into Big-Time Productions

BEN AND JEAN MEANS

It's Friday night, and once again you're out to take in a movie and do some serious popcorn crunching. You settle in and take a sip of soda as the lights go down. Suddenly a gorgeous title soars and loops across the big screen and you're drawn into the slam-bang advertising world of Hollywood's Coming Attractions. As the preview finishes, you're hooked by yet another tantalizing celluloid glimpse of alternate reality. Oh well, there's always tomorrow's matinee....

Little does the unwary moviegoer know that this preview with its slick animated titles, known as a *trailer* in the industry, could well have been designed on an Amiga at the Burbank graphics design house, Pacific Motion. Partners Rick Probst, Robert Visty, and Barbara Eddy design stunning main titles and promotional graphics with traditional cel animation, edit-bay special effects, and high-end computer graphics rendered on the Bosch, Symbolics, and Quantel Paintbox workstations. But before one minute of expensive studio time gets booked, Pacific Motion has worked out the design of every title, graphic, and effect on its small army of Amigas.

Top Hollywood clients demand the very best, and Pacific Motion has used the Amiga to deliver graphics on time and under budget for films like *Cocktail, Young Guns, Can't Buy Me Love, Three Men and a Baby,* and *Cinderella.* Yet only three years ago, Rick Probst slaved to produce artwork at Cimarron Productions the old fashioned way—with pencils, markers, and airbrush.

Storyboards are a set of still drawings which show the key frames in a motion sequence; the director and producer then have an idea of what the finished graphic will look like, so they can suggest changes or approve final production. Rick was drawing at home on his Commodore 64 when he first realized that computers could take the drudgery

Photo courtesy of Pacific Motion

THE PEOPLE behind Pacific Motion *(left to right)*: Rick Probst, Barbara Eddy, and Robert Visty.

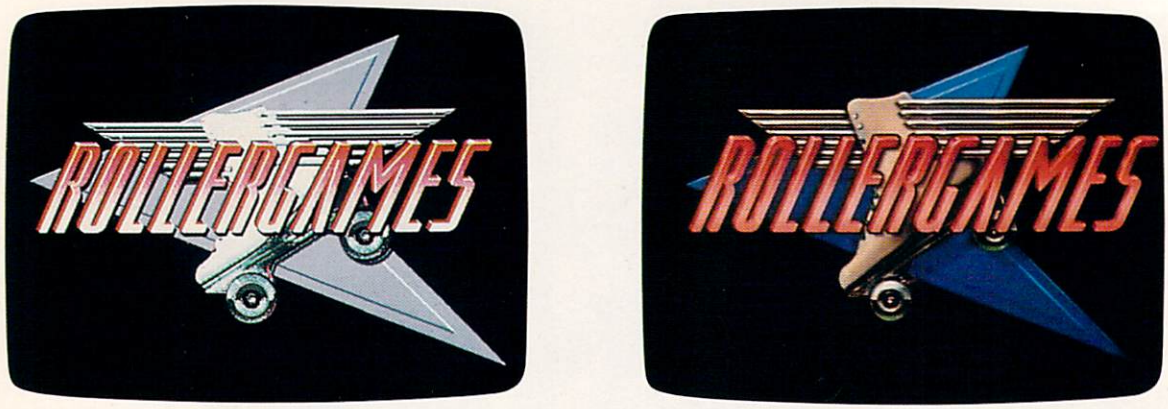
out of tedious storyboarding. But his bosses at Cimarron wouldn't fund his idea, so Probst turned in his resignation, bought an Amiga 1000 and founded Precision Image with producer Robert Visty to produce movie graphics in late 1986. Two years later, they teamed up with Barbara Eddy to form Pacific Motion and expanded into television broadcast work. For the current fall season, their work is appearing on the Disney production of "Chip and Dale's Rescue Rangers," "Rollergames," "Wheel of Fortune," "Jeopardy," "Moments to Love," and the De Niro–Fonda film, *Stanley and Iris.*

We spoke with Probst and Visty at their Burbank offices about how the Amiga helped them grow so rapidly.

RESOURCE: You and the Amiga started out together. What role did the Amiga play in building your own design house?

PROBST: In November of 1986, we rented a little, two-room, converted apartment. I had my airbrush, a compressor, and an Amiga 1000 with only 512K; we started making storyboards on an Okimate 20 printer, which I immediately showed to Disney.

Traditionally, designers drew



The Amiga-generated "Roller Games" logo . . . and the final version, rendered on a Quantel Paintbox.

storyboards with airbrush, color pencils, and markers. The advantage of the computer for storyboards is that you've got a little of each frame in the next frame and the previous frame. So when you're working with a title zoom, you can change the title's scale and stamp it down over each frame of your storyboard to create the zoom quickly and easily.

Airbrushing is slow and tedious. If I were airbrushing this same zoom, I would have had to cut friskets for each scale of type and airbrush it. Then if I pull the frisket off, and it doesn't look good or I want to change the color, I've got to put my stencil back together again and start over. It's messy, it takes all night, and you only get one storyboard done.

On the Amiga, I can do three or four storyboards in the time that it took me to do one with traditional methods. If another designer comes in with just one board and you come in with multiple ideas, then you've got a distinct advantage. So that's why I got into the Amiga in the first place—because I was doing a lot of storyboarding. I discovered the Amiga was a better way to do it.

RESOURCE: Has the Amiga given you an edge in this competitive industry?

PROBST: Yes, . . . with quicker turnaround time for one thing. In this town, turnaround is everything. They walk in the door on Monday and need finished titles on film by Friday! It's hard, but it can be done. Often the client needs to deliver product to networks to meet certain time slots or to theaters for a new movie release. So you've got real deadlines that have to be met.

I used to ask for three days to deliver an airbrushed storyboard and hope that we already had a design idea. With the Amiga, I can usually show the next day; so the Amiga takes two days out of the cycle for rapid turnaround.

VISTY: To sell a design to a producer, you first have to visualize it for him before he'll put a dollar on the table and say "Go ahead." The value of the Amiga over traditional methods is that I can execute an idea very quickly and get it in front of someone. People see what they're going to get, they approve things quicker, they make changes faster. More projects get through to completion.

> I used *DeluxePaint III* for "Rollergames," and it helped me land the account.

Some of our clients really specialize in last-minute changes, so the Amiga has helped us quite a bit there, too. You may have one producer who is working up in Canada while his director may be over in New York. With this system, I have no problem making multiple copies of a printout within minutes and shipping it out overnight, wherever they are. Then everybody can get on the phone, and they're all looking at the same thing. If you're working with an illustrator, you have to send it out to have it shot, get the negatives processed, extra prints made; you lose at least a day. The Amiga removes that time loss from the process and helps us move a project along.

As a producer, I love the Amiga because when I budget a project, I know all my parameters beforehand. So, I have no problem budgeting something, and I have no problem bringing it in on time, which is 50 percent of keeping your client satisfied.

RESOURCE: Why did you build your business around the Amiga, instead of some higher-end system?

VISTY: Part of our strategy as a design firm is to remain a design firm; if I own high-end, high-cost equipment like an animation stand or an edit bay, then I'm in the business of selling that equipment and keeping it paid for, and I'm not a designer anymore. Plus then I have to work on the machine I've bought.

As a designer, I want to work on whatever is out there, whenever I want to, whereas a lot of post-production houses are always designing for the equipment that they have. The Amiga gives us a lot of design latitude that other people can lock themselves out of by being tied to one set of machines. ▷

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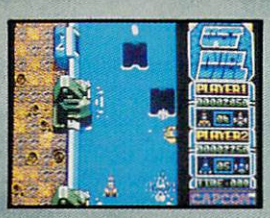

Last Duel Screen Shot.

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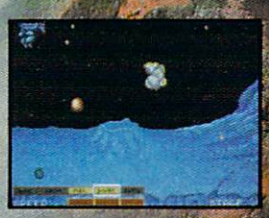

Side Arms Screen Shot.

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The original Amiga title screens designed for the feature film *Land Before Time* and the TV special "Return to the Titanic."

RESOURCE: Has *DeluxePaint III* made a big change in your business?

VISTY: The Amiga allowed us to make a still-frame storyboard, but *DeluxePaint III* has allowed us to do what we're calling *temp animation,* which is a moving video storyboard. Nobody else in the business is doing that. These moving storyboards on tape have been the step that gave us an edge on our competition.

Our temp animations look very much like final output. The classic techniques give a less accurate look, and the client has to interpret a pencil board and imagine what's it's going to look like as a final tape. What the Amiga shows them is very close to broadcast, so it cuts down on the surprises.

PROBST: Some of the people we show designs to are sophisticated enough that when we show them a still storyboard, they get it. But then other people have trouble visualizing what happens between frames. When you put an animated storyboard to tape, then there's less explaining to do. So *DeluxePaint III* is great. Instead of having a graphic pan across three positions for a printout in a storyboard, it pans in over dozens of frames on video.

VISTY: It's also saved us a lot on the cost. We've done animation right on the Amiga using *DeluxePaint III* and printed it out and then taken that and used it as a basis for standard painted-cel animation.

Normally you would pay someone to spend a week and half drawing the cels. Then you'd put the animation on a camera, test it, change the art, test the changed art, and, finally, you'd be ready to go. Well, I don't have to do that; my first printout coming off the Amiga is *done.*

If you're in production, you've saved yourself a week and a half and several thousands of dollars' worth of art labor. Animators and Paintbox artists cost money; I would spend on two of those people for one project what it cost me to buy an Amiga. So do those dollars go into your pocket or do they go into somebody else's pocket?

You can even dump RGB [from the Amiga] directly into the Paintbox and then just clean up the edges, rather than having to repaint an entire image. With the cost of things the way they are, you can save $300 or $400 every two or three hours because you don't have to rebuild your graphic.

> The Amiga has been the ultimate design tool. . . . It does everything.

RESOURCE: What do your clients think of *DeluxePaint III?*

PROBST: I used it for "Rollergames," and it helped land the account. "Rollergames" is a new evolution of Roller Derby which airs opposite "Saturday Night Live." It uses the Roller Derby–format where a lead skater, called the *jetter,* breaks away from the pack and scores points for the other skaters he passes. We've done all the preproduction for the graphic opening, the team logos, bumpers, and the establishing shots of an urban stadium on the Amiga. So all the Paintbox artist had to do was clean up some of the stepping and enhance the colors.

I created the background for the "Rollergames'" electronic scoreboard with the Paintbox, but I used the Amiga to overlay the icons that change for each week's show—like the scores and fuel gauges of time. Jeff Bruette wrote a custom Amiga program to run the time code which updates the clock and scores throughout the show. We'll still have a scoreboard with Paintbox look and feel, but the Amiga will save us the cost of a Paintbox each week.

RESOURCE: What do you use for input devices?

PROBST: My three input devices are the mouse, the digitizer, and the Easyl. I sketched the "Rollergames" electronic scoreboard first on paper to get everything worked out; then I put it under the camera, digitized it, reduced the colors in *Pixmate,* and started drawing on top of that with the mouse.

Recently I was working on some Chip and Dale images that Disney sent over. I just laid those down on the Easyl and traced over them with a single-pixel brush; the input of Chip and Dale was really good, better than I would have gotten by digitizing.

For freehand line drawing, I'll use the Easyl; if I want a photo-quality capture, I'll use Digi-View. Or I can just start with a font. I bought the *Masterpiece Font Collec-*

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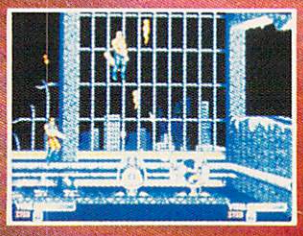

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tion, which is fabulous for what I do because they're all large, 2½-inch tall fonts in hi res, which is what I need for title design and title manipulation.

RESOURCE: What other software and hardware do you use?

PROBST: I just got an upgrade of *DigiWorks 3D,* which traces lines around my type. Now I can translate bitmapped images of type and create my own 3-D fonts from them. It's a fabulous piece of software.

I also love *Elan Performer.* When I was in Detroit for the Broadcast Promotional Marketing Executives (BPME) conference, I had almost a whole keyboard hot-keyed. The first six function keys ran animations, and then the rest of the keyboard was all still images. I could go to any animation by just hitting one key, or, if I wanted to stop and talk to someone, I'd just hit the space bar and the whole thing would just loop through all the animations and then the still images. It's a great demo tool.

The machine I had in Detroit had the GVP 030 card, 4 megs of 32-bit RAM, and two 2-meg cards. With over 9 megs in the machine, I could load animations and still images all day long for seamless editing, and

Pacific MOTION

Elan Performer never had to access a disk during the performance. So, the more memory, the merrier with that program.

RESOURCE: What makes the Amiga such a good design tool?

PROBST: The advantage of the Amiga is that you get the idea out of your head onto the screen quickly before the next idea comes along. You're not losing ideas to markers or airbrushing or elaborate technology. When I design, I'll just start playing with some type. I'll lay an outline on it, maybe put a texture on it, and then map the texture with a *DeluxePaint* stencil. By then, I've got another idea and the first one's saved, so I can take that picture and try it another way. The Amiga is interactive like that; it works with you. If you have to wait for things, it cancels that process.

RESOURCE: What effect will the Amiga have overall in this industry?

PROBST: With the Amiga's low-cost stance in the market, any local cable station can do all kinds of things with it. Our local cable station has some terrible onscreen graphics that look like they were done by some cheapo IBM paint program. Super-jagged-out lines, really bad colors—you can see the limitations right away.

The Amiga has all kinds of growth potential with UNIX support coming out and X Windows. The artist in the next office has an Iris workstation running his own software, called *Prism.* I could create files of 3-D objects in *Sculpt 4D,* hook up an ethernet, send those objects to his VAX and render them about a minute a frame. Once we install the link, the possibility becomes reality for creating front-end workstation design on the Amiga.

RESOURCE: What has the Amiga done for your business?

PROBST: The Amiga has been the ultimate design tool, and I'm loyal to it for that. It does everything; when I want to work on an idea, I can pretty well see what it's going to look like. I can do things I just couldn't do before. It's a great decision-making interface, and I think it's going to be hard to beat. ▲

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WEIRD SOFTWARE STRANGE PERIPHERALS

ARLAN LEVITAN

No one knows exactly where they come from or why they're here. Some say that they are spawned by the same secret societies that spawned cheese-flavored dog food, polyester leisure suits, and the nomination of Dan Quayle to the 1988 Republican ticket. Their presence is known to but a few, although our numbers are growing with each passing day.

Listen to me! Disregard my glazed eyes and faltering speech. Millions of computer users pound away at keyboards and manipulate their mice without the slightest inkling of what is happening! I tell you, weird Amiga software and strange peripherals walk among us. Give me but a moment of your time and be forewarned!

The year was 1983 and the videogame craze was in full swing. The twice-yearly Consumer Electronics Show had degenerated into an electronic circus. Captain Sticky and Mr. T graced booths where game titles based on beloved classics such as *Porky's* and *Texas Chainsaw Massacre* were hawked to retailers. Pony-tailed Jay Miner (the father of the Atari 800 custom chip set) and a handful of friends had already left Atari to build the Amiga 1000. In an attempt to augment the funding of its new computer, the fledgling company released the first weird products to bear the Amiga name.

The game business was booming, offering ready cash to manufacturers who could supply a jaded public with novel accessories. The Atari 2600 and Commodore, Atari, and Texas Instruments home computers all used somewhat similar game controllers, presenting a ready market for millions of joysticks that could weather the gyrations of hyperkinetic 13-year-olds. Most premium joystick manufacturers

concentrated on oversized industrial-strength controllers manufactured from arcade-quality components that could withstand anything short of a direct strike by a tactical nuclear warhead.

HONEY, I SHRUNK THE JOYSTICK

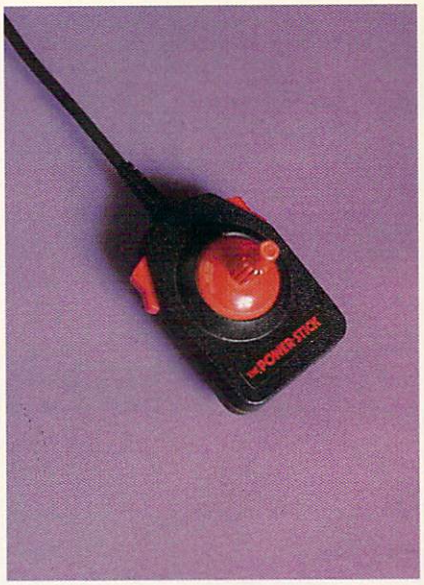
But Amiga, a young company whose promising new model 1000 computer was barely more than a glint in its designers' eyes, had a different idea of what a joystick should be. The Amiga Power Stick was markedly unique, both in appearance and play action. The Power Stick, looking more like an elephant head shrouded in an executioner's mask than a joystick, fit quite comfortably in the open hands of adolescents and swam in the mitts of adult users. The theory behind the Power Stick was that a smaller controller with shorter absolute stick travel provided quicker and more precise control. It was also one of the first joysticks to offer dual fire buttons that made the stick easy for both left- and right-handed twitch-and-blast fans. The weirdness of Amiga was just beginning. . . .

BALANCE OF POWER?

The Power Stick may have been somewhat eccentric, but the company's next product, the Amiga Joyboard, was downright lunatic for its time. The Joyboard was a joystick that you stood on, substituting changes in body inclination and center of weight for stick movement. The Joyboard would allow you to twist and turn your way through announced, but seldom seen, VCS vapor titles such as *Mogul Maniac, Surf's Up, Off Your Rocker,* and *S.A.C. Alert.* The Joyboard met with far less success than did the Power Stick, most likely because of its tendency to fail to respond at critical moments, a condition that came to be known as "Toe Jam" by Joyboard owners.

Microcomputing marched on. As the home computer wars started to fizzle, Amiga was acquired by Commodore Business Machines, an event considered by many industry watchers to be plenty bizarre in its own right. In an effort to solidify the weirdness quotient of its soon-to-be-released computer, Commodore hooked up with Synapse Software, whose Hawaiian-shirted president Ihor Wolosenko advocated making conga-line dancing an Olympic event.

Wolosenko turned the task of creating a unique game for a unique computer over to programmer Bill Williams, who stayed secluded in his geodesic-dome house in rural Michigan. The result was *Mind Walker,* a game that deserves a hallowed place in the Amiga Hall of Weirdness rather than in the bargain bins of marked-down software, where it is often found today.



Joystick? Or elephant head shrouded in an executioner's mask? You decide.

When you're not using them with your Amiga, the X-Specs are also suitable for arc welding.

PLAY IT AGAIN, SIGMUND

Mind Walker may not be a tour de force of Amiga graphics and sound by today's standards, but it has a game concept that Freud would have loved. Consider this synopsis from its instruction booklet:

First you must trace a Path of Coherent Thought through the chaotic and jumbled terrain of your Mind. . . . The mysterious connection to the physical Brain is unlocked. . . . Make your way through the maze of flashing neurons to your Shards of sanity. . . . Carry those Shards into the deep Subconscious, where . . . you try to become whole again.

It not only reads weird, it plays weird. Rumor has it that Commodore execs were somewhat aghast when they first saw *Mind Walker.* It's likely that no one ever told them that Williams' former hits included sagas of tree-planting Druids and salmon racing upstream to spawn. To its credit, Commodore produced one of the first manuals ever graced with custom, full-color artwork. Today *Mind Walker* stands on its own as one of the first New Age games ever written, complete with a Philip Glass–like soundtrack.

THE DANGERS OF RGB

The Badge Killer Demo contest is an annual event that solicits state-of-the-art demonstration programs from professional Amiga developers. In 1987, Joel Hagen blew away an impressive field of competitors with the finger-in-cheek *RGB Hazard* demo. *RGB* explored the dangers of dermal plasticity associated with frequent exposure to computer monitors. Beginning as a mildly interesting health warning, the demo rapidly degenerates (along with the subject's face) into one of the funniest and extraordinary computer gags ever seen. Rumors that *RGB Hazard* was funded by a grant from the American Society of Plastic Surgeons are completely unfounded.

ATTACK OF THE 3-D SPUDS

By the time Haitex's X-Specs 3-D glasses were released in 1988, we had all seen liquid-crystal-shutter 3-D viewing systems before. Similar glasses may have been available for Japanese videogame systems, but it's safe to say that no one had ever seen a game like John Schultz's *Space Spuds,* a game provided as a demo with the software for the X-Specs. *Space Spuds* places the

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player at the helm of a cruiser in space that must blast succeeding waves of 3-D mutating Idaho russets, layer cakes, pizza, and other cholesterol-laden fast food. As you are hit by more and more flying food, a digitized 3-D Barbie doll swells from its normal anorexia to its Goodyear blimp mode. When you're not using them with your Amiga, the X-Specs are also suitable for convincing your friends and family that you're studying arc welding in your spare time.

PSYCHEDELIC AMIGA

Sixties nostalgia is coming back with a vengeance as of late. Chalk it up as the flower-power generation's revenge for being subjected to endless onslaughts of Elvis tunes and self-indulgent fifties fantasies such as *Grease.* Get out the love beads, incense, and peace buttons, and slap some Jimi Hendrix on the stereo. Now hook up Visual Aural Animations' *Mindlight 7* to your Amiga. *Mindlight* and its supplied software turn your system into a high-tech color organ, one of the mainstays of sixties psychedelia. After staring at the sound-responsive patterns of color and light on the screen for five hours, you, too, can utter profundities such as *Oh Wow!* and the now-classic *Groovy, Man.*

WHEELS OF FATE

Unfortunately, some weird software (and hardware) never makes it out of the incubation stage. Very Vivid's *Mandala* program promised to be the ultimate application for erstwhile air-guitar musicians. *Mandala* was demonstrated at several AmiEXPOs in the past in conjunction with A-Squared Distributions' Amiga Live! realtime video digitizing system. Imagine a number of computer-generated bells superimposed over a Live! image feed on the computer screen. A human subject reaches out in the air. One of the onscreen bells is "touched" by the digitized human's hand and a bell tone is triggered. The possibilities engendered by such a system would have added endless possibilities to Tom Cruise's original living-room romp in *Risky Business* and similar exercises performed by untold thousands every evening. Unfortunately, Very Vivid vanished from the scene before *Mandala* ever came to market.

Some weird software and hardware products are not released; they escape.

Joel Hagen's finger-in-cheek* RGB Hazard *demo explores the dangers of dermal plasticity associated with frequent exposure to computer monitors.

MAKING 'EM SWEAT

Want to know which of your siblings trashed your copy of *Blood Money?* Break out a straight-backed chair, a bare 200-watt light bulb, and hook up the tykes to your Amiga with Aminetic's People Meter. It may not be a full-fledged lie detector, but its software does react to changes in skin conductivity. Even if you don't get the guilty party to 'fess up, they're likely to never mess with your Amiga again. Just make sure you pause once or twice after key questions, throw some sharp looks their way, and mutter something about "turning up the voltage" under your breath.

LOOK MA, NO HANDS

Hard-core Amiga couch potatoes don't have to settle for $100 programmable remote controls to replace dozens of controllers for their video and audio equipment. Why bother, when Interactive System's $495 Mediaphile Infrared Controller for the Amiga can eliminate the stress and strain of picking up a remote and flipping channels to catch your favorite shows?

NAME THAT TUNE

No analysis of weird Amiga software would be complete without considering the case of Silver Software's *DNA Music* generator. I don't know about you, but I've always wanted a

Marketed as "Amazing New Technology!," the Amiga Joyboard was the first (and only?) joystick for the feet.

program that plays a grating stream of bleeps and bloops based on the mononucleotide sequences found in various flavors of deoxyribonucleic acid, accompanied by an ever-growing blocky onscreen cityscape. I can hardly wait to get a look at the other programs in the series, *Fractal Music* and *Amino Acid Music.*

I'm afraid that's all the time I can spare—they're still looking for me, and I have to keep moving. Stay on your guard, watch for the weirdness, and warn your friends! It's 11:00 p.m. Do you know where your Amiga is? ▲

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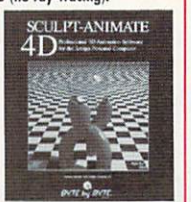

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PART II

Amiga BASICs

Dale McBane

Last issue, we benchmarked the most popular BASIC compilers for the Amiga. This issue, we take a closer look at each package.

AC/BASIC

AC/BASIC is a multipass BASIC compiler that claims total compatibility with Amiga Basic. The compiler itself is menu-driven and easy and intuitive to use. It can be run from either the CLI or the Workbench. The only objection I have to *AC/BASIC*'s interface is that it doesn't provide a file requester.

AC/BASIC proved to be the most Amiga Basic–compatible of the BASICs presented here. In compiling over 70 Amiga Basic programs, it choked on only 2. Both of these had syntax errors buried deep in the code where they were apparently never executed.

The programs generated by *AC/BASIC* are very solid and rarely caused a Guru Meditation. The commands that gave *AC/BASIC* the most trouble were speech and sound commands. Occasionally, sounds would cut off too quickly or would not sound at all. Speech proved to be extremely annoying: When it worked, it worked flawlessly. When it didn't, it would Guru.

The *AC/BASIC* manual is well organized and fairly complete. The authors could have spent more time explaining the compiler options and their usage and less time rehashing the Amiga Basic manual.

Overall, I give *AC/BASIC* an average rating. If you're looking for speed, you can do better, but if you want Amiga Basic compatibility, *AC/BASIC* is unequaled. I suspect that compatibility was what *AC/BASIC*'s designers were striving for, and they succeeded brilliantly.

F-BASIC

F-BASIC is a single-pass BASIC compiler that was designed with one thing in mind: speed. (*F* must stand for *FAST!*) It accepts ASCII text files as input and generates 68000 machine code programs as output. *F-BASIC* performs several local optimizations including short-circuiting logical ANDs and ORs and using registerized variables where appropriate. *F-BASIC* blew away its competitors in nearly every benchmark. To give you an idea of just how fast it is, the compiler itself was written in *F-BASIC*.

The *F-BASIC* system disk includes the compiler, a linker, several runtime libraries, and a symbolic debugger. All of the programs in the package must be used from the CLI. The programs generated by FastCom are also CLI-based.

Besides its speed, *F-BASIC* has two major features that make it stand head and shoulders above the other BASICs: records (called *structures* in some languages) and a symbolic debugger.

On a machine like the Amiga, writing a useful program without records is like pulling wisdom teeth without the anesthetic; it's painful. *F-BASIC* is the only BASIC for the Amiga that supports complex variables. To its credit, Delphi Noetic has built a powerful programming tool. If you want to do some serious programming on the Amiga, but you don't want to take the time to learn C or Modula-2, then *F-BASIC* is the language for you.

The debugger, *SLDB*, can cut your debugging time in half. You can display source code, machine language, variables, records, or processor registers. You can set breakpoints before any line of the code, or you can set breakpoints that stop the code after a specific number of counts. You can run the code until it hits a breakpoint, or you can single-step through it line by line. *SLDB* even allows you to alter variables, registers, or memory locations while your program executes. *SLDB* is a very valuable programming tool. Once you've used it you'll wonder how you got along without it.

I don't mean to make *F-BASIC* sound as if it's the perfect BASIC compiler; it's not. *F-BASIC* has its problems. In some ways, *F-BASIC* is more like Pascal than BASIC. It requires a PROGRAM statement as the first line of the program, all variables must be declared before they can be used, and strings are implemented as arrays of characters. These differences between *F-BASIC* and Amiga Basic can drive you up a wall until you get used to the syntax.

One major problem I had with *F-BASIC* involved reading strings from a disk file. No matter how I wrote the code, I couldn't get *F-BASIC* to read more than about 7000 characters from a text file. The input routine would perform flawlessly up to a certain point and then the machine would Guru with seemingly random error numbers. I never did figure out how to get around the problem, so, to implement the sort benchmarks, I had to split the integer and string files into several smaller files.

The *F-BASIC* package includes a user's manual, a source-level-debugger user's manual, and a version 2.0 upgrade manual. It also includes a system disk, a system upgrade disk, and a sample programs disk. Although they were well indexed, I found the *F-BASIC* manuals incomplete and difficult to use. Part of the problem was the fact that some information was simply left out of the manual. Another part of the problem can be blamed on the binding of the manual; if you don't turn the pages carefully, you'll destroy them.

The rest of the problem was the page layout. The manual looks as if it were printed on 8½ × 11 inch sheets of paper using a good typewriter. There is very little white space on the pages, and there are no type changes except to underline section headings. The information you're looking for is usually in the manual, but you may have to look awhile before you find it.

Overall, I give *F-BASIC* an excellent rating. Even though the manuals are difficult to use and the Workbench isn't supported, I found myself liking the language almost against my will. There's something intriguing about a compiler that can deliver raw speed when all those around it are dragging their feet.

GFA-BASIC

GFA-BASIC is the only interpreter in the field of new BASICs. Written by GFA Systemtechnik in West Germany, *GFA-BASIC* is published by Antic Software in the United States. Like *F-BASIC*, *GFA* is a new language that is almost completely incompatible with Amiga Basic. *GFA* is, however, compatible with *GFA-BASIC* 2.0 and 3.0 on the Atari ST. I transferred several programs from the ST, converted the VDI and XBIOS calls into their Amiga equivalents, and had working programs—and the whole process took very little time.

Having used *GFA-BASIC* on the ST, I immediately felt at home with *GFA* on the Amiga. The editor on the two machines is nearly identical. It has several features—among them automatic case correction, automatic indention of lines, fast block operations, and fast search-and-replace—that take the work out of editing programs. The editor also does some things that make editing frustrating (holding the cursor on a line until the line is syntactically correct, for example).

For an interpreter, *GFA-BASIC* is incredibly fast. In most of the benchmarks, *GFA-BASIC* fairs very well against the compilers. If GFA Systemtechnik lives up to its promise, we should have a *GFA-BASIC* compiler very soon. If the compiler is as good as the interpreter, the *GFA-BASIC* compiler should rival *F-BASIC* in speed.

GFA-BASIC supports many of the Amiga's features with built-in functions and commands, but its interface with the Amiga's software libraries is a thing of beauty. GFA Systemtechnik included a program on the system disk that converts standard Commodore FD files into lists of *GFA-BASIC* subroutines. To call a library routine from *GFA*, you simply dimension an array called *m68%* and include the corresponding subroutine in your program.

GFA-BASIC boasts many low-level commands that you wouldn't normally expect to see in a BASIC language. Commands such as BCLR, BSET, BCHG, ROL, and ROR make programming at the bit level not only possible, but also quite easy. This language has many features that you wouldn't miss if you've never had them, but once you have them, you won't want to give them up.

For all its many features, *GFA-BASIC* is still missing complex variables (records or structures). Without them, this is a wonderful language to program in. With them, it would be a dream come true.

For an overall rating, I give *GFA-BASIC* an excellent score. Of the BASICs I've used on the Amiga, *GFA* is by far my favorite. If GFA Systemtechnik comes through with the compiler, this will be the ultimate Amiga programming environment. (Well, almost. It still doesn't support structures.) You could develop your programs in the interpreter, where turnaround is almost instantaneous. Then you could compile the finished program to produce a freestanding final product.

HiSoft BASIC

HiSoft BASIC is a multipass, Amiga Basic–compatible BASIC compiler. The *HiSoft* system includes an integrated editor and compiler. If you prefer to use one or the other, each program can be run from the CLI or the Workbench.

The *HiSoft* editor reminds me of the Amiga Basic editor. The cursor-control keys are similar, as is the method for highlighting text for cut-and-paste operations. *HiSoft*'s editor, unlike the Amiga Basic editor, is fast. Editing text is smooth and presents few surprises. The only fault I could find with the editor was that the file requester doesn't remember which directory you were in from one use to the next.

HiSoft BASIC claims to be Amiga Basic–compatible, but I found many Amiga Basic programs that it couldn't compile. Many could be made to compile by rearranging the program slightly or by changing some of the compiler options. The code generated by *HiSoft* tends to be smaller than that generated by *AC/BASIC*. The code generated by the two compilers tends to run with approximately the same speed, except when strings are used. Apparently, *HiSoft BASIC* uses static strings to speed up text operations. As shown in the last issue, *Hi-*

Soft's string-sort benchmarks run 400–700 percent faster than those of *AC/BASIC*.

HiSoft BASIC, like *AC/BASIC*, has problems compiling programs that use sound or speech. *HiSoft* has even more trouble than *AC/BASIC*. I couldn't get one program that uses sound or speech to compile and run without causing a Guru. The programs generated by *HiSoft BASIC* that didn't use speech or sound were rock-solid.

HiSoft also had problems with programs that used GET and PUT with arrays for the shape variable. I suspect that this problem was corrected in the latest release of the compiler.

Something that I really like about *HiSoft* is the extensions to Amiga Basic. *HiSoft BASIC* adds SELECT–CASE statements, INCrement and DECrement commands, and REPEAT–UNTIL, among others. The additional commands make implementing several of the benchmarks much easier.

The *HiSoft BASIC* manual is very well organized and complete. It begins with an introduction to the compiler and then proceeds to an excellent tutorial followed by a detailed description of how to use the compiler. The remainder of the book is devoted to the command-reference section. Each command is described in detail, and examples of how to use the commands in a program are provided.

Overall, I give *HiSoft BASIC* an above-average rating. Even though its performance was almost identical to that of *AC/BASIC*, I think that *HiSoft*'s new commands and excellent manual raise it above its closest competitor.

True BASIC

True BASIC is a BASIC compiler written with a design philosophy that's quite different from those adopted by the designers of the other BASICs presented here. *True BASIC* was designed by the creators of the BASIC language itself. Their goal was to write a standard BASIC that would run the same program on any machine that had a *True BASIC* implementation. This design made comparing this language with the other Amiga BASICs very difficult. It's the old apples-and-oranges cliché again.

I can't help but wonder what market *True BASIC* is targeted at. As a programmer, I would never use a language that couldn't address the special features of the operating system under which it runs. I guess *True BASIC* is well suited to academic uses, but I personally did not like the language.

True BASIC includes a reference manual, a user's manual, and the master system disk, containing the compiler and dozens of sample programs. In addition to the standard package, I had the runtime package, which includes a small manual and the runtime disk.

The user's manual presents *True BASIC* in a prosaic form that will be helpful to neophyte programmers. It also presents information that is specific to the Amiga. The reference manual describes the language and then proceeds to describe groups of related commands. Both of these manuals are beautifully written and very thorough. They are by far the best computer manuals I've ever seen.

The *True BASIC* language is both very similar to standard BASIC (the authors would argue that *True BASIC* is the standard) and very different. It's close enough to standard BASIC to allow you to write programs quickly, but different enough to drive you crazy trying to debug them. For example, to print a string to a file in Amiga Basic, you'd use a command such as

```
OPEN "filename" FOR OUTPUT AS 1:PRINT
#1,"This is a string":CLOSE #1
```

The same program in *True BASIC* looks like this:

```
OPEN #1: NAME "filename", ACCESS OUTPUT,
CREATE NEWOLD, ORGANIZATION TEXT
;PRINT #1: "This is a string";CLOSE #1
```

Notice that the command separator has changed from a colon to a semicolon and that colons are now used within commands. The syntax from command to command tends to be very similar, but if you're used to another BASIC, programming in *True BASIC* will prove to be an interesting experience. Many of *True BASIC*'s commands have the same name as their standard BASIC counterparts, but many are totally different.

Like *GFA-BASIC, True BASIC* has several commands that you wouldn't normally expect to find in BASIC. Unlike *GFA,* the unexpected commands are very high-level. For example, *True BASIC* has commands for reading matrices from disk or from DATA statements; for inverting, multiplying, and otherwise transforming matrices; and for combining graphics primitives into the equivalent of graphics subroutines that can be called with the DRAW function. *True BASIC* generally tends to hide the computer from the programmer and the user. As I said before, it might be appropriate for academic applications, but writing a machine-specific program in *True BASIC* would be nearly impossible.

True BASIC's best feature is its ability to scale graphics output to whatever scale you need. If the aspect ratio of your computer's display isn't 1:1, you can have *True BASIC* correct it with one command. Thereafter, all your graphics output will be scaled correctly. Graphics commands in *True BASIC* tend to be slower than their counterparts in the other BASICs. I think the reason for this is that *True BASIC* rescales everything. If you're drawing static displays like bar charts or function plots, *True BASIC* excels. If you need to animate shapes, forget it.

Overall, I give *True BASIC* a poor rating. The language can't make use of the Amiga's unique features without linking routines written in another language. Maybe I'm harping on this point, but I think it's important: *True BASIC* is an excellent theoretical language, but, like Pascal, it's simply not very useful for many applications. ▲

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F-BASIC 2.0
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P.O. Box 7722
Rapid City, SD 57709

GFA-BASIC 3.0
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San Francisco, CA 94107

HiSoft BASIC Professional
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3. The deadline is February 28, 1990. All entries must be received at our offices by this date. Programs submitted after this date will still be considered for publication but will not be entered in the contest.

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6. Entries must be submitted on 3½-inch Amiga disks with both the runtime and the source code included.

7. Entries must be accompanied by an article that explains how to use the program, what it does, and so on. If your program employs any new or unusual techniques that you think will be of interest to other Amiga programmers, you can also describe how the program works.

8. Submissions that do not win a prize and are not accepted for publication will be returned only if accompanied by a self-addressed, stamped mailer.

9. All judging will be handled by the staff of COMPUTE! Publications, Inc. All decisions regarding contest entries and acceptance will be made solely at the discretion of COMPUTE! Publications, Inc., and all decisions are final. This includes decisions regarding creativity, similarity among entries, and so forth.

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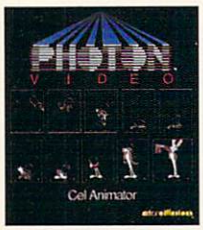

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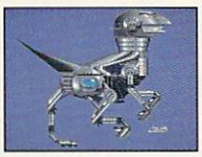

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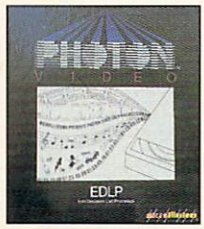

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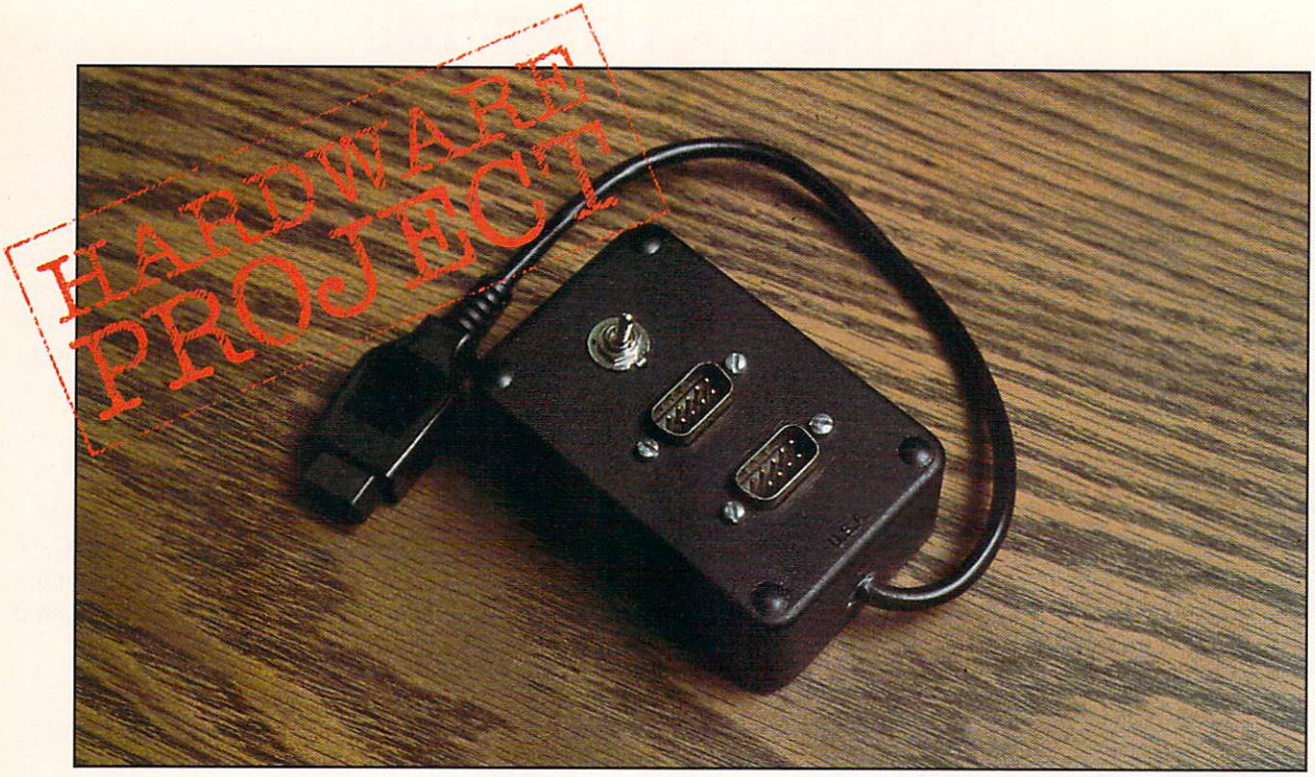


Quick Switch

Joe Rothman

Many Amigas play the dual role of productivity machine and game machine. Unfortunately, one of the input ports plays the dual role of mouse port and joystick port. This leads to a lot of plugging and unplugging, which isn't good for your computer or your peace of mind.

The solution is a switch that lets you keep two joysticks and a mouse plugged in all the time. Such a product is sold commercially as Mouse Master ($39.95 from Practical Solutions, 1135 North Jones Boulevard, Tucson, Arizona 85716). If you are more adventurous, you can build your own switch.

You can build Quick Switch for about $20. Most of the parts you'll need are readily available at your local Radio Shack store. This is not a very difficult project, but it will require basic knowledge of wire stripping and soldering. You will also need an electric drill or a hot knife. Proper safety precautions are advised.

DO YOUR TWO-PLAYER GAMES GIVE YOU THE MOUSE-AND-JOYSTICK-SWITCHING BLUES? THIS DO-IT-YOURSELF PROJECT—QUICK SWITCH—IS AN EXCELLENT FIRST STEP ON YOUR WAY TO BECOMING A HARDWARE GURU.

Getting Started

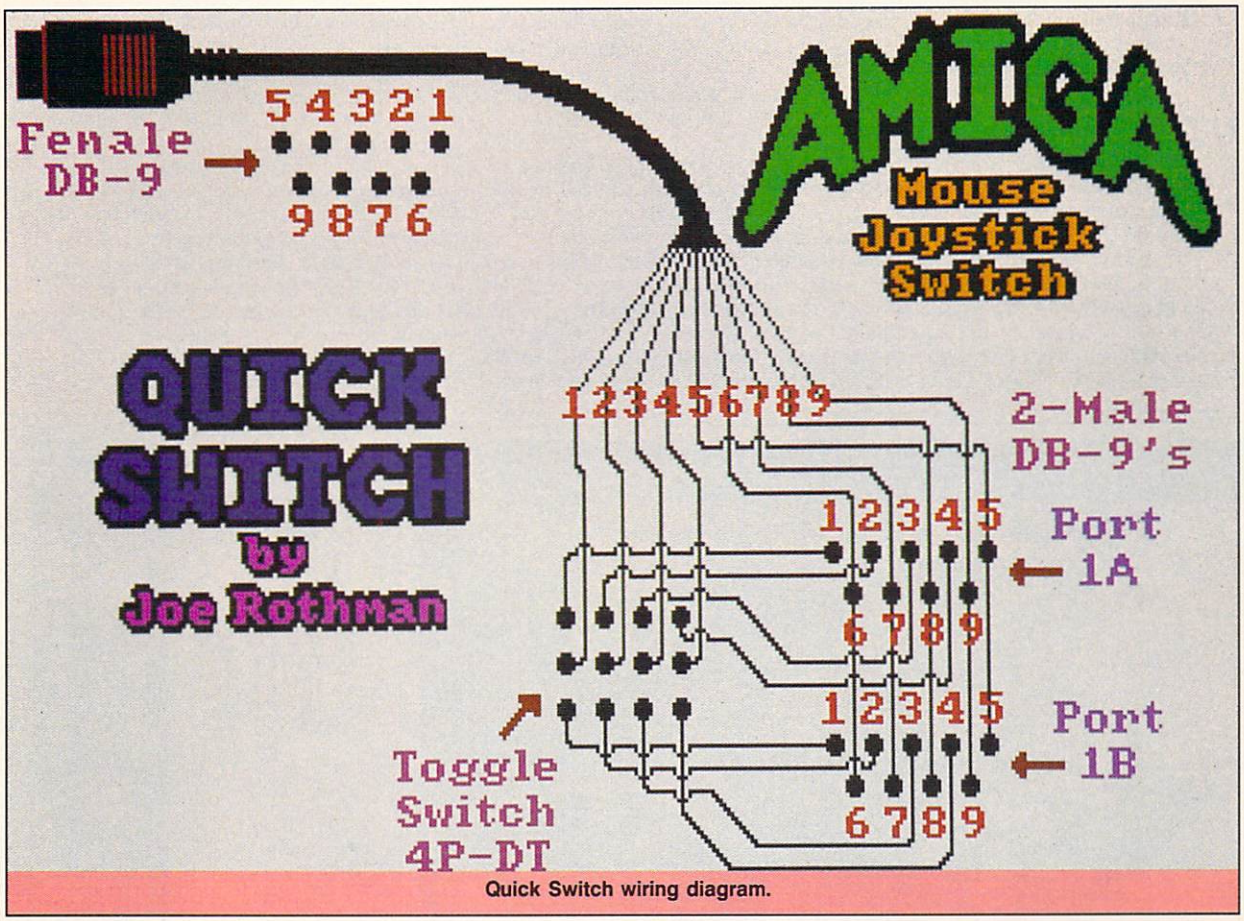
Before you even go to your nearest electronics store, read the entire article, including "Quick Switch Parts." Pay special attention to the notes following the parts list.

When you've bought all the parts you need, and you sit down at your workbench to get started, you'll be faced with the hardest step in building a Quick Switch: making eight holes in the experimenter box. Make a hole for the switch to be mounted in, a hole for the wire to pass through, and two D-shaped holes for the connectors. The round holes are no problem, but the D-shaped holes can be difficult to get right. Use an electric drill with a tiny bit to drill around an outline of the DB-9 connector; then smooth out the edges with a small file. Once you can fit the DB-9 in the hole from the inside without forcing it, drill the holes for its mounting screws. Mount the DB-9s and the switch.

Now the going gets easier. Decide where you will eventually mount your Quick Switch. If you have a large-screen projection TV, you can leave the joystick extension cable long and control your Amiga from across the room. Try plugging your mouse into the extension cable first to make sure it will work with a long cable. Measure the cable from the female end, as it's the one you'll be using. Add an extra three inches to the length you think you need; this is for use inside the box.

Before stripping the end of the cable, pass it through the hole you drilled in the case, from the outside. Strip, twist, and tin all the leads. Tie a simple knot about two inches from the end and use Super glue or its equivalent to glue the knot to the inside of the case. While you're waiting for the glue to set, cut 22 pieces of wire in three-inch lengths and strip about an eighth of an inch of insulation from both ends of each piece.

Use a continuity tester or ohmmeter to determine which of the colored wires in the joystick extension cable coincides with which pin on the female DB-9. The female DB-9 pinouts are opposite in arrangement from those of the male. The female is numbered from right to left instead of left to right. This causes all pins to mate with the same number when connected. Take your time and be sure to get these pin and color combinations correct before you start to wire your Quick Switch. If you get them wrong, you probably won't harm your machine, but there are no guarantees, so be careful.



Quick Switch wiring diagram.

Now follow the schematic I have provided and wire up your Quick Switch. In the wiring diagram, the toggle switch's middle row of contacts represent the lines that are switched. When the switch is in one position, those contacts connect with the top row. In the other position, they connect with the bottom row. (Not all switches have their contacts arranged in this fashion, so it's a good idea to check yours with a continuity tester or ohmmeter.) This is how Quick Switch toggles between the two joystick/mouse ports (labeled Port 1A and Port 1B in this diagram).

Be sure to make good mechanical connections before soldering and properly tape all in-line connections. A good rule of thumb when building an electronic project is to test it before you close the case. If it doesn't work, you won't have to reopen the case just to test your connections. ▷

Quick Switch Parts

Following is a list of Radio Shack part numbers, descriptions, and prices for the parts you'll need to build Quick Switch.

Item	Quantity	Part Number	Description	Estimated Price
A	1	270-230	Experimenter box, 3¼″ L × 2⅛″ W × 1⅛″ D	$1.69
B	1	270-1705	Joystick extension	$5.49
C	2	276-1427	9-position male D subconnector, pin type	$1.98
C	2	276-1537B	Same as 276-1427 but with solder cup	$1.98
D	1	278-1306	Hook-up wire, 22-gauge	$3.49
E	1	64-2345	Hook and loop fasteners (Velcro)	$2.19
F	1	No part #	Quad-pole double-throw (4PDT) switch	$6.98
G	4	No part #	Four 4-40 × ¼ screws with nuts and washers	$0.40

Note that there are two item Cs. You will need only two of either, not two of both. The pin-type connectors are easier to use but require a special crimping tool. Most people probably will use the solder-cup type. Item D contains three 30-foot rolls of wire. You can save some money here if you have some 20- or 22-gauge solid wire lying around your house. The gauge is not important, but it would be harder to work with anything thicker. Solid wire is much easier to work with than stranded wire is. You will only need about 66 inches of wire for this project. Item E is totally optional because it's used only for mounting the box to your Amiga if desired.

Item F is not available through Radio Shack. It does not carry any quad-pole double-throw switches. You'll need to go to a specialty electronics supply store for the switch. The mail-order company Mouser Electronics (1-800-346-6873) carries such a switch, part number 10TC290.

There are other types of switches available that you can use besides the standard bat-handled toggle switch. There are rotary switches, rocker switches, and slide switches that can be used instead. The important thing is to get the correct number of switched lines. The correct switch will have three rows of 4 contacts, for a total of 12 contacts; and the switch lever will have only two positions. Item G can be purchased at a hardware store if not available from an electronics-supply store.

You can get substitutes for all the other items as well, but be sure to get an exact equivalent. One area where you might have trouble is the joystick extension cable, item B. Make sure the one you buy has all nine pins connected on both ends. Some joystick extensions have several wires missing because most joysticks don't use all the wires. You can tell if all nine pins are connected by looking at the holes on the female end of the extension cable. If any of the holes appear larger than the rest, there is no connection on that pin. For the same reason, the wire from an old joystick will not work. However, the wire from an old Coleco Vision or Adam Computer controller will work fine. ▷

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Why It Works

What Quick Switch actually does is simple. It simultaneously switches all four directional signals between the mouse and the joystick. You can switch from mouse to joystick and back at any time. I've never seen a situation when a Quick Switch didn't work for me, and I have been making them for over two years. There probably would be no harm in just constructing a Y-connector for port 1, but I don't recommend that. If a mouse and a joystick are hooked up without a switch, they interfere with each other. Quick Switch is a better way to go.

Quick Switch should work with any device that plugs into port 1 on any Amiga model. These include three-button mice, optical mice, light pens, and drawing tablets. There is nothing to stop you from using a second Quick Switch on port 2 if you want to keep a second device plugged in there, too. ▲

The parts that go into making the Quick Switch.

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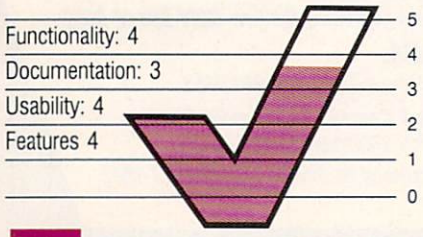
reviews

***COMPUTE!'s Amiga Resource* bases its review ratings on several self-explanatory criteria, using a scale of 1 (lowest) to 5 (highest). Obviously, not every software publisher places equal emphasis on each category. To accommodate this, we've derived an average overall rating, represented by the graphic check mark accompanying each review.**

Digi-Paint 3

NewTek
115 W. Crane St.
Topeka, KS 66603
(913) 354-1146
Requires 512K
$99.95



They are the sounds of dread. First comes the soft fluttering of wind-turned pages as the manual flips through the air. This, I imagine, is the same slight noise the owl—stealthy master of the night—makes as it swoops down on its prey. Then, there's the dull clacking as the plastic disk cases strike the desktop. And there's no further need for imagination: As I feared, yet another art program has arrived for review.

Because of the proliferation of sophisticated paint programs, reviewing a new entry seems to entail little more than a grinding search for the marginally unexpected—both good and bad—which is followed by laboriously typing up the results against a backdrop of established, utterly conventional software. Is NewTek's *Digi-Paint 3* a worthy entrant into a crowded arena? Fortunately, useful comparisons for this HAM (Hold-And-Modify) program are easy to come by.

Two spring to mind immediately. There's the original *Digi-Paint,* one of the first HAM programs and parent of the new version. And, of course, there's the current undisputed HAM champion, MicroIllusion's *Photon Paint* 2.0. *Digi-Paint 3*'s documentation says that users of the first *Digi-Paint* will find that the latest version is completely new. I think the implication is that we're to regard the new program as more than an update. That, however, is what it is. But there's no doubt that it's a major, and significant, one.

The original *Digi-Paint* was copy-protected with a password system that required the user to look up and enter specific words from the program's manual. The process was tedious and difficult to bypass. *Digi-Paint 3* dispenses with copy protection altogether. In contrast, the earlier program's unusual interface has been preserved. Tools and all functions are presented in panels at the bottom of the screen. This arrangement offers the artist a mostly unobstructed view of the workspace while maintaining a visual reminder of important settings. There are now four different panels containing program controls. The displays are logically set out, and most program features are adjusted by means of movable graphics. Buttons, switches, and sliders all work like their 3-D equivalents might. The overall effect is very smooth and easy to use. This is probably the only art program that operates like the pilot's console in a hyperspace shoot-'em-up.

Users of the first *Digi-Paint* will note a welcome change. Its successor's controls always remain visible, regardless of the colors selected for painting.

The four panels divide up the program features according to function. One panel contains tools—brushes, editing scissors, and settings which produce standard shapes; another is devoted to rendering text; one serves as palette; and a fourth—the heart of the program—controls many subtle aspects of the output from the other three. (A fifth panel holds file functions, drawing-mode settings, and certain preferences.)

• • •

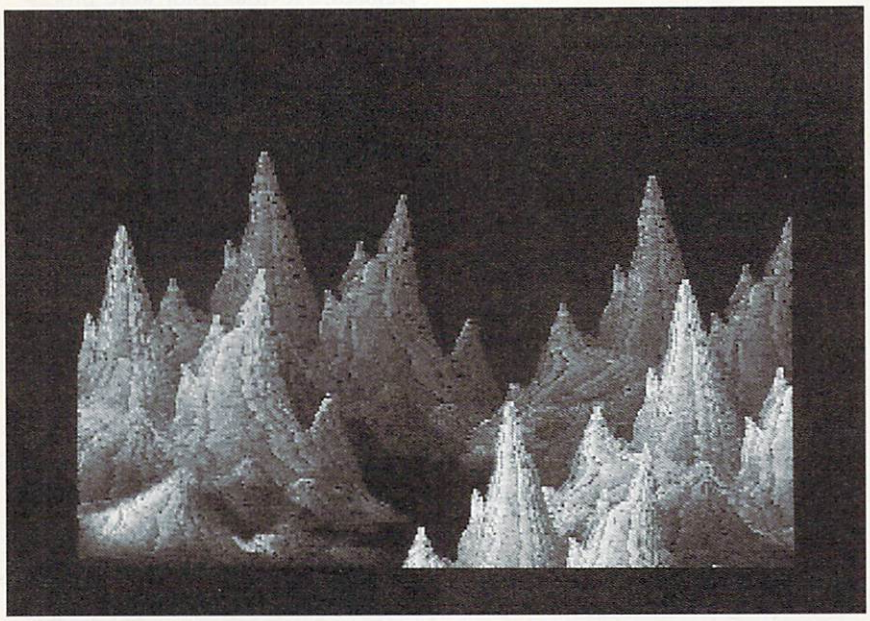
Digi-Paint 3 is more like a magical, but real, paintbrush. It's the art program most likely to produce a masterpiece.

• • •

Switching about between the panels is initially somewhat confusing, and it's a radical departure from the first *Digi-Paint*. The manual compensates for the changes by explaining how familiar modes and settings from the older program can be reproduced in the updated version. This information is especially significant because of the program's ability to produce fine and subtle variations of HAM colors, shaded gradations, and transparent effects. The new version extends these abilities and also expands them into several unexpected directions. For example, one nice touch is the special range palette that enables users to easily render a multicolor gradation in a single step. (Here's a tip: Selecting either end color of the range palette locks out the normal 16-color palette, even when the range painting mode isn't in operation. Just click on a selected color again to deselect it and return things to normal. Indeed, the only reason to select one of the end colors is to change it. The range always works as displayed, whether a color is selected or not.)

Much of *Digi-Paint 3*'s delightfully innovative side is bound up in the texture-mapping mode (TxMap in the mode menu). The program can main-

tain two custom (user-generated) drawing brushes simultaneously. The deeper of these, the "swap brush," can at any time be brought back to the surface and be used for painting. However, the fun really starts when a brush remains at swap level. Any such brush can be texture-mapped into anything drawn on the screen. In effect, the swap brush is forced into the freshly drawn object, taking on its overall shape and orientation. Additionally, special controls allow the swap brush to be warped and repeated to various degrees within the object. The contained image can also be smoothed, which maintains apparent resolution when the swap brush is poured into a much larger shape.



Although it's initially difficult to understand how these texture-mapped brushes work, the sequence used to make the accompanying screen shot should give you the general idea. For some time now, I've tested art programs by seeing how easily they can be used to make images that resemble fierce, craggy mountain ranges. Although this is a completely arbitrary test, it always proves revealing, and it really tends to stretch the software. To make this picture, I first drew a shaded rectangle that I eroded with pits and fissures. All these elements were quickly painted in *Digi-Paint 3*'s range mode.

The rectangle was captured with the scissors tool and was made into the swap brush. To accentuate the vertical aspect of the eventual peaks, five horizontal tiles were set. (A horizontal arrangement of tiles comes about as the result of a number of vertical divisions.) Warping was set to produce the visual effect of a bulge protruding toward the viewer; this mimicked perspective.

Finally, in order to preserve the fissures and other initial surface details, no smoothing was used. Then, merely by drawing peaked, angular shapes with the filled freehand tool set to texture-map mode, mountains were quickly formed. A few good shapes combined into a large brush, a bit of transparency here and there, several splashes with the large brush, and the picture was finished. The result was, in my opinion, much superior to the mountains I made when testing *Photon Paint* 2.0's quasi-ray-tracing feature (although I was very well pleased by that effort at the time). The picture took much less time to make, too, because texture-mapping occurs rapidly and adjustments can be made interactively. Texture-mapping offers infinite possibilities, and it presents them in such a way that they can become a dynamic part of the rendering process.

There are too many other significant features of *Digi-Paint 3* to cover them in appropriate detail. There are some important ones that need to be mentioned, however. *Digi-Paint 3* is more than ever geared to transparent effects. The new transparency controls are easy to operate and make even more variations of tone available at the touch of a couple of indicators. The program also retains its incredible memory, allowing you to undo an action, change settings, and hit a repeat button to automatically repaint the intended figure. This retentive assistant has been improved so that using the repeat button in conjunction with the brush-scissors button will produce a custom brush made exclusively from the last-drawn shape. Moreover, *Digi-Paint 3* happily works with very large superbitmap images, where its all-assembly-language speed is seen to great advantage. This incredible speed is also apparent in the magnify mode, which is the fastest and most fluid I've ever seen.

One interesting feature of the package is the *Transfer-24* program, included on a separate disk. This program is essentially the image-processing software that comes with NewTek's Digi-View digitizers. With it, artists can load virtually any kind of current IFF-graphics file and convert it into another IFF format. Raw Digi-View RGB files can also be loaded and converted for use in *Digi-Paint 3*. *Transfer-24* excels at adjusting colors in HAM pictures and is the definitive tool for this purpose. Its other image-processing capabilities are rudimentary but still worth exploring.

Of course *Digi-Paint 3* is not perfect. The screen shots in the manual are dark and sometimes indistinct. They aren't very inspirational and sometimes aren't of much practical use. (Take a look at *Tutorial 1: Sphere* to see what I mean.) Custom (captured) brushes cannot be used directly with drawing tools; they are either stamped straight onto the screen or appear as texture-mapped fills. You cannot, for example, draw an unfilled rectangle with a custom brush. But these are minor complaints, and the program operates in such a subtle way that they're a little irrelevant.

Here's how *Digi-Paint 3* measures up against the yardsticks we established earlier. It's a vast improvement on the original, maintaining all its strengths and eliminating its weaknesses. It moves even further into the realm of subtlety, yet offers this increased depth in a nonmathematical,

intuitive way. The focus is still, however, tight. Unlike *Photon Paint* 2.0, there's been no move to include animation or other functions similar to the wide array of features also found in *DeluxePaint III,* the premier non-HAM art program. Ultimately, *Digi-Paint 3* seems to approach HAM art from a singular, somewhat "artistic" direction. Most other programs in this field have become art processors, impressive in their power but generally mechanical in approach.

Digi-Paint 3 is more like a magical, but real, paintbrush. As far as I'm concerned, it's the art program most likely to produce a masterpiece. This is an admittedly subjective judgment, and readers who want to buy just one HAM program will still have to look closely at *Photon Paint* 2.0. As for me, *Digi-Paint 3*'s lower price and subtle power are just too attractive to pass up. And best of all, this original and unconventional software turned out to be the ideal antidote for reviewer's dread.

—*Lee Noel, Jr.*

Pen Pal

Brown-Wagh
16795 Lark Ave.
Suite 210
Los Gatos, CA 95030
(408) 395-3838
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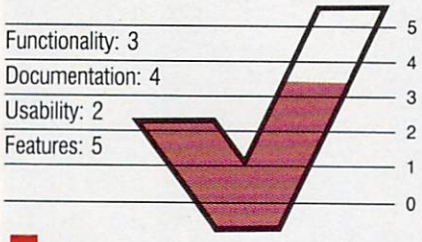

Its first release could have been called the Not-Ready-for-Prime-Time Word Processor, but a few quick updates later, *Pen Pal* has left most of its bugs behind. Unfortunately, its Guru-infested introduction still leaves a bad taste in my mouth. The product was late anyway—why not test it before shipping it?

Pen Pal is a word processor with a few surprises. The most notable surprise is the quality of the output that *Pen Pal* can generate on a good color printer. *Pen Pal* is a breakthrough product for the Amiga because it lets you mix your near-letter-quality (NLQ) printer fonts with Amiga graphics. Previous color word processors, like *ProWrite,* made you choose between your printer's NLQ fonts or Amiga graphics and fonts. However, *ProWrite* 2.5 has just been released, and it adds this new capability and a few, more minor, changes.

A less conspicuous surprise is the inclusion of a database. It's not *SuperBase,* but it is useful—ideal, in fact, for most database uses. Although I like the database, I question the assumption that it's a good idea to combine a word processor and a database. I don't want to have to load in all that extra database code every time I want to write a letter.

Pen Pal seems to be a memory hog. I have to shut down most of my hard drive's cache before I can run the thing. It does *not* respond well in low-memory situations. While the program

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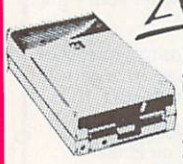

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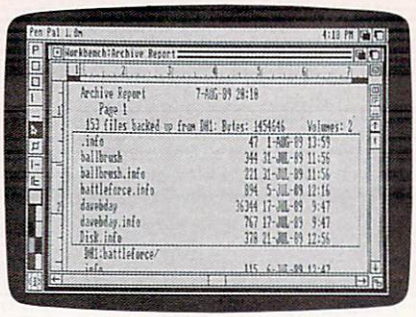
requires one megabyte of RAM, it operates much better with twice that amount. File sizes are large, too. As a matter of fact, quick inspection of a saved text file shows that each character is matched by another byte, perhaps an attribute byte. This format seems to be specific to *Pen Pal.* I would have appreciated the ability to load in the IFF TEXT files saved by *ProWrite.*

We're likely to see *Pen Pal*'s innovations show up in other products.

The word processor itself is very capable. Its speed is reasonable for a WYSIWYG word processor. The expected editing commands work well—click to move the cursor, double-click to select a word, triple-click to select a line. Hit the delete key and the selected text disappears.

The graphics capabilities of *Pen Pal* are impressive. You can import IFF graphics, draw colored lines and boxes, and move or crop images. Text can wrap around pictures easily, but you cannot flow the text into multiple columns. That's a critical omission, because it keeps you from designing a newsletter with *Pen Pal,* something the word processor seems otherwise ideally suited for.



Before I give my thumbs-up (or -down) to this program, let me tick off a few observations I made while using the program.

When I first booted the program, I was disappointed to find that the screen was black characters on a white background. While someone with a monochrome or multisync monitor may find that combination pleasing, it's enough to give a headache to those of us with Commodore monitors. If I wanted a white background I'd have my preferences set that way. My displeasure was amplified when I found that *every one* of the alternative color sets used white as the background color. I manually switched the text color with the background color, only to find that now my border was white. Worse yet, I can't save my color preferences—I have to change them each time I run the program. If I had the source code to *Pen Pal,* this problem would be the first one I'd fix.

The user interface is sometimes clunky. The file selector is cumbersome. The spelling checker's interface is even worse. There's no skip or ignore option, so I don't know what to do if I want to leave the word as is without adding it to the dictionary. I tried cancel, but that kicked me out of the spelling checker altogether. ▷

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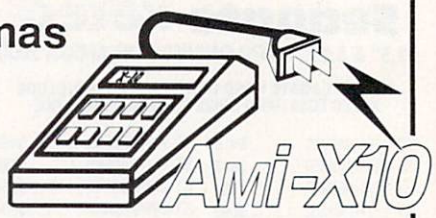

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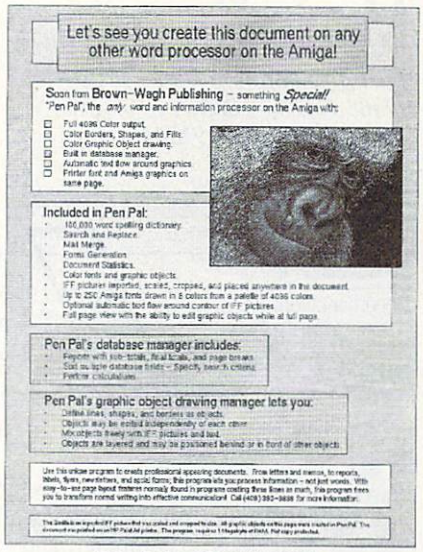
I was disappointed by the lack of Amiga-key equivalents for the menu commands. There are some, but not the ones I want.

As you move your mouse pointer over the gadgets which make up the tools, vertical text will be displayed under the pointer. This text lets you know what each gadget does. It's a useful feature, but a bit disconcerting. Experienced users will search for a way to turn these dynamic pointers off. I haven't found one yet.

I like the view-page tool a lot. It shows the current page just the way it will print out (minus a great deal of resolution, of course.) You can still see your text in the adjacent window, but unfortunately you can't edit it until you click the tool again to turn off the full-page display.

I like the status box. It tells you if your document will fit on the disk you have selected. Why don't all word processors do this? Unfortunately, the program is convinced up and down that the ramdisk *never* has a byte of memory free. As a result, *Pen Pal* won't even try to save a file to RAM:. Granted, the RAM: device is a bit of an oddity since it shrinks and expands to fit your data, but I'd never before seen a program that couldn't save to it.



***Pen Pal* makes it easy to produce great-looking letters.**

There are some quirks that I would hesitate to call outright bugs. For instance, I managed to highlight a gadget that was not a toggle gadget. It looked sloppy, but it didn't Guru.

Pen Pal's flexibility is impressive. It lets you modify so many variables that your head may spin. For instance, you can display dates in more formats than you've ever seen. You can set your mouse speed. You can select every formatting option imaginable.

In some cases, *Pen Pal* has done things so right that we're likely to see the innovations pop up in other programs. For instance, fonts are handled perfectly. One menu lists fonts by sizes. Another lists them by name. If you have more fonts than will fit in a menu, another menu of fonts will automatically appear. Very nice.

The manual is very, very good. Nearly every question I had as I began to use the program was answered almost immediately when I opened the manual. I do wish the manual had a small section at the beginning which gave an overview of the program and all of its features. The program's online help was less helpful; I never

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Finally...

The Way To Use XCad!

Summer 1989 marked the newest release of X-Shell. X-Shell is not a single program, but, as its name implies, it is a "shell". One purpose of a software shell is to surround a target program and replace its user interface with another, easier and more powerful presentation. The target program of X-Shell is X-Cad Professional from CadVision International. Another version of X-Shell is also available for the Taurus/Impex release of X-CAD.

X-Shell lists for $199. It is available from GRAFX or your local Amiga dealer.

X-Cad is a powerful 2D drafting program. X-Cad manages the Amiga's resources well, making it fast. X-Cad zooms ten times faster than AutoCad Rev 2.62 on a NEC APC III (Intel 286) and four times faster than AutoCad Rev 10 on an AST 386. But, X-Cad is presented more as a syntactic language than a drafting system. X-Shell fixes that.

X-Shell is the result of an effort by GRAFX Computing, and a professional architect, to make the use of X-Cad as smooth, and productive as possible. X-Shell is easier to learn than X-Cad or AutoCAD. X-Shell uses a set of compact custom graphic menus that replace the X-Cad text menus. X-Shell provides a manual with over 100 pages describing the use of every button on every menu. Now it is easy to draw with precision on the Amiga. X-Shell. There is nothing else like it...

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seemed to get the answer I was looking for there. But it's nice to see the Help key used.

If you need an integrated database and word processor, *Pen Pal* is a nice choice. You can easily transfer information from the database into a document. *Pen Pal* also has a forms manager that lets you create documents which can only be modified in preselected fields.

Is *Pen Pal* in the league of other Amiga word processors? It's certainly ambitious enough. Although I had several bad moments when I used the first releases of the product, the current version (1.0m) seems nearly stable. I wouldn't write a book with *Pen Pal,* though. I would, however, use *Pen Pal* to design Christmas cards. If I were organized enough to use a database, I might keep a mailing list in the database.

Pen Pal is sure to evolve, though. It should give the contestants in the already-crowded Amiga word processor arena a new cause for concern.

—Rhett Anderson

Music-X

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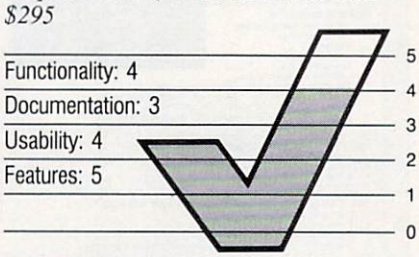
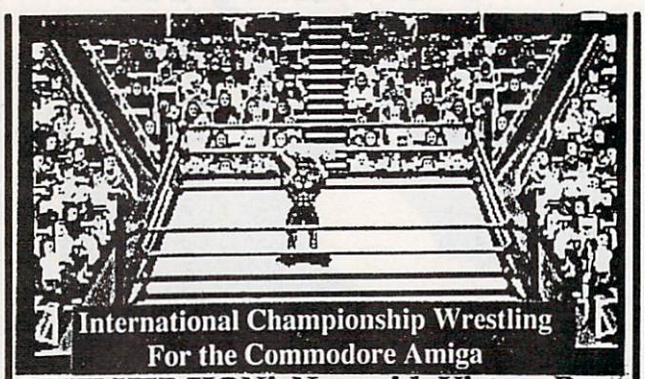


Amiga evangelists are famous for expounding on the marvels of their favorite computer, and these days they rightfully have a lot to say about graphics and video production. But there's little in a user's life more frustrating than owning the potential while not being able to get at it, especially when proponents of other, less elegant, computers flaunt feats you're convinced could be performed better on . . . well, you know.

This is the predicament that serious Amiga musicians have been in for years. Considering the splendid uses the machine's graphics, internal sound production, MIDI compatibility, and multitasking operating system *could* be put to musically—except for a couple of tantalizing exceptions—Amiga music products have largely proven to incorporate one shortcoming after another.

So you can see why Amiga toe-tappers would want to know when a product appears which finally realizes a great deal of the machine's music potential. And guess what! It's here in the form of *Music-X*, the first release of a series of Amiga music products from MicroIllusions. While *Music-X* version 1.03 (upon which this review is based) may not be everyone's ultimate performance tool, it is much more than a two-step in the right direction. In form, philosophy, and implementation, *Music-X* has the potential to rival any serious music program ever produced for a personal computer.



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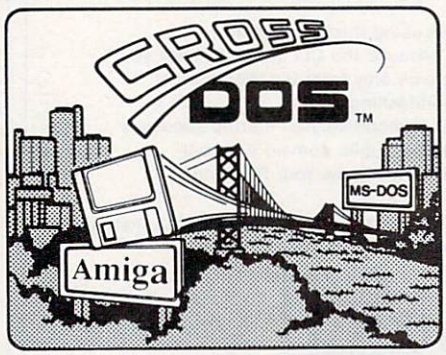

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Designed for the professional musician, *Music-X* has at its heart a 16-channel, graphics-based MIDI sequencer that permits editing and playing of three types of musical voices: Patches from MIDI-connected synthesizers, standard Amiga IFF samples, and Sonix's RFF synthesized sounds. It supports realtime MIDI input with velocity sensitivity and aftertouch, keyboard overlays, and external program modules such as the one for quantization that is supplied with the program (1/192-per-quarter-note resolution). It syncs to a drum machine or SMPTE time-code reader for video production (either 24 or 25 FPS) and includes the framework for customizing internalized patch editors and librarians for just about any MIDI-compatible synth you can name.

Power like this is impressive, but, in this case, the proof is in the playing: *Music-X* is rock solid, beautifully implemented, and as smoothly responsive as a fine violin. It is organized into four sections through primary and supporting screens, each of which (along with all of its features) can be operated via mouse moves and pull-down menus or, alternately, from a full set of keyboard commands.

Music-X has the potential to rival any music program ever produced for a personal computer.

Music-X stores as many as 250 sequences (musical phrases that make up songs) in computer memory using tape recorder–like controls as you play in either real- or step-time on the keyboard of a MIDI-connected music synthesizer. Sequences can be organized, extracted, and merged into scores on the Sequencer screen; they can be edited with punch in/out or cut and paste, arranged, spliced, looped, nested, and altered in *Music-X*'s Bar and Event Editors. The Event Editor shows individual musical events numerically in standard MIDI fashion while the Bar Editor displays the music graphically, letting you zoom in and out with half a dozen magnifications.

Although the Sequencer and both Editor screens are available from individual keyboard commands, one complaint I have is that they should toggle from a single key for easier access. Other complaints are that the velocity-sensitivity routines could be more sophisticated and, like every MIDI sequencer I've ever laid hands on, *Music-X* does not display standard music notation (yup, some say I'm a dreamer), although both editors smartly scroll the score during playback.

Instrumentation and special effects are controlled in *Music-X*'s Filter section. MIDI channels are governed by corresponding filters that determine the way MIDI events coming into or going out of a channel are processed. Each filter is controlled by four changeable keyboard maps, and although it may not sound like it from that description, you can really get cre-

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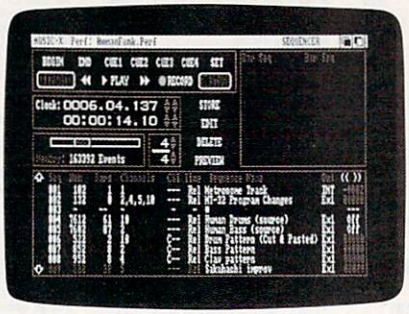
ative with these features. For starters, you can retune or split your mother synth's keyboard, play Amiga samples from it, and start sequences playing (such as background rhythm tracks for live jam sessions) by touching a single key. You can tweak breath control and scale down notorious overloads from pitch bend and aftertouch data streams, control portamento and vibrato, solve problems like your DX7 sending OUT data on only one channel, and manage superfast repeating chords, guitarlike strumming, and chromatically moving horn voicings. Furthermore, as the manual notes, you can "ring bells and even turn on lights and stuff" with the power of these filters.

Instrument sounds are addressed in *Music-X*'s final two sections. MIDI patches are moved between channels and saved to disk in the librarian section which also includes a protocol editor for specific synths, and they may be altered in hexadecimal form in an editor. While setting up the editor/librarians for the synths you own



won't be the easiest thing you'll ever do, it will finally give you something to do with the books that came with them. Provided with *Music-X* are librarian/editors for the D-50, DX100, and TX81Z, in addition to a bank of patches for the CZ-1000. And you might not even have to roll your own: Data for both utilities are saved externally from the program and can be exchanged on disk or via telecommunications.

IFF samples and synthesized Sonix sounds may be edited from *Music-X*'s Amiga Samples section. Both types can be altered through a 16-stage, graphics-based envelope representation even while they play. Amplitudes are manipulated at nodes with mouse-controlled sliders, and, although it works, I do wish you could simply draw a curve and hear it—but that's sound creation which *Music-X* does not support. Sounds can be retuned and saved in IFF format, and the audio filter on A500/2000/2500s can be toggled during performance.

Music-X is multitasking on my A2000 right behind my word processor as I write this. Memory permitting, it can even be left running with communications software because you can toggle access to the serial port from within it. (Oh, for a multiport serial board!) I installed *Music-X* on my Supra hard drive with the Workbench-driven installation routine that comes with it, and although I had trouble with the original *Music-X*-to-MIDI (and vice versa) translation program needed to get Dr. T's *KCS* files to play (among others), MicroIllusions issued an update (version 1.04) that works fine, as does its SMUS-to-*Music-X* converter.

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The next two products in Micro-Illusions' music line are a heavy-duty SMPTE time-code reader and a configurable Amiga MIDI interface with multiple ports, both of which should be available by the time you read this. Also shipping should be a junior version of *Music-X* which won't include either the editor/librarians or SMPTE hooks and will retail for around $150. *Music-X* itself performs on a 512K Amiga, although one megabyte of RAM is recommended. It comes with three disks, none of which is copy-protected, and a splendid almost-500-page spiral-bound manual that you might, however, find skimpy on tutorials if you're new to MIDI. But I'll tell you what: Whether you're an amateur or a pro, if you're serious about Amiga music and either have considered or are considering getting a synthesizer or two, I don't think you can make a better buy than *Music-X*. It might even turn *you* into an Amiga evangelist.

—*Peggy Herrington*

MINI-REVIEWS

Mini-review contributors this issue include Denny Atkin, Ervin Bobo, Russ Ceccola, Gary Fields, Jeffery Scott Hall, Steve Hudson, and Dale McBane.

Batman, The Caped Crusader

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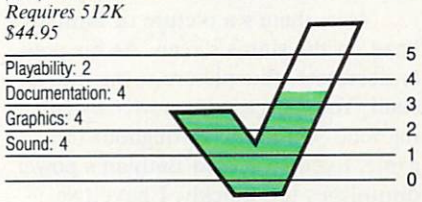

Since *Batman,* the movie, has sent this country into a Batmania frenzy, I'd better watch what I say about *Batman, The Caped Crusader.* When I received this game, I immediately ripped open the box and loaded it to see how Data East did with the Amiga version of its already-popular Commodore 64 game.

After I played *Batman* for a few minutes, I became disappointed and put the disk back into the box just as quickly as I had taken it out. What disappointed me was how quickly you die in this game if you don't move fast enough. To be fair, once you know where the danger spots are, you can get around without dying at all. Now that I've worked around this initial problem, I'm happy with the game.

Batman provides a choice of two plots. It seems The Penguin wants to take over the world with an army of

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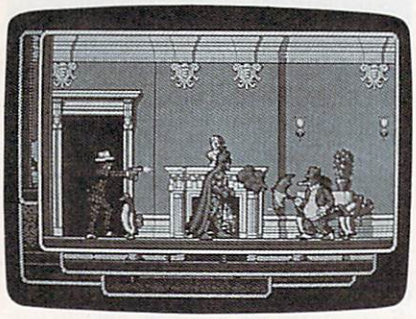
robotic penguins controlled by a master computer. Your job is to destroy the computer. In this plot, you have to collect necessary items from the Batcave before you venture through the streets of Gotham in search of The Penguin's umbrella factory.



In the other plot, you travel through the city's sewers and make your way to an amusement park, where The Joker has taken Robin after kidnapping him. I liked this plot better because it's easier to complete and has a neat amusement-park atmosphere, including a diabolical fun house.

After I read the plot descriptions on the box, I dived right in. The graphics are very good—clear and colorful. As you move from screen to screen, the current screen overlays the previous one, leaving ghost images—an interesting touch.

As you pick up items, you can go to a status screen by pulling down on the joystick while pressing the button. On this screen, you see icons of all the items you have collected. You can drop them, use them, return to the game, restart the game, or turn off the music from this screen.

Also, there's a picture of Batman's head on the status screen. As his power decreases, this picture turns into a skull. You increase his power by eating food you locate throughout the game. Even so, I find Batman's power diminishes too quickly. I have two other complaints: There is no pause button, and it's too easy to move accidentally to the status screen while fighting enemy thugs. Other than these complaints, *Batman, The Caped Crusader* is a great graphics adventure.

—R.C.

Baud Bandit

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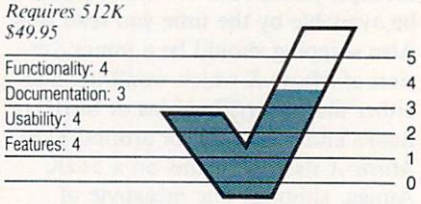

Until recently, the best terminal programs were found in the public domain and shareware categories. Because they were distributed electronically, it was easy to quickly add features and fix bugs. Even if people did initially buy a commercial terminal program, they often found something better online.

Progressive Peripherals & Software has changed that with *Baud Bandit*. This feature-laden terminal program should satisfy even the most demanding modem addict.

Baud Bandit has a unique user interface—its commands are listed on the title bar. While not as descriptive

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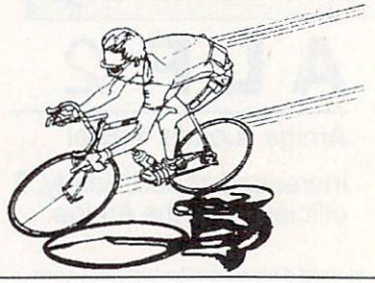

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as pull-down menus, in practice it makes operation much quicker; just click on the title bar to select a command.

Almost every major file-transfer protocol is supported, including WX-, X-, Y-, and ZMODEM; CompuServe B; and ASCII. The program's review buffer allows you to look back at text that's scrolled offscreen. Clipboard support lets you cut and paste from the review buffer into an editor or the terminal window. And *Baud Bandit*'s editable chat window makes online conferencing a breeze.

Baud Bandit supports 1000 entries per phone book, and you can define the baud rate, serial settings, default transfer protocol, and log-on scripts for each entry. The program will automatically redial multiple BBS numbers until it makes a connection.

Full *ARexx* support makes this one of the most flexible terminal programs around. You can add communications capability to other programs or write sophisticated interactive scripts in *Baud Bandit*. One of the example scripts included actually lets you use the program as a simple bulletin board system.

Baud Bandit emulates a color ANSI terminal; if you need VT100 or Tektronix emulation, look elsewhere. But if you're looking for an easy-to-use, powerful program that takes the hassle out of telecommunications, make off with a copy of *Baud Bandit*.

—*D.A.*

QIX

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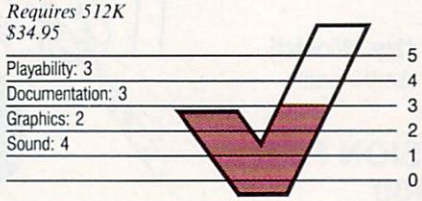
Canada V7M 1A5
(604) 984-3344
Requires 512K
$34.95

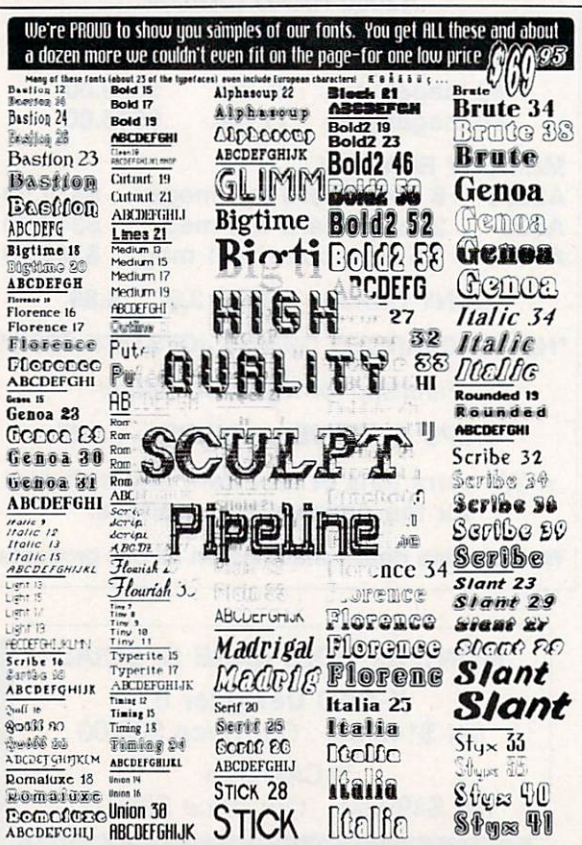


Arcade fans, rejoice! *QIX*, an arcade classic, has been reincarnated on the Amiga. It combines fast action and ear-catching sound in an appealing package that you'll enjoy again and again.

The idea behind *QIX* is simple enough: Build a vaccine that will neutralize the whirling, twirling, multicolored helix of the deadly QIX virus. How? By using your joystick-controlled marker to enclose and protect areas on your screen. Marked-off areas are filled with colorful geometric patterns—perhaps representing the structure of the vaccine? Area translates into points, with bonus points possible, too. There's no time limit.

But while you're drawing, QIX and its mutant offspring are multiplying and on the prowl. You've got four lives, but you'll lose one if QIX touches a line before an area is enclosed. You'll lose another if one of the offspring runs into your marker.

QIX offers both one- and two-player games; there's a practice mode, too. It's all joystick-controlled, even the placement of high-scorers' initials. However, there is no way to set the



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level of difficulty. It would be nice to have beginner, intermediate, and expert levels of play.

Despite its seemingly simple action pattern, *QIX* is a challenging game to play. Rest assured, you won't master it overnight. Does strategy help? You can try things like boxing in the QIX virus, but be aware that QIX learns from its mistakes and will use that knowledge against you.

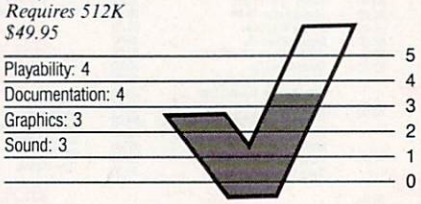
And that makes for taut nerves. As the working screen shrinks, pulse rates increase. Blood pressure rises. QIX moves frantically while you sidestep and dodge.

Maybe there's more to drawing boxes than you thought!

—*S.H.*

Deja Vu II: Lost in Las Vegas

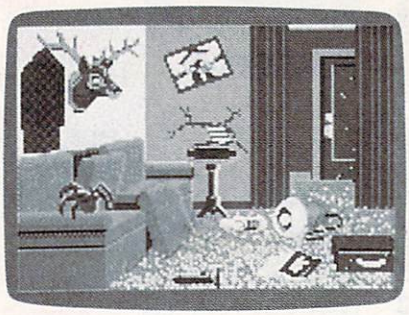
Mindscape
3444 Dundee Rd.
Northbrook, IL 60062
(708) 480-7667
Requires 512K
$49.95



Well, it looks as if you've made it out of the frying pan in *Deja Vu,* only to find yourself in the fire of *Deja Vu II: Lost in Las Vegas.* In this sequel, you again assume the role of a two-bit private investigator and, as usual, you're in deep trouble.

The Mafia has "made ya an offer ya can't refuse." In the past 48 hours, you've been abducted by two hired hands, grilled like cheese by Mafia kingpin Tony Malone, knocked senseless, and tossed into a bathtub in a cheap hotel. And the fun has just begun.

Someone has set you up to take the heat for some stolen money that you don't have, and if you don't cough up $100,000 within seven days, you'll be walking down the river in a pair of cement shoes. So, being the brilliant P.I. that you are, it's your job to recover the stolen money and determine who besides the Mafia is out to get you before your time runs out.



As you begin the game, you'll notice several windows. The biggest one contains a picture of your current surroundings. All other windows, except for the bottom one which is used for displaying text, are used for interacting

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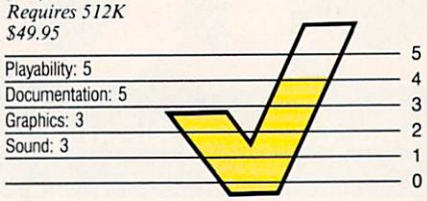
with the game. You can move objects simply by dragging them from one window to another. Let's say you want to get your pants and overcoat from the closet. Simply open the door and drag these items into the inventory window. You can also throw objects and break windows. This might help release some of the frustration you'll encounter when playing.

Unlike many graphics adventures, *Deja Vu II* makes use of simple animation to move objects in the background. Overall, the story is good and the interface is a pleasure to use. If you enjoy a good graphics-and-text adventure game with a few added features, check out *Deja Vu II*. It's definitely worth it.

—J.S.H.

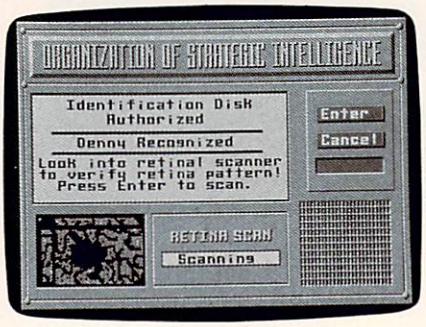
Omega

Origin
P.O. Box 161750
Austin, TX 78716
(603) 644-3360
Requires 512K
$49.95



Imagine a future where nobody is killed in wars. There's still conflict in the world, but it's waged by unmanned cybernetic tanks. This is the world of Origin's *Omega,* a program that puts you in the role of a Neural Cybertank Programmer for the Organization of Strategic Intelligence.

The first thing you'll notice about *Omega* is how heavy the box is. The thick manual and additional reference guides should give you a quick indication that this isn't your standard shoot-'em-up. *Omega* is a complex game, one you can't just boot up and start playing without reading the documentation. These tanks aren't joystick-controlled—you've got to write the artificial-intelligence (AI) routines that govern how they react in combat.



You start your design by selecting a chassis and weapons system for the cybertank. You've got a number of options for outfitting your robotic death machine, including explosive shells, lasers, plasma guns, and nukes. As you advance in rank, you'll be able to add optional gizmos such as fuel misers, jammers, defense shields, and remote scanners.

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control your cybertank. The Cybertank Control Language (CCL) is a plain-English language that's even easier to pick up than BASIC, with routines like SCAN FOR ENEMY TANK; IF FOUND THEN RAISE SHIELDS. Beginning CCL programmers can use libraries of prewritten program capsules to create simple programs.

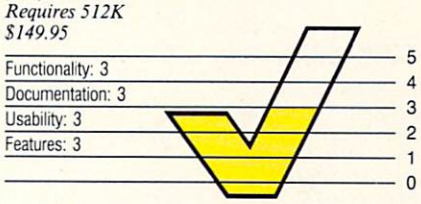
Once your cybertank has been authorized (checked for a legal configuration) and your program has been debugged, you can send it into combat against computer-controlled opponents to see how it fares. The real fun comes, though, when you pit your tank against one designed by a human opponent. You shouldn't have too much trouble finding one—you can fight against cybertanks created on the Amiga, Apple, C64, IBM, Macintosh, and ST versions of *Omega*.

Omega is habit-forming. Even if you can design a supertank that consistently wins its battles, you'll keep coming back, knowing that it could do it just a little better.

—*D.A.*

Scribble! Platinum Edition

Micro-Systems Software
12798 Forest Hill Blvd.
Suite 202
West Palm Beach, FL 33414
(407) 790-0770
Requires 512K
$149.95



Scribble!, the premier word processor for the Amiga has been upgraded to *Scribble! Platinum Edition*. Like the earlier *Scribble!, Platinum Edition* allows the user to access all of its features by either pull-down menus or direct keyboard input.

While the mouse-input routines are intuitive, keyboard commands are equally easy to master and, for touch-typists, faster. For instance, if you want to delete an entire line of text, press ALT and L (for *Line*). Or, if you are in the process of searching a document for a specific string of text, you can continue the search by pressing ALT and A (for *Again*).

Unlike other Amiga word processors, this one uses dot commands to format the screen and printouts. Thus, to set margins, justification, line spacing, and so on, begin a line with a dot (period) and follow it with the command. For example, .RM10 sets the right margin ten characters from the edge.

Editing tools include all those you would expect, such as search and replace, block cut, copy and move, and insert and overstrike modes. Text can be displayed (and dumped to the printer) as normal, italic, bold, underlined, or a combination of the above.

The program has an excellent 104,000-word spelling checker and an impressive 470,000-word thesaurus (twice the size of my trusty *Roget's International*). In addition to offering alternate words, the thesaurus also supplies a short definition of the word (even *WordPerfect*'s thesaurus doesn't offer that).

To check a word, simply move

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the cursor to it and summon the speller with the mouse. You can either replace the word with one from the dictionary, edit the word yourself, skip the word, or add it to your dictionary.

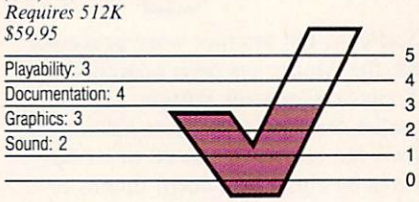
Although this update includes a primitive option to print IFF graphics (graphics are not displayed onscreen), *Platinum Edition* for all practical purposes remains a word tool. Unlike most Amiga word processors, *Platinum Edition* does not display documents in the WYSIWYG format. The primary advantage of this arrangement is the conservation of memory, which means the word processor runs on a standard 512K system. Plus, providing your system has expanded memory, *Platinum Edition* will multitask with other programs (like spreadsheets and databases) very efficiently.

I found *Platinum Edition* powerful, yet easy to manage. It has every feature I require of a word processor, and I suspect most writers, either occasional or professional, will be pleased with it as well. But because it does not support mixed fonts and has only primitive graphics abilities, avoid it if your documents require either.

—G.F.

Zork Zero

Infocom
Distributed by Mediagenic
3885 Bohannon Dr.
Menlo Park, CA 94025
(415) 329-0800
Requires 512K
$59.95



One of the first games I ever played on a computer system was strictly a text-based adventure game called *Zork*. Now, three sequels and one trilogy later, comes the fourth game in the series from Infocom Software: *Zork Zero*.

The Zork series takes place in the Zorkian universe. In this particular story, The Great Underground Empire is being threatened by an evil wizard who has put a curse on the entire population. The curse will destroy the kingdom unless you can find a way to stop it. Only by collecting strange and unusual relics can you restore peace and order.

As you begin the game, the only person you find is a court jester who has an irritating personality. The jester appears from time to time, giving you riddles, games, and helpful hints that point you in the right direction. But he also pulls some deadly tricks that

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might get you killed. Other characters, puzzles, and encounters on your quest are typical of the other Zork stories.

Zork Zero contains a traditional text-based interface that allows you to become part of the story; however, you'll find a few new features. One of the nicest is a hint option. Type *hint* to get a display of areas in the game where you might get stuck. Select one of these and receive hints corresponding to the option you've chosen. Note, these are just hints on solving a particular problem and in no way tell you exactly how to solve it.

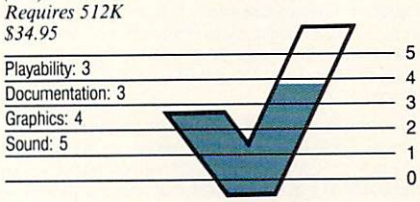
Type *map* to get a visual display of your current location. The map shows only the places you've already visited and does not contain the entire geography of *Zork Zero*. You may wish to use the define option to assign any key word or phrase to a specified function key. This can save you a lot of typing.

If you like a lot of graphics or sound effects when playing an adventure game, look elsewhere. But if you enjoy games with no real great features other than the excellent stories that have made Infocom famous, then you should definitely take a closer look at *Zork Zero*.

—*J.S.H.*

Rambo III

Taito
267 W. Esplanade
North Vancouver, B.C.
Canada V7M 1A5
(604) 984-3344
Requires 512K
$34.95



To best understand *Rambo III*, consider something unsaid so far by software reviewers: You do not buy a game such as this in hope of recreating a story or emulating the excitement you felt while watching the movie. The best you can expect of any tie-in game is that it uses the movie's plot or action as a basis for creating new computer puzzles, either cerebral or arcade.

While the movie *Rambo III* was certainly exciting, it was also somewhat trite. In the game, this triteness leads us to familiar computer-gaming territory.

Divided into three missions, the first is a maze game in which you struggle through an enemy fortress looking for Colonel Trautman. You begin with only a knife as a weapon. In addition to killing patrolling guards, you'll want to look for other items to add to your inventory, such as first-aid kits and more sophisticated weapons.

The second mission has you priming bombs in a vehicle compound. You want to make your escape by stealing a helicopter and leaving the area before the fortress blows. Another maze—this one has a time limit. Both missions are controlled by the joystick, and both feature overhead views of the action.

The third mission gives you the view of driving a hijacked battle tank

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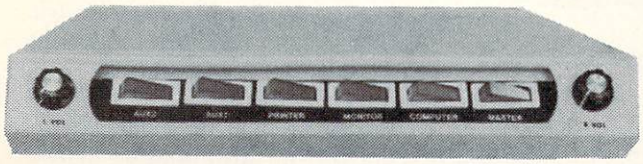

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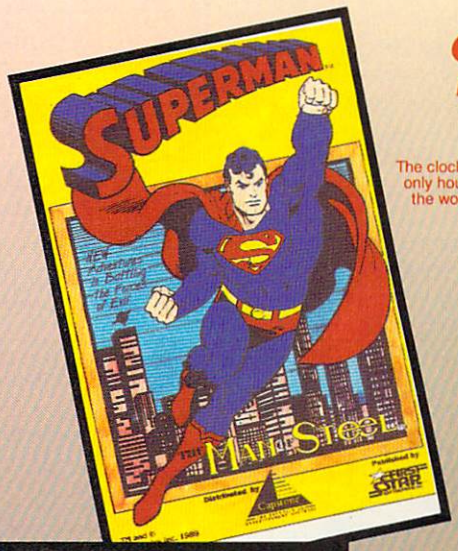

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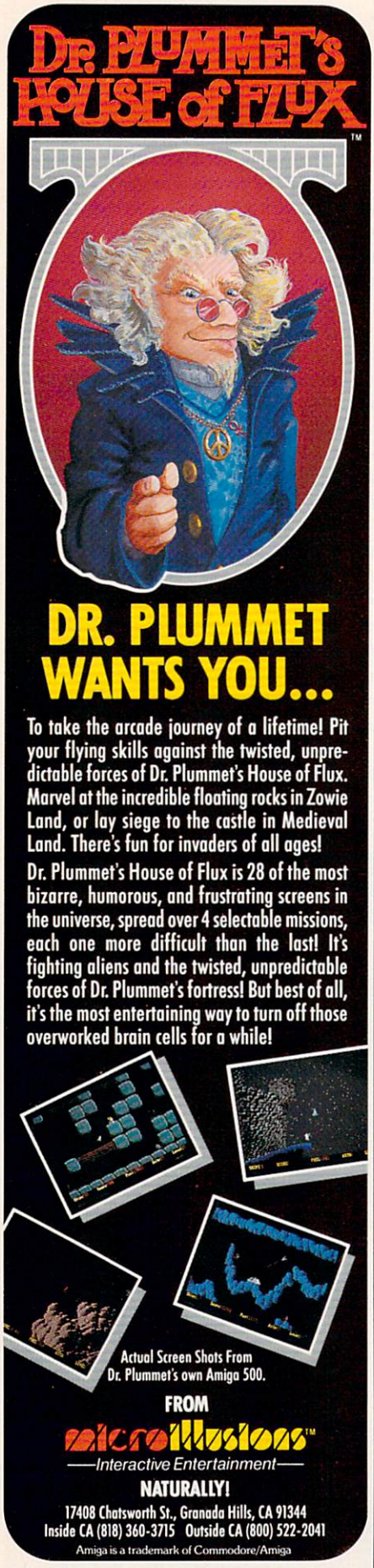

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as you beat off the army, which is standing between you and the safety of the border. The mouse controls your gun sight and turns this part of *Rambo III* into a shooting-gallery game.

Though both you and I have seen this action before in many guises, the redeeming qualities of *Rambo III* are in its sound and graphics and the fact that it follows closely the plot of the movie. On balance, it is a good game that should have its greatest appeal among younger fans of arcade games.

—*E.B.*

DOS Lab

JUMPDISK
1493 Mt. View Ave.
Chico, CA 95926
(916) 343-7658
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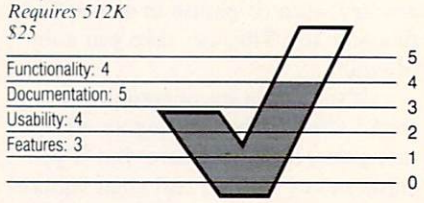
$25



DOS Lab is the latest publication from JUMPDISK, whose other publications include Amiga picture books of *The Legend of Sleepy Hollow, A Christmas Carol,* and *JUMPDISK, The Original Disk Based Magazine for the Amiga.* The purpose of *DOS Lab* is to familiarize the Amiga user with AmigaDOS 1.3. This has been done in many books, articles, and columns. But what sets *DOS Lab* apart from the others are two things: an easy-to-use system for reading text on the disk and the ability to type in the commands that you are reading about and immediately see them work.

DOS Lab is divided into 22 chapters and two appendices, with 75,000 words of text in this two-disk tutorial. A program called Read runs automatically when you select a chapter or appendix to read. Each chapter and appendix in *DOS Lab* is set up as an icon. To read a chapter, open the appropriate disk, and then double-click on the desired chapter. The text pops up on the screen at the start of the chapter.

Chapters are arranged logically, from the simplest AmigaDOS commands in the opening chapters to the more complex ones in later chapters.

The text itself is well written and easily understood.

The examples used in the text are good, and another feature of *DOS Lab* makes them even more useful. The text takes up about two-thirds of the screen, with an icon for the DOS shell visible at the bottom. If you double-click on that icon, a shell window pops up to occupy the remaining third of the screen. Use this shell to test the examples as you read about them. This feature sets *DOS Lab* apart from other AmigaDOS tutorials that I have seen.

Overall, *DOS Lab* is put together very well. I never would have learned many of the new AmigaDOS 1.3 features unless I used a tutorial like this. Also, I learned what I needed without having to read the entire document. The only complaint I have is that the pointer is tough to see against the file reader's light-colored slider and arrow gadgets. A dark pointer would have been better.

—R.C.

Spellbound

Learners Image
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Logan, UT 84321
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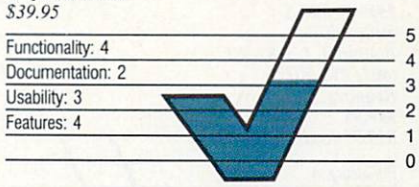
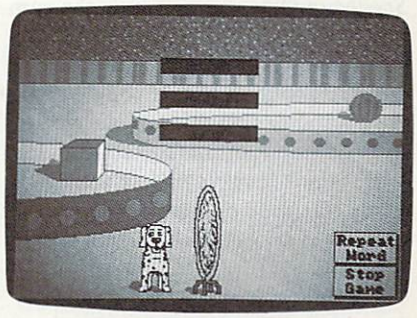


Spelling used to be nothing but boring lists of boring words. And while word lists will always be part of the process, thanks to programs like *Spellbound,* the boredom is definitely starting to fade.

Spellbound, an educational package from Learners Image, is actually four programs in one. Three of them, Match-It, Spell-It, and Mix-It, are games designed to make spelling fun.

In Match-It, the computer pronounces a word, then asks the child to pick the word on the screen that matches. Spell-It starts with pronunciation and has the child type in the correct spelling.



Making good use of the Amiga's speech-synthesis capabilities, each of these games combines spoken words with eye-catching graphics and captivating animation. The graphics and animation will fascinate younger kids and get a chuckle from and hold the attention of older kids as well.

But it's the fourth module, the spelling-list creator, that really makes *Spellbound* shine. This portion of the program does two things. First, it allows you to create personalized word

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lists, making it easy to target the program to children from preschool-age up. Second, and perhaps most useful, *Spellbound* lets you fine-tune the computer's pronunciation abilities. After you've entered a word, ask the computer to pronounce it. If you don't like the computer's pronunciation, customize it to suit your preferences. It's easy to do, since *Spellbound* lets you specify the linguistic elements (phonemes) that your Amiga uses to actually say the word.

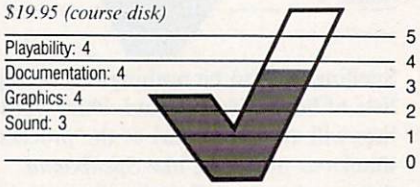
The only problem with *Spellbound* is its documentation. The single-folded sheet includes a few paragraphs on starting the program, a somewhat longer section urging you not to make pirate copies, and a lengthy explanation of how to fine-tune the computer's pronunciation. The latter part offers useful insights, but there is no explanation of the three games themselves.

Despite this flaw, the games are straightforward and effective. Your kids will find *Spellbound* spellbinding.

—*S.H.*

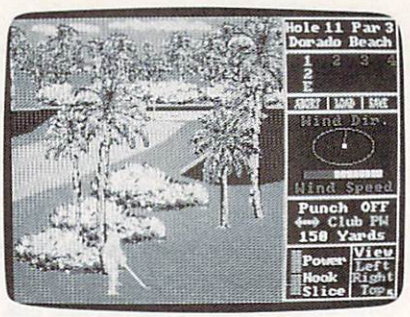
World Class Leader Board Famous Courses of the World, Volume 1

Access
545 W. 500 S
Suite 130
Bountiful, UT 84010
(801) 298-9077
Requires 512K
$44.95
$19.95 (course disk)



World Class Leader Board (WCLB) is a golf simulator that allows up to four different golfers with different abilities to compete on a variety of beautifully manicured and challenging golf courses. Each course is accurately displayed with a variety of trees, shrubs, water, and sand traps, plus golfers must contend with both changing winds and sloping greens.

A good golf simulator must blend game controls, speed, and graphics well—and *WCLB* does exactly that. The game's controls, all mouse-activated, are logical and easy to handle; its speed is realtime; and the detailed, colorful screen displays are updated quickly.



With other golf simulators I've played, either the realism of the graphics were sacrificed in order to update the screen quickly or else the graphics took so long to display that the game became tedious. Thankfully, *WCLB* sacrifices neither. It is fast and beautiful.

There are three levels of competition: kid, amateur, and professional.

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At kid level, the ball will neither slice nor hook, the ball is not affected by wind pressure, and club suggestions are offered. The main differences between amateur and professional are the effect of the wind and the difficulty of putting, and, on the professional level, players are not helped with club selection.

At the professional level, it's much more difficult to make long putts. After each round, you can dump your scores to a printer so you can brag to your friends. In case you try to convince someone that you shot a 12 under par at Pine Ridge as a pro, the printout also displays which difficulty level you used.

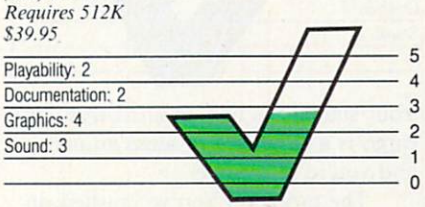
The game disk comes with four 18-hole courses, and the optional *Famous Courses of the World* disk includes four others, including Pine Ridge, which is the most difficult of the eight (be sure to pack your scuba equipment if you play that course). A course-design program is included with both disks so you can create and play your own courses. If you wish, you can easily recreate the courses in your area or those which exist only in your mind.

For true realism, *WCLB* lacks only two features: the smell of freshly cut fairways and dew to moisten the soles of your golfing shoes. If you are a golfer, *WCLB* is your game.

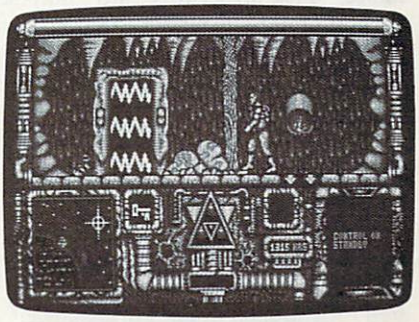
—G.F.

Prison

Actionware
38 W. 255 Deerpath Rd.
Batavia, IL 60510
(708) 879-8998
Requires 512K
$39.95



It's the year 3033, and you're Jag Edwards, undercover cop. But you've been set up and then imprisoned on Altrax, an isolated penal planet reserved for the worst felons that humanity has to offer. Is there any chance of escape?



This is *Prison,* an interactive animated-graphics adventure from Actionware. *Prison* is totally joystick-controlled; no typing is required. Your joystick manages 12 different functions, including character movement and combat. That's a lot, and it takes some getting used to. But once you get the hang of it, it's convenient and fast.

The joystick also selects text commands from the menu window. Most work well, although the search com-

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mand has an interesting quirk. For instance, the screen may show an object on the ground—a security card, for instance. "Pick up security card" may be a menu option, but if you "search" that area, nothing turns up. What about the security card?

Prison has exceptional graphics with almost photographic detail. The game also features time-of-day lighting. Overall, it's a visual treat that evokes just the right mood.

Documentation? Uneven. Some features are fully explained; others aren't mentioned at all. For instance, there are two red lights on your status board. They flash from time to time, but there's not a clue as to what they mean.

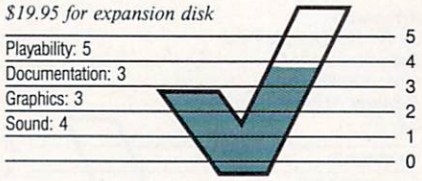
One arresting feature of *Prison* is its graphic portrayal of violence. We're talking hands-around-the-neck strangulation here. There are also explosives, pools of acid, and—well, you get the idea.

If you're up to it, *Prison*'s 300-plus screens and ultrasmooth animation will keep you entertained for hours. It really makes your living room feel like a *Prison* planet. But it's not for the faint of heart.

—S.H.

Discovery

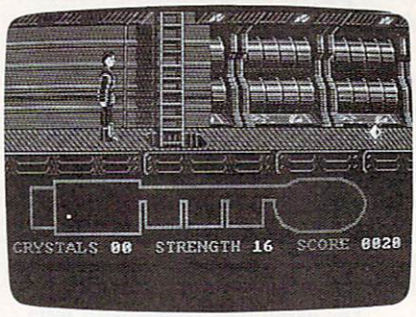
MicroIllusions
17408 Chatsworth St.
Granada Hills, CA 91344
(818) 360-3715
Requires 512K
$39.95
$19.95 for expansion disk



Your starship is named *Discovery*. Its cargo is a shipment of alien animals, and you're in trouble.

The problem: You've crashed on a desolate asteroid and dislodged 12 crucial fuel crystals. To aggravate matters, you've smashed the cargo containers, unleashing an unearthly menagerie that's running rampant in what's left of the ship.

What can you do? Put it all back together, of course. And that's what *Discovery,* from MicroIllusions, challenges elementary and high school students to do.



In some ways, *Discovery* is like 957 other outer-space games. You choose from four different characters (two human, two decidedly not) to be your alter ego. Then you've got to avoid the aliens or collect penalty points if you don't. There's the promise of extra energy if you pick up some sort of treasure.

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If that was all there was to it, this would be just another romp among the stars. But *Discovery* throws in an interesting twist. As you wander through what's left of your ship, avoiding aliens and looking for fuel crystals, you encounter hostile doors. Yes, hostile doors. There you are, walking along and minding your own business, when—whomp!—a sliding door slams in your face, blocking the way.

The only way to open a door is to spell a word, solve a math problem, or answer a multiple-choice question. What looked like just another adventure to the stars has suddenly become a slick and subtle adventure in learning.

It's a varied adventure, too. The main program disk features math-oriented doors, but a collection of expansion disks turn the doors into experts in spelling, geography, science, language, social studies, and history. There are even disks filled with trivia, and the doors willingly absorb it all.

In *Discovery,* as in so much of real life, knowledge is the key that opens doors. By encouraging children to exercise their minds as well as their trigger fingers, *Discovery* does what few educational programs have done. It makes first-class use of the computer's power to really make learning fun. And it'll keep children of all ages coming back for more.

—*S.H.*

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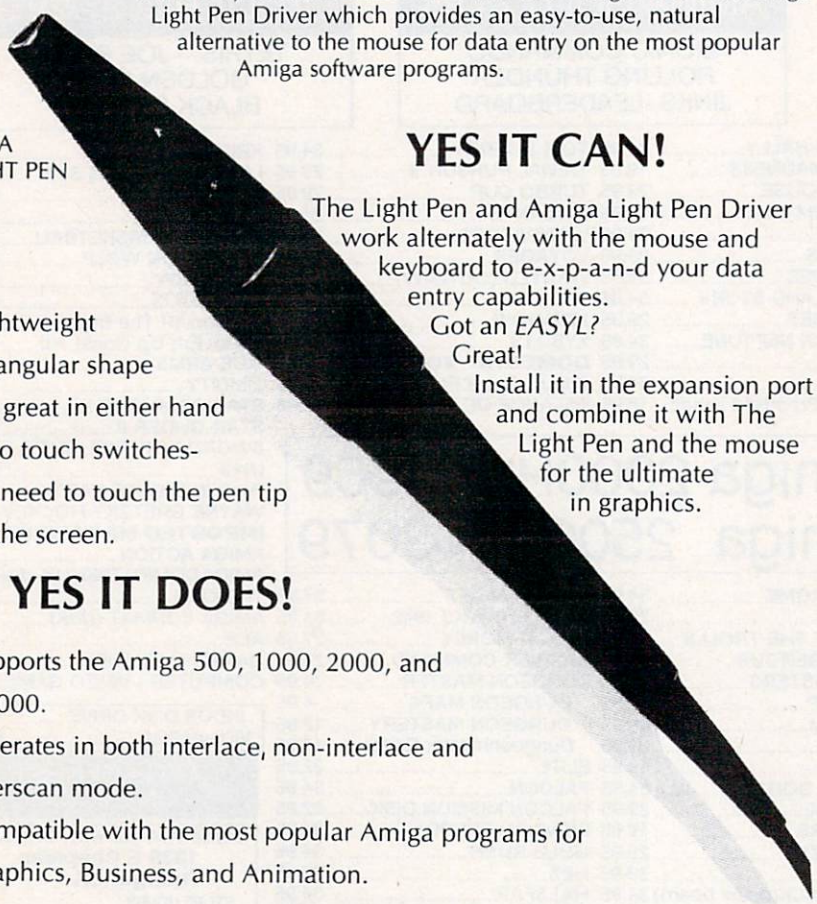

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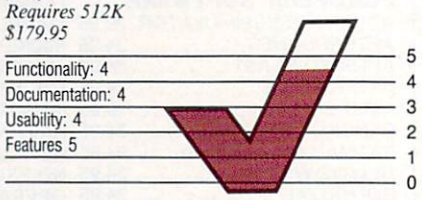

JForth Professional 2.0 is everything an Amiga compiler should be: fast, flexible, and easy to use. *JForth* compiles directly to 68000 machine code to produce programs that execute much faster than those generated by traditional Forths. *JForth* also gives you the option of writing programs using ASCII text files created with your favorite text editor or the old-fashioned BLOCK environment with SCRED, JForth's WYSIWYG editor.

JForth is well adapted to the Amiga. You can call the Amiga Library routines directly by name, and you can use C-like structures to make calling them easier. To make programming the Amiga easier, Delta Research has included dozens of Amiga-specific toolboxes with *JForth.* EZMENUS, GRAPH_SUPPORT, DEVICE_CALLS, ICON_SUPPORT, DOSCOMMANDS, and IFF are only a few examples. They have also included several useful demo programs that not only demonstrate what *JForth* can do, but also show you how to use the language.

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traditional Forth implementations is the inability to separate the program from the Forth image itself. Delta Research solves this problem with a target compiler. The target compiler, Clone, automatically strips away unused code from the Forth image, leaving only your program. The code generated by Clone is relatively small and fast, but it isn't quite as refined as that produced by some of the current Amiga C compilers.

JForth Professional 2.0 includes a disassembler, two assemblers (one RPN and one Motorola syntax), a source-level debugger, and an object-oriented development environment (ODE) similar in concept to Small-Talk. I've heard many people say that Forth is a dead language that has no place on the Amiga. *JForth Professional* 2.0 proves them wrong. I can't imagine a better implementation of Forth for the Amiga. I haven't programmed in Forth in years and didn't intend to go back to it, but *JForth* just might make me change my mind. I highly recommend it.

—*D.M.* ⊡

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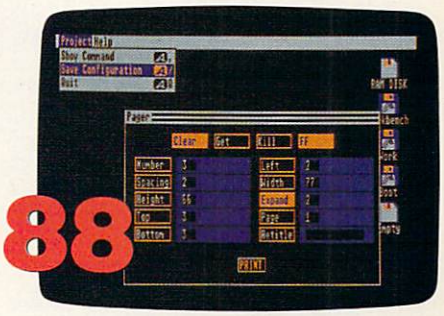
ON DISK

Your Guide to This Issue's Programs

Amiga Resource
Volume 1, Number 5
December 1989



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Our popular picture-viewer just got better, with new SHAM features, wildcards, and more.

88 Page
A versatile, easy-to-use text-file printer that runs from the CLI or the Workbench.

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Run programs with a keypress using this sizzling utility.

91 Arachnoid
Purple wasps, strange vials of venom, mechanical spiders that bounce—what a game!

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V Version 2

Tim Midkiff

Amiga Resource debuted "V" in the Summer 1989 issue. Designed to be the most user-friendly of all Amiga picture viewers, V has quickly earned its place on the Workbench disks of our readers. It views pictures drawn in paint programs, created with 3-D software, captured with screen grabbers, and downloaded from bulletin boards.

Now V is even better. Although it's packed with new features, it's smaller and faster than before. V views any standard IFF graphics file, including hi-res and lo-res, interlace and noninterlace, HAM, SHAM, EHB, overscan, and brushes.

What's New

V can automate your picture viewing. By writing an AmigaDOS script file, you can make a slide show. V lets you specify a time (in seconds) before it will start loading the next picture file. Here's an example:

```
V DOG.PIC HORSE.PIC 10
V FISH.PIC 20
V PICTURES/~*.info 0
```

You can type each of these lines from the CLI, but it's handier to use an editor to create a batch program (let's call this one BATCHPICS) that contains these commands. Then you can execute the batch file with a command like EXECUTE BATCHPICS. This batch file will show the pictures dog.pic and horse.pic, delaying 10 seconds after both pictures load. It will then display fish.pic and delay for 20 seconds. Finally, it will show all the files in the pictures/ directory (except those ending in .info) at maximum speed.

The final line in the example above shows the powerful wildcard facilities of V. The program can use all the standard AmigaDOS wildcards, plus those found in ARP. Especially notable are *, which is identical to #?, and ~, the "not" wildcard, which lets you exclude files. Wildcards also can be used in V's file requester. Just double-click the V icon, select the directory, and type a wildcard (like *) in the file gadget. V will show all of the pictures that match the wildcards.

When V shows more than one picture (when you type in multiple filenames or use wildcards), it loads each successive picture behind the one that is currently showing. This allows V to progress through the pictures without returning to the Workbench screen.

V also supports Sliced Ham (SHAM), a new Amiga video mode, created by *Amiga Resource*'s own Rhett Anderson, that changes the palette on each scan line to achieve fringe-free HAM images. Programs that create Sliced Ham pictures are available on bulletin boards and on future *Amiga Resource Disks*. V works with both 320 × 200 and 320 × 400 Sliced Ham images.

The program now supports *DeluxePaint* color cycling. Press the Tab key to toggle color cycling. To create pictures which use color cycling, see your *DeluxePaint* manual.

Second, you can click on a picture's icon and then shift–double-click V's icon. The picture will be displayed. If you want to see more than one picture, click on the first, shift-click on the rest, and finally shift–double-click on V.

Finally, you can change the default tool of the picture you wish to view. To do this, click on the picture's icon and select Info from the Workbench's Workbench menu. Click on the Default Tool gadget and type V. If you have V in your C: directory, type C:V. If it is in your utilities folder, type SYS:Utilities/V. Or, if you wish to keep V on the *Resource Disk*, type. RESOURCE4:V. Click on Save. The next time you double-click on the picture's icon, it will be displayed by V automatically.

"V" now shows pictures created in the revolutionary Sliced Ham mode that gives the Amiga the sharpest, most colorful screens yet.

V allows you to move the screen so that you can view different parts of oversize screens. Use the cursor keys to move the physical screen. If the picture is larger than the page size, you can use shifted cursor keys (or hold down the right mouse button and move the mouse) to change which part of the picture you are viewing.

V now requires arp.library in order to run. To copy arp.library to your boot disk, boot up normally, insert your *Resource Disk*, open the Install directory, double-click on InstallARP and follow the prompts.

What's Old

If you've never used V before, here are detailed instructions for using it. The program is located on the root directory of the *Resource Disk*.

Workbench users can select pictures to view in three ways. First, you can double-click on the V icon to bring up V's file requester. You must use this method if the picture files do not have icons. From the file requester, you can choose the file you wish to view. Multiple files can be viewed by entering a wildcard for the filename.

When you've finished viewing a picture, click the left mouse button to exit. The Esc key exits the program.

V is most powerful when used from the CLI. The statement V PICTURE.PIC dis-

SPECS

```
V
PROGRAM SIZE: 10,372 bytes
SUPPORT FILES: arp.library
MINIMUM CONFIGURATION
   256K RAM
   AmigaDOS 1.2
   ARP 1.3
ENVIRONMENT
   Workbench
      Shift-click picture(s), and
         then shift–double-click icon
      Double-click icon
   CLI
      RUN V [filename(s) [time]]
```

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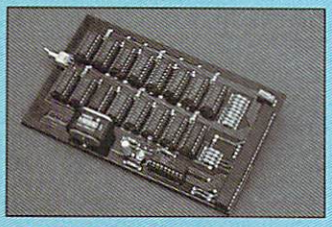

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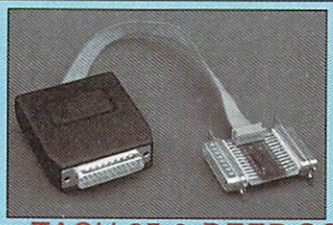

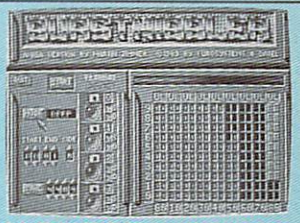

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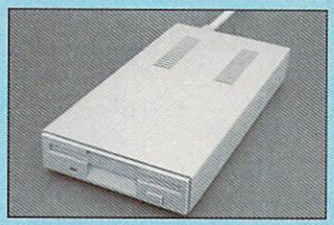

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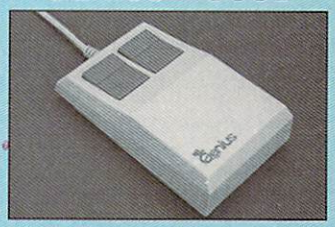

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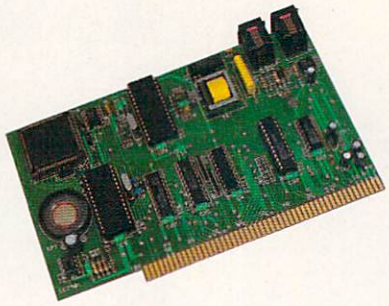

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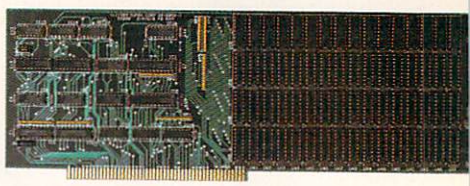

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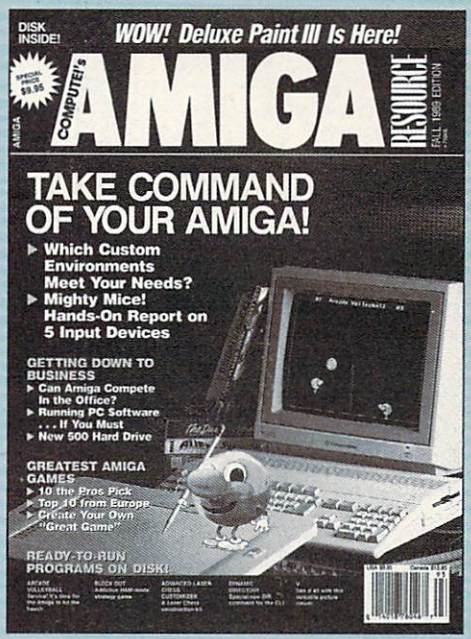

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plays a file named picture.pic. The statement V PIC1.PIC PIC2.PIC displays the file PIC1.PIC and PIC2.PIC. You must click the left mouse button when you've finished viewing each picture. Several pictures can be viewed in succession in this manner.

By specifying a number at the end of the command, you control how long V pauses before it exits or begins to load the next picture. The value is in seconds.

If you'd like to use V's file requester from the CLI, just enter V. From the file requester, you can specify a single file. Use wildcards to specify more. Note that you cannot use the delay feature while using the file requester.

Page

David Gross

"Page" is a text-file printer with just about every feature you could want. It's an ideal way to print out document files, source-code files, or any other files created with a standard ASCII-based text editor or word processor.

Page was originally written for use in the Amiga's CLI environment, but we've included a second program, "Pager," with a point-and-click Intuition interface to make it easy to use from the Workbench.

Although its primary task is printing, Page's output can be sent to the screen, a disk file, or any other Amiga output device.

Printing Pages

If you plan on using Page from the CLI, copy it to your C: directory. Workbench users should copy three files to their system disk: Page to the C: directory, arp.library to the LIBS: directory, and Pager to whatever directory you wish. This process has been automated; just boot with the Workbench disk that you wish to install the Page files onto, insert the *Resource Disk,* open the Install directory, click on the InstallPage icon, and follow the prompts that appear onscreen.

Before you begin using Page, you should learn its options. There are 14 in all.

C (Clear). Do not output the title line on each page. Normally, Page writes a title line that consists of the time, date, and name of the file. The C option disables this feature.

G (Get). Get permission before printing each page. After each page is printed, Page pauses. Press RETURN to continue or ESC followed by RETURN to abort. If you press CTRL-C at this prompt, the title line will be printed before the program exits. Note: This option does not work if you specify input redirection on the command line.

K (Kill). Truncate long lines instead of wrapping them to the following line.

F (Form feed). Cause the printer to form feed after each document. This option is useful if you're printing several documents consecutively. Page defaults to no form feed.

N (Number). Number each line of the file. This is especially useful for programmers who use a language that reports errors on specified line numbers. An optional numeric parameter can follow the *N*. This parameter lets you choose the field size (number of characters) allotted for each line number. The default is three characters.

S (Spacing). Set the line spacing of the printout. Lets you set double-, triple-, or other size spacing. Page defaults to single-spacing. If you specify the S option without a numeric parameter, you'll get double-spacing.

H (Height). Set the total height in lines, including the top and bottom margins and the space needed for the title line (if any). The default is 66 lines.

T (Top). Set the top margin. A numeric parameter is optional. The default is 3 without this option, 0 with the option turned on.

B (Bottom). Set the bottom margin. The optional numeric parameter defaults to 0. Page defaults to 3 when this option is turned off.

L (Left). Set the left margin. A numeric parameter is optional. The default is 2 without this option, 0 with the option turned on.

W (Width). Set the page width in characters. A numeric parameter is mandatory. If this option is turned off, the page width defaults to 77.

X (eXpand). Set tab expansion. This option lets you specify tab stops. Without this option turned on, tabs are assumed to be at every four characters. Specify 0 if you want tabs to be ignored. Specify 1 to translate each tab to a space. If you specify a higher number *n,* tab stops will be assumed at every *n* characters. If this option is turned on without a numeric parameter, tabs are ignored.

P (Page). Set the page at which to begin printing. A numeric parameter is mandatory.

R (Retitle). Replace the default title text that will be printed at the top of each page. This option may be given in two forms, -R*text* and -R *text*. The first builds a title consisting of the text *text* followed by a space and then the page number. The second dispenses with the space if you'd rather use a dash or some other punctuation to precede the page number.

CLI Power

Page is designed to be used from the CLI or Shell. It supports input and output redirection, so you should read up on those subjects if you are unfamiliar with them. If no output file or device is specified, Page will write to a console window.

Page offers very flexible option selection. For instance, each of the following lines produces the same output:

page -GW120CK page.c
page page.c -k -gw 120 -c
page -cW120 page.c -kg

It is difficult to describe the sytax for Page because of its flexibility, but at its simplest, it is

page [>*outfile*] <*infile* | *file* [options]

Options (or groups of options) must be preceded by hyphens. Note that you must supply either *infile* or *file.*

Here are a few useful examples:

page -CG -T1 -B1 -H21 *file*

This command outputs *file* a page at a time into a full-screen window, requiring the press of the Return key after each page.

SPECS

Page
PROGRAM SIZE: 7,300 bytes
MINIMUM CONFIGURATION
  512K RAM
  AmigaDOS 1.2
ENVIRONMENT
  CLI
    PAGE [>*outfile*] <*infile* | *file*
      [options]

Pager
PROGRAM SIZE: 10,868 bytes
SUPPORT FILES
  C:PAGE
  LIBS:ARP.LIBRARY
MINIMUM CONFIGURATION
  512K RAM
  AmigaDOS 1.2
ENVIRONMENT
  Workbench
    Click file icon; then shift–double-click Pager icon

page >par: -L5 -W90 *file*

Outputs *file* to a 96-character-per-line printer connected to the parallel port, with a left margin of 5 and a right margin of 6.

page >*outfile* <*infile* -C -T0 -B0 -L0 -W10000 -X3

Copies *infile* to *outfile* unchanged except for the conversion of tabs (which are assumed to be at three-character stops) to the proper number of spaces to fill out the tab stops.

Needless to say, it can be tedious to type in Page commands. If you find that you're using the same options over and over, you may wish to write batch commands to do the job. AmigaDOS 1.3 users can use ALIAS instead. For example, the command **ALIAS PageWin page -CG -T1 -B1 -H21 [ ]** in your shell-startup allows you to type PAGEWIN FILE to write a file to the screen.

Workbench Ease

For those who would rather work from the Workbench, we've written Pager, an Intuition interface for Page. Pager gives you several options for selecting files to print. You can shift-click on the icons of the files you wish to print, and then shift–double-click on the Pager icon, or you can double-click the Pager icon and use ARP's file requester. If you use the file requester, you have the added advantage of being able to use wildcards in selecting your files. See "V," an article in this issue, for more information on the ARP file requester and ARP wildcards.

Pager has two menus. The first, Project, has the items Show Command, Save Configuration, and Quit. Show Command displays the Page command that Pager generates. Save Configuration allows you to choose your favorite settings and save them to disk (in the file S:PAGER.CONFIG). These settings are loaded each time you run Pager. Quit lets you exit to the Workbench.

The second menu is the Help menu. From the Help menu, you can get information about any of the Page options.

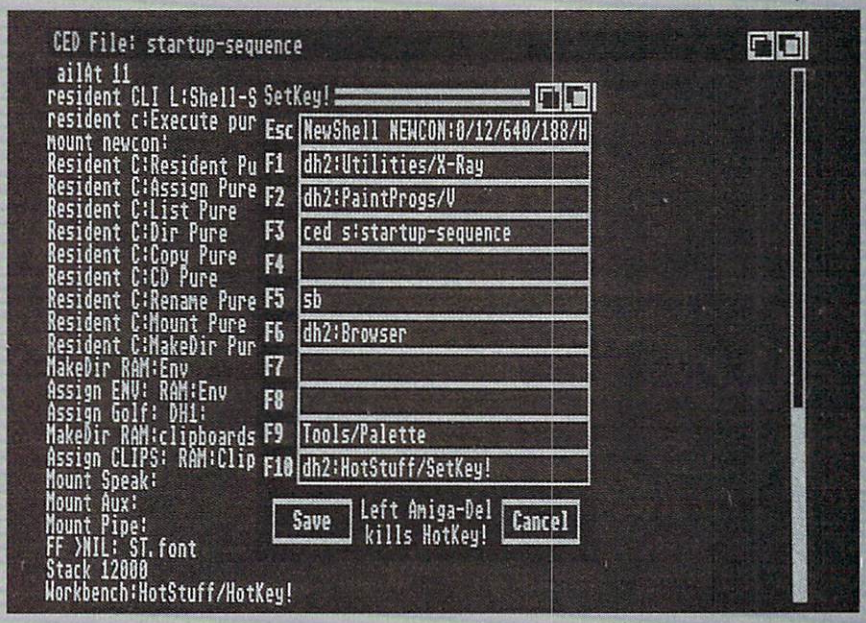
The Page window has gadgets that you can toggle between on (highlighted) and off (not highlighted). The four gadgets along the top are the clear, get, kill, and form-feed gadgets, none of which take parameters. The gadgets down the left side of the window all take command line parameters. Each of these gadgets has a string gadget next to it into which you can enter the number or string associated with the option.

When you're ready to print, select the PRINT gadget at the bottom of the window.

HotKey!

Randy Thompson

Need to open a new CLI? Press Left Amiga–Esc and you have it. Want quick access to an "X-Ray" window? Hit Left Amiga–F1 and watch it open on the current screen. How about your favorite word processor, database program, DOS utility, or program editor—which of these programs would you like to activate with a keypress? With "HotKey!," you can give them all *hot keys*.



Hot keys are special keypresses that activate programs. When you hit a hot key, it's as if you had double-clicked the program's icon or entered the program's name from the CLI. HotKey! can attach hot keys to almost any program. You can assign programs or CLI commands to any or all of the ten function keys and the Esc key. So every time you press Left Amiga in conjunction with one of these keys, HotKey! runs the specified program.

Up and Running

To use HotKey!, simply double-click its icon or enter HOTKEY! from the CLI. By including the HOTKEY! command in your startup sequence, your hot keys will be available every time you use your Amiga. HotKey! automatically detaches itself from the CLI so you don't have to RUN it, and the CLI is free to close even while HotKey! is still operating.

For your convenience, we've assigned some default commands to HotKey!: Left Amiga–Esc opens a new CLI window, Left Amiga–Del kills HotKey! (disables its hot keys), and Left Amiga–F10 runs "SetKey!," HotKey!'s companion program.

Defining Hot Keys with SetKey!

SetKey! is your HotKey! customizer. When you run SetKey! from the Workbench, from the CLI, or via HotKey! by pressing Left Amiga–F10, SetKey! opens a window containing 11 string gadgets (rectangular boxes that accept characters entered from the keyboard). There's one gadget for the Esc key and one for each of the ten function keys. The SetKey! window automatically opens on the frontmost screen, so you don't have to switch back to the Workbench screen just to change your HotKey! settings.

To assign a program to a hot key, click in the box that follows the name of the key you wish to use and enter the desired command or program name. Unless that program or command is located in SYS: (the disk that you boot with) or C: (your boot disk's c directory), you must specify the program's complete pathname (SYS:Prefs/Preferences or SYS:Utilities/Notepad, for example). If the program's filename, disk name, or drawer name has a space in it, as with the disk name Extras 1.3, you must place the entire command in quotation marks. To run the Palette program found on the Extras 1.3 disk, for example, you must enter the command "Extras 1.3/Tools/Palette". The basic rule here is: Enter the same command that you would use to run the program from the CLI.

If you're not sure how to run a program from the CLI, check the manual that came with the program in question. It should tell you what command you must enter. If it doesn't, you can probably get the program to work simply by entering the program's name into one of SetKey!'s string gadgets. Remember: If the program is locat-

ed in a drawer or found on a hard disk partition or a disk other than your boot disk, you must provide the name of the disk and directory in which the program is located. Otherwise, HotKey! won't be able to find it.

When you've finished editing your hot keys, click SAVE to accept any changes that you've made. (Your disk must have its write-protect tab closed in order for SetKey! to successfully save your changes.) To abort SetKey! *and* all your editing changes, click CANCEL.

A few notes on using SetKey!'s string gadgets: You can enter commands of up to 80 characters in length. If a command is over 30 characters, the text scrolls left so you can see what you're typing. You can clear a string gadget of all text by pressing Right Amiga–X. To move to the end of your text, press Shift–Cursor Right. To move to the first character, press Shift–Cursor Left. Right Amiga–Q restores the text to its original state, thereby undoing your editing changes. You do not have to press Return to accept the text; entered characters are automatically recorded.

Using Hot Keys

To use a hot key, simply hold down the Left Amiga key and press Esc or one of the ten function keys. The program that you assigned to that key will run. When there's nothing assigned to a key, nothing happens when you press it. If you find that a key is not working properly, run SetKey! and double-check your typing. You have probably misspelled the program name or neglected to provide the proper pathname.

HotKey! does not make programs resident; the programs attached to hot keys are loaded from disk whenever you call them up. As a result, if you assign a hot key to a program located on your Extras disk, that disk must be in the drive when you press the corresponding hot key. If it's not, your computer will ask you to insert it.

HotKey! works best if you own a hard disk, since programs saved on the hard disk load quickly and are always accessible to the computer. If you're using a floppy disk setup, try copying some of the programs you have attached to hot keys into the ramdisk (be sure to change the appropriate hot-key definitions to reflect the programs' new location). This will speed up HotKey! considerably. You can also use Workbench 1.3's Resident command to make certain programs easier to find (no more *Insert Disk* prompts) and faster to load.

Things to Try

Run SetKey! and you'll see that the Esc key is set up to open a new CLI using the following command:

NewShell NEWCON:0/12/640/188/HotCLI!

The NEWCON:0/12/640/188/HotCLI! portion of this command informs the computer to open a large CLI window using the name HotCLI!. As written, this command works under Workbench 1.3 only. To change it to work on a 1.2 system, use the following command instead:

NewCLI CON:0/12/640/188/HotCLI!

By default, function key F10 is set up to run SetKey! using the command

SYS:HotKey!/SetKey!

This command assumes that the SetKey! program is found on your boot disk in a drawer named HotKey! (as it's found on the *Resource Disk*). If you move SetKey! into a different drawer, such as the Utilities drawer, you must be sure to change the definition for F10 to reflect SetKey!'s new location. In order for SetKey! to work, it must be in the same drawer as HotKey!.

What other programs or commands should you attach a hot key to? One of my favorites is Workbench 1.3's Palette program. You can find Palette in the Tools drawer of your Extras 1.3 disk. Palette allows you to change a screen's colors (any screen) using slider gadgets. When run, it automatically opens on the frontmost screen. Running Palette from a hot key makes a lot of sense because you don't have to flip back to the Workbench screen, find the program, run it, and then race back to the screen whose colors you wish to change. I recommend that you copy Palette into the Utilities drawer on your boot disk and set one of HotKey!'s function-key definitions to read

SYS:Utilities/Palette

The calculator program that's found in Workbench's Utilities drawer is also a useful HotKey! addition. By using the following line, you can have the calculator available with a keypress:

SYS:Utilities/Calculator

The program I use the most with HotKey! is "X-Ray," from the Summer 1989 issue of *Amiga Resource*. It allows you to look through screens so you can see what's going on with any other program that's currently running. Like Palette, it opens its window on the frontmost screen. Since I keep it in my boot disk's root directory, all I need to enter into a hot-key definition is

X-Ray

You may encounter a few programs that run from the Workbench only, programs that don't like having hot keys attached to them. Using the WBRUN utility that appeared on our Fall 1989 *Resource Disk* as part of that issue's "Ask Rob Peck" column, you can successfully "hot key" these Workbench-only programs. For example, *ProWrite* 2.0 tends to act strangely when it's run from a hot key (random crashes, inability to recognize all disk devices, and so on). By utilizing WBRUN, you can attach a hot key to *ProWrite* using this simple command:

WBRUN >NIL: <NIL: PROWRITE

For this to work, you must have WBRUN in your C: directory.

Hot keys can be attached to more than just small utilities. For example, I have *Diga!* and *DeluxePaint III* attached to two of my function keys. You can also have HotKey! perform certain tasks instead of running programs. For example, if you use *BlitzDisk* to speed up your disk access, you can set up one hot key to install *BlitzDisk*—BLITZDISK 500 DF0:—and another one to disable it and free up memory—BLITZDISK QUIT.

HotKey! can also be used to execute script files. For script files that output text, have your hot-key definition open a new CLI window for them. For example, to execute a script named MAKEFILE, use the following command:

NEWCLI from S:MAKEFILE

This command assumes that your script file is in S:. When the script file is finished, the output window stays open until you enter ENDCLI. By putting the ENDCLI instruction as the last command in your script file, the

SPECS

HotKey!
PROGRAM SIZE: 3,264 bytes
MINIMUM CONFIGURATION
  512K RAM
  AmigaDOS 1.2
ENVIRONMENT
  Workbench
    Double-click icon
  CLI
    CD HOTKEY!
    HOTKEY!

SetKey!
PROGRAM SIZE: 3,892 bytes
MINIMUM CONFIGURATION
  512K RAM
  AmigaDOS 1.2
ENVIRONMENT
  Workbench
    Double-click icon
  CLI
    CD HOTKEY!
    SETKEY!

window closes automatically. If you use Workbench 1.3, add the commands

```
ASK "PRESS RETURN TO CONTINUE"
ENDCLI
```

to the end of the script file and the window will stay open until you hit the Return key.

As you can see, HotKey! is really quite versatile. Give it a try and see what you come up with.

Inside Notes

Programmers: *Blink* produces an error 515 when you compile either HotKey! or SetKey!. Ignore this error—it's a bug in the linker, not in the program being linked.

The program's hot-key definitions are stored on disk in the tool types section of HotKey's info file. To view (or even edit) them without the use of SetKey!, click on HotKey!'s icon and then select Info from the Workbench menu. Scan through all of the Tool types and you'll find HotKey!'s current settings. By storing the key definitions in HotKey.info, everything is kept in one small, cohesive package.

Arachnoid

David Wright

Arachnoid (ə rak'noid), *n.* **1.** a bionic spider (half tarantula, half machine) designed by the government in the early 1990s to ward off attacks of giant African killer wasps. **2.** any of a class of computer-controlled robo-spiders used for defense.

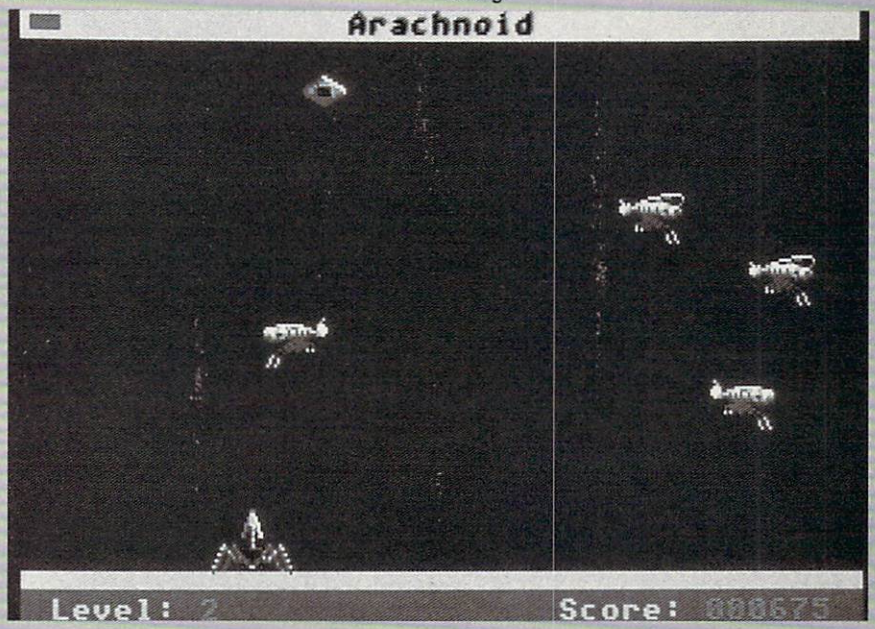
Giant killer wasps are headed this way and it's up to you to stop them. You're prepared, though: Equipped with a joystick-controlled model A500 Arachnoid, you have the potential to knock out an entire swarm of angry insects.

But wait! Radar reports not one, but nine swarms of wasps, spaced at ten-mile intervals. To complete your mission, you'll have to blast each and every bug out of the sky, wave after wave. So grab a joystick, power up your computer, take a deep breath, and *fire!* You've got a serious insect problem to take care of.

Preparing for Battle

To play "Arachnoid," plug a joystick into port 2 and double-click the program's icon found in the Arachnoid folder on this issue's *Resource Disk*. Because the game saves high scores to disk, we suggest that you run the program from a non-write-protected copy of the magazine disk (write-protect tab in the closed position).

When the game begins, a droning buzz warns you of the approaching wasps. You control a mechanical spider—an arachnoid—that appears at the bottom of the screen. Using the joystick, you move left, right, and up. Movement is important in dodging attacking wasps. If you let them touch your arachnoid, the wasps will sting it (the screen will flash and you'll hear a loud *gronk*). Too many wasp stings and you're out of the game. Your energy level is shown in the upper left corner of the screen. The smaller that bar gets, the fewer stings you can tolerate.



Your only weapon against the wasps is a reusable missile that launches whenever you press the joystick's fire button. The missile must come back to your arachnoid before you can fire it again. Take careful aim, because only a direct hit to the middle portion of the wasp will do.

These wasps aren't pushovers. A simple hit from your missile only stuns them. After a while, the wasps get back up and resume their attack. To dispose of them permanently, you have to stand on a stunned wasp and inject it with venom—venom that you must obtain beforehand. Collecting venom is relatively easy; just touch one of the strange-looking vials that appear onscreen. Problem is, vials appear on the ceiling, above the swarm of stinging wasps. You're on the ground.

Bouncing Spiders

Getting to the top of the screen is tricky, but it can be done. To begin your ascent, move the joystick up and your arachnoid jumps into the air. One leap won't bring you high enough to reach the ceiling, however, so you must *bounce* your way to the top. While you're still in the air from your initial jump, press the joystick down until your arachnoid flips over. Now, when you hit the ground head-first, your spring-activated missile launcher will catapult you higher. It takes two such bounces to bring you to the top of the screen, and, as long as you stay in your inverted position, you'll stick to the ceiling when you get there.

While clinging on the ceiling, you can move left, move right, and fire missiles just as if you were on the ground; you can even do these things while flying through the air. In fact, it's a good idea to use your mobility to dodge wasps while bouncing up to the ceiling.

Touch a vial with your arachnoid to collect venom. A bell will sound and the strength indicator that appears in the upper left corner of the screen will change from red to yellow. Venom vials do not stay around forever. They appear in random locations and only for a short period of time. If you get to the ceiling too late to collect a vial, just hang out until the next one comes along. You only need to touch one vial to exterminate a swarm of wasps.

To get down from the ceiling, simply jump off by moving the joystick down. However, you'll bounce back up if your arachnoid doesn't land on its feet. Pressing the joystick up sometime during your fall will flip your arachnoid into an upright position, thus ensuring a stable landing.

Pest Control

As you might have guessed, the object of Arachnoid is to eliminate all the wasps. You kill a wasp by knocking it to the ground with a missile, moving on top of its stunned body, and then pressing down on the joy-

stick. This injects venom into the wasp (you must have venom), removing the buzzing fiend from the screen. For every insect that you kill, a dead-wasp symbol appears in the upper right corner of the screen. Your energy level increases, too.

When you've killed all the wasps on the screen, your points are added up and the next attack wave (level) begins. The current level number appears in the lower left corner of the screen. You start each level without any venom, so grab a vial as soon as you can. The game is won when you've conquered all nine levels.

Here's the basic strategy for winning the game:

- Shoot down some wasps to clear a little jumping room.
- Bounce on your head until you stick to the ceiling.
- Touch a vial of venom (your energy indicator will change to yellow).
- Jump down to the floor (be sure to flip over onto your feet).
- Shoot down wasps and inject them with venom.
- Repeat this for all nine levels.

You may quit the game at any time by pressing the Esc key. Press Return to cancel your current game and start over at level 1. You may pause the game with the space bar. Press it once to freeze; press it again to continue.

Scoring

The lower left corner of the screen displays your score. You get 15 points for every wasp that you stun. And at the end of each level, you get 100 bonus points for every unit of strength you have left.

A high-score board appears whenever you finish a game. Hit Return or click the window's close box to remove the high-score board and continue with the game. At this point you may press Esc to exit the program or Return to play again.

If you play well enough, you get to enter your name onto the high-score board. The highest level number that you reached and your final score will be recorded along with your name. Every time a new name is entered, the program attempts to save the scoreboard to disk. If the disk is write-protected, the Amiga will tell you so and ask if you wish to retry or cancel. To save the high scores to disk, remove the disk from the drive, slide the write-protect tab to the closed position, reinsert the disk, and select Retry. Otherwise, simply click on Cancel until the requester goes away and then click on the Workbench's screen-to-back gadget to return to the Arachnoid screen.

Tips for Success

Here at COMPUTE!, we've developed a few tricks while playing Arachnoid.

Dive-Bombing. Instead of killing wasps by standing over them, stay on the ceiling and dive-bomb them from above. With the venom in your possesion, move above your victim and push the joystick down to dive. By keeping the joystick pulled back when you contact the stunned wasp, you inject it with venom and bounce back up to the ceiling in one quick swoop. Be sure to release the joystick before you reach the top of the screen or you'll keep dropping to the floor.

Safety Shots. This tip ties in with the one above. Because you never know when a stunned wasp may get back up, fire a shot just before you attack it with a dive bomb. If the wasp recovers before you make contact, your shot will knock it back down before it stings you. For best results, wait for your safety shot to get two-thirds of the way down the screen before you dive.

Evasive Maneuvers. You take the most risk just trying to get your arachnoid to the top of the screen. Making it through a swarm of wasps without getting stung is tricky at best. To minimize your damage, practice dodging wasps by moving left and right while bouncing through the air. Learning to master such evasive maneuvers is the key to a long life.

Spearfishing. Most of us simply stand on the ground and shoot upward to stun wasps. For a much more exotic technique, try using your arachnoid as a weapon and literally throw yourself at the enemy. (This is especially effective when you attack from the ceiling.) Just before your impending collision, fire a missile. If you're lucky, the wasp will be skewered before it can use its stinger. While not very practical (chances are, you're going to get stung), spearfishing is an extremely entertaining way to disable your opponent.

SPECS

Arachnoid

PROGRAM SIZE: 15,504 bytes	
SUPPORT FILES	
SAMPLES/BOING.SAMPLE	2,498
SAMPLES/BUZZ.SAMPLE	22,152
SAMPLES/DOING.SAMPLE	7,022
SAMPLES/FIRE.SAMPLE	5,136
SAMPLES/INJECT.SAMPLE	2,792
SAMPLES/TICK.SAMPLE	528
SAMPLES/YOW.SAMPLE	6,118
SAMPLES/ZONK.SAMPLE	1,928
MINIMUM CONFIGURATION	
512K RAM	
AmigaDOS 1.2	
ENVIRONMENT	
Workbench	
Double-click icon	
CLI	
CD ARACHNOID	
RUN ARACHNOID	

Disk Update

Here's where to turn for bug fixes, operating notes, and news updates for the programs on COMPUTE!'s Amiga Resource Disk. *Readers experiencing difficulty with a disk should first read "How to Use the Disk," found in every issue of* Amiga Resource. *If you're still having trouble, write us (see the section "Where to Write" in "Readers Feedback").*

Fall 1989 Issue

ClickDOS's print option will not work if you boot with the *Resource Disk*. *ClickDOS* requires a printer driver, and it expects the spool program to be located in the C: directory. To get it to work properly, copy the *ClickDOS* program onto another Workbench disk and then copy the spool program into that disk's c directory. (Both of these programs may be found in the BestOfTheBoards/ClickDOS directory on the Fall *Resource Disk*. The spool program does not have an icon and must be copied using the CLI or *ClickDOS* itself.) Boot with your Workbench disk and run the program from there.

October (Winter) 1989 Issue

Just so you don't get confused, the disk labels for this issue should have said October 1989 instead of Winter 1989. *Amiga Resource* has transformed into a bimonthly magazine, and the October issue marks the beginning of our new publishing schedule. Unfortunately, our disk duplicator goofed up the labels in all the excitement.

The article "Rejection" incorrectly states that joystick ports 0 and 1 are used to play the game. If you can't find that first port, don't worry—you can use ports 1 and 2 instead.

"Mosaic" likes to trash the Amiga's low memory. If you run programs like *MemWatch,* you've undoubtedly stumbled across this. At the beginning of the program, a null pointer ***number** is declared and used throughout the program. It doesn't appear to cause any immediate problems (the program runs fine as is), but if you have a C compiler, you should fix it. You can correct the problem by changing the **char *number** declaration in line 24 to **char number[4]** and then changing all following occurrences of the variable **number** to read **&number**. The program's source code is included on the October (Winter) *Resource Disk* in the Source/Mosaic directory.

For your convenience, we've provided a patch file on this issue's *Resource Disk* that will fix Mosiac for you. Simply boot with our December disk, open the Install drawer, double-click the FixMosaic icon, and follow the prompts that appear onscreen.

—Troy Tucker

HOW TO USE THE DISK

Every issue of *Amiga Resource* has a companion disk that features the exclusive programs we offer each issue, as well as the "Best of the Boards" program and the "Art Gallery" screens. You can get this disk in three ways. First, you may buy *Resource* with the disk in a poly-bag at your bookstore or computer dealer. Second, you may subscribe to the magazine with the disk. Third, you may order single copies of this disk (see the back-issues/disk-order ad elsewhere). If you experience a problem with the disk, even after you've read the programs' documentation, please contact us at (919) 275-9809 between 9:00 a.m. and 4:30 p.m. Eastern standard time, Monday through Friday.

To use the disk, insert it into your disk drive and then turn on your computer. (Amiga 1000 owners must boot with Kickstart first.) You may boot with your own Workbench disk, but the icons will not be as colorful as they are when you boot with the magazine disk.

You run programs by double-clicking their icons. Some programs may be found within drawers (icons that resemble file folders). Please look into each drawer on the disk. We recommend that you read the "On Disk" section of the magazine prior to running any of our programs. If you wish to move a program that is in a drawer to another disk, be sure to copy the entire drawer so that you can be sure that you copy all the support files that the program may need.

Most programs on the disk are accessible through the Workbench environment. Some programs, however, are designed to work only in the CLI environment. Such programs do not have icons and are not visible from the Workbench. Since the magazine disk may be too full to include many CLI commands, you will have to boot with your own disk to access the CLI and work with these programs.

Artwork from "Amiga Art Gallery" may be found in the ArtGallery drawer. To view a picture, double-click its icon. When the painting appears onscreen, simply click the mouse once to return to the Workbench.

Our disk is not copy-protected. We encourage you to make a backup of the disk as soon as possible. With the exception of the program in our "Best of the Boards" column, the contents of the disk are copyrighted and may not be used by anyone other than the owner of the magazine. Artists who appear in "Amiga Art Gallery" hold the copyrights to their own work. Amiga Workbench version 1.3 is copyright 1985, 1986, 1987, and 1988, Commodore-Amiga, Inc., all rights reserved. All other disk contents are copyright 1989, COMPUTE! Publications, Inc., all rights reserved. We ask that you respect the copyrights of the works on the disk and of the disk in its entirety.

We suggest that you write-protect the disk by sliding the write-protect tab to the open position. This will cause programs that attempt to write to the disk to fail. You can slide the write-protect tab to the closed position to allow writing, but there may not be enough room on the disk for any more files. If this is true, copy the offending program to another disk to use it.

On Disk This Issue

This issue's "Pager" and "V" programs require arp.library, a small system file that goes in the libs directory of your Workbench disk. We've included arp.library on the *Resource Disk,* so the programs run fine as long as you boot from this disk. You must copy arp.library onto your own Workbench disk if you plan to boot with that disk and then run these program. For your convenience, we've included two install files that automate this process.

Open up the *Resource Disk*'s Install directory and you'll find the files InstallPage and InstallARP. InstallPage copies all the files needed to run Pager onto your Workbench disk: Page, Pager, and arp.library. InstallARP only copies arp.library to your Workbench's libs directory—that's all V needs in order to run. To use these install files, you must boot with the Workbench disk that you want the files copied to; then double-click the InstallPage or InstallARP icon.

You'll find one more file in the Install directory. This one is called FixMosaic. As noted in this issue's "Disk Update" column, last issue's "Mosaic" program has an unfriendly attitude toward the Amiga's low memory. Although the program works fine as is, you should use the FixMosaic file to correct this bug. To use FixMosaic, simply boot with the *Resource Disk,* double-click the FixMosaic icon, and follow the prompts that appear onscreen. You must own a copy of our October 1989 disk—which is labeled *Winter 1989*—in order for this fix file to work.

To show off V's new ability to display SHAM pictures, we've included the Sliced Ham picture *Fishy* on this issue's disk. To view it, simply double-click the Fishy.sham icon. It's a very impressive picture.

With the exception of Dallas J. Hodgson's *NewZap* program, the source code for all of the programs on disk may be found in the disk's source directory. Within source are separate directories for each of the programs. For example, the source code for "HotKey!" may be found in source/HotKey!. The source directory does not have an icon and cannot be accessed via the Workbench.

If you own a sound digitizer or a sound-manipulation program, you may be interested in the digitized sounds that accompany our "Arachnoid" program—there are eight sound samples in all. These digitized sounds may be found in the Arachnoid/samples directory. These sound samples are stored in raw format, not in IFF format. ▲

On Disk Directory

```
Install (dir)
   .info                              FixMosaic
   FixMosaic.info                     InstallARP
   InstallARP.info                    InstallPage
   InstallPage.info
c (dir)
   AddBuffers                         Ask
   CD                                 Colorbench
   Copy                               Dir
   Echo                               Else
   EndCLI                             EndIf
   IconX                              If
   LoadWB                             More
   NewCLI                             Page
   Run                                Wait
system (dir)
   DiskCopy
l (dir)
   Disk-Validator                     Port-Handler
devs (dir)
      printers (dir)
         generic
   parallel.device                    printer.device
   system-configuration
AskRobPeck (dir)
   .info                              BoxMove
   BoxMove.info
s (dir)
   FixMosaic.script                   InstallARP.script
   InstallPage.script                 startup-sequence
Arachnoid (dir)
      samples (dir)
         Boing.sample                       Buzz.sample
         Doing.sample                       Fire.sample
         Inject.sample                      Tick.sample
         Yow.sample                         Zonk.sample
   .info                              Arachnoid
   Arachnoid.info
source (dir)
      AskRobPeck (dir)
         BoxMove.c
      V (dir)
         V.mod
      Arachnoid (dir)
         Arachnoid.c                        joy.h
         sound.h                            spdata.h
      Page (dir)
         Page.c                             Pager.mod
      HotKey! (dir)
         HotKey!.c                          SetKey!.c
libs (dir)
   arp.library                        diskfont.library
   icon.library                       info.library
   version.library
BestofBoards (dir)
   .info                              Changes
   Changes.info                       NewZap
   NewZap.docs                        NewZap.docs.info
   NewZap.info
ArtGallery (dir)
   .info                              56_Chevy
   56_Chevy.info                      Design_Why!
   Design_Why!.info                   The_Painter
   The_Painter.info
HotKey! (dir)
   .info                              HotKey!
   HotKey!.info                       SetKey!
   SetKey!.info
.info                             .patch
Arachnoid.info                    ArtGallery.info
AskRobPeck.info                   BestofBoards.info
Disk.info                         Fishy.sham
Fishy.sham.info                   HotKey!.info
Install.info                      Pager
Pager.info                        V.info
```

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DD17: Raytracing - Learn about raytracing the inexpensive way; DBWRender - Ray tracing, RayTracedPics, C source included.

DD21: General - This disk has Newzap and other high demand utilities including Arc023 - file archiver and compressor, C64FontConverter - convert C-64 fonts to Amiga, CSDBMS - simple database, DME1.22- programmers editor, FPic - image processing for IFF,NewZap3 - editing binary files, and PDMake, alist ,ask ,cls and others

DD40: General Advanced User; BitPlane - Changes workbench from 4 colors (2 bit planes) to 8 color (3 bit planes),includes some 8 color icons, Crc - for detecting transfer errors, Dmouse1.07 - A do-it-all input handler and mouse accelerator, Click-To-Front, Pop-Cli replacement, Mouse blanker, Sunmouse, and a screen blanker, FlipText - Prints text sideways on epson compatible printers, Getline - allows interactive script files, Marvin - gives daily quotes from the Hitchhiker's Guide to the Galaxy's Marvin, MyBatch - easy script file exectution,, and others.

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 (See also dd45), and DiskSalv 1.3 - By far the best disk and file recovery program available. And others

DD45: ARexx Programs- This disk has several useful arexx programs and examples included.

DD46 - JazzyWorkBench - Several well done utilities to jazz up and improve your Amiga Workbench environment. Includes; JazzBench, MyMenu, SimGen, Tapestry, UserMenu

WB1: Graphics and Plotting - Several neat graphic and mathematical plotting routines are include; Plot - a three dimensional mathematical function plotter. Scenery - fractal landscape generator. Surf - BezSurf is a program for producing bezier surfaces of revolution. It produces awesome pictures of objects one could turn on a lathe. And others

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 over 56 pts.

FD5: Tactical Games - BattleForce(3.0); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim. 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- This disk contains several pacman type games including; PacMan87, MazMan and Zonix, also Connect_4 - A checker type game, CRobots - ("see-robots") is a game based on computer programming (excellent), Tiles - A very good solitaire game played with three layers of picture (difficult).

FD8: Games! - This disk is full of games, game hints and a few game editors (cheat programs) including: Antepenult - The best PD Ultima type going, GameEditors-Crystal Hammer, BardsTale, TV Sports Football, and FaeryTale, GameHints-These are: Zak McKracken, Shadow Gate, FaeryTale, Space Quest II, Dragon's Lair, and others.

FD9: Moria - a very well done port of an UNIX based character adventure game. This has great graphic controls, multiple spells, similar to Larn and Hack. Takes up the hole disk. Play time several weeks!

FD10: Hack - A dungeon adventure game. Considered a must have classic. This is the second release of this game on the Amiga. Originally a UNIX game. Great Amiga graphic interface. Fills the whole disk. Play time several weeks!

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Note:

- Documentation for the disk programs is found in the corresponding magazine issue.
- The *Resource Disk* contains exclusive high-quality original software you won't find anywhere else—these are not public domain disks.
- The following descriptions are just a sampling of what's in each issue.

SUMMER 1989

IN THE MAGAZINE

Multitasking Miner: A conversation with the father of the Amiga; **Amiga Zapshots:** Using Canon's hot new video technology; **Expanding the 500:** Who says the 500 can't be as powerful as the 2000?; **Spotlight:** Digi-View.

ON DISK

Advanced Laser Chess: A high-tech version of chess where your queen is a laser and your pieces act as mirrors. **X-Ray:** A utility that looks through screens. **Mr. Gadget:** Intuition gadgets made easy. **Power Poker:** One of the most addictive games we've seen. **Eight-Color Workbench:** Doubles your Workbench colors. **MultiGadget:** Creates a program-generated grid of gadgets. ***Uedit:*** A flexible shareware text editor. **Art Gallery:** Ready-to-view Amiga art. **Plus:** Source code for all of the On Disk programs. **And More!**

FALL 1989

IN THE MAGAZINE

Making Great Games Great: You Ain't Seen Nothin' Yet; **Rodent Roundup:** Alternatives to Commodore's mouse; **Programmer's Page:** From 6502 to 68000; **Abstractions:** Wrestling Commodore's A590 Hard Drive

ON DISK

Arcade Volleyball: How do you play volleyball without hands? With your head, of course. **Block Out:** An addictive HAM-mode strategy game. **Advanced Laser Chess Customizer:** Design your own game of high-tech chess. **DD:** Dynamic Directory—The ultimate DIR command. **V:** A versatile picture viewer. ***ClickDOS* and *Browser:*** Alternatives to the Workbench and the CLI. **Art Gallery:** Ready-to-view Amiga art. **Plus:** Source code for all of the On Disk programs. **And More!**

OCTOBER 1989—NOW BIMONTHLY!

IN THE MAGAZINE

Lively Arts: Creating Amiga graphics and music; **1989 Guide to Amiga User Groups:** Over 270 user groups from around the world; **Ask Rob Peck:** Playing digitized sounds; **Taking Sides:** AmigaDOS 1.4—too much, too soon?

ON DISK

Rejection: You need a steel puck when you play hockey with high-voltage magnets. **Mosaic:** This strategy game is no mere puzzle—it's a battle of wits. **Macro Keys:** Redefine your functions keys for one-touch computing. **Snap!Plus:** Say *Cheese!* Snap your Amiga's picture with this easy-to-use screen grabber. **PlaySample:** Plays digitized sounds in C. **SYSCHECK:** Is your boot disk up to date? ***VirusX:*** Check your disks for viruses. **Art Gallery:** Ready-to-view Amiga art. **Plus:** Source code for all of the On Disk programs. **And More!**

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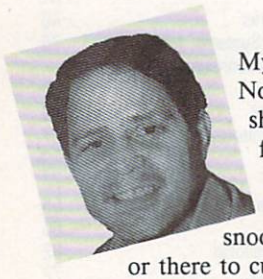
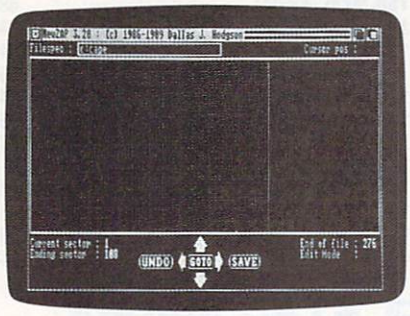
Sheldon Leemon

NewZap—Confessions of a Zapper



My name is Sheldon, and I'm a Zapper. No, not one of those guys who records TV shows before he watches them so he can fast-forward through the commercials. I'm a file Zapper. I get my kicks cruising through program and data files, snooping around and changing a byte here or there to customize existing applications without any reprogramming (of me or the application).

It all started with *DeluxePaint II*. I was complaining to a friend about how the disk drive device names DF0:, DF1:, and DH0: were hard-coded into the program's file-selector buttons. That meant that, if you had a drive with a different device name, like a Bridgeboard hard drive named JH0:, you couldn't use the buttons. Sure, I concluded, you could always use the CLI Assign command or the PD program *AssignDev* to fake it out, but what a pain. "Don't be such a chump," says my friend, "just Zap it." "Zap it?" I replied, and that's when I learned about a shareware program called *NewZap*.



• • •

"Don't be such a chump," says my friend. That's when I learned about *NewZap*.

• • •

Being a word slinger by trade, I was real familiar with text-file editors, programs like Ed or MicroEMACs that let you edit document files. But those programs just don't cut it when it comes to program or data files. Ed, for one, won't let you edit a file that contains anything other than text characters—it just quits, whining, *File contains binary*. And the text editors that do read binary files try to display the numbers as if they were letters. The result looks something like swear words from a Greek comic strip. And if you want to use them to replace character 246 with character 245, you've got to figure out what character 246 looks like and how to produce character 245, given the standard Amiga keyboard and the normal complement of fingers.

NewZap, on the other hand, is made to edit binary files. It treats files as if they were fixed-length blocks of numbers, which is important; if you change the size of a program file by even one byte, the program won't run any more. *NewZap* breaks the file into 512-byte pieces it calls *sectors* (not to be confused with disk sectors; *NewZap* works on file data, not on disk sectors). It displays the binary numbers in each 512-byte block as strings of hexadecimal digits. A separate box on the right shows the text equivalents, if any. Arrow gadgets allow you to move from block to block within a file or to a specific block number. Better yet, a String Search menu option lets you search for either a string of text or a specific series of hexadecimal numbers.

Once you find the data you're looking for, you can edit it by typing in either hex numbers or letters in the display area (yeah, I know, hexadecimal can be a pain, but it lets you to see an awful lot of data at once). After you make changes, you can use the UNDO button to restore the original numbers or use the SAVE button to save your changes to disk . . . which brings us to the following public service announcement.

WARNING: The Surgeon General Has Determined That Zapping Original Program Disks Is Hazardous to Your Mental Health. Clinical Tests Have Shown That It Results in Total Obliteration of Programs You Paid Good Money for, Destruction of Data That You Spent Dozens of Hours Typing in, Itchin', Twitchin', and the Low-Down Dirty Blues in the Night.

Duly cautioned by this sternly worded warning, I made a copy of *DeluxePaint II* called Dpaint.zap and typed NEWZAP DPAINT-.ZAP. When the display appeared, I selected the String Search menu and typed in DF0: as the string to search for. In a few seconds, the offending portion of the program appeared in the display. Carefully, I changed DF1: to RAM:, and DH0: to JH0: for my Bridgeboard hard drive, making sure that I changed only the letters in question (an extra space could blow the whole thing). Trembling with awe, I clicked the Save gadget, exited the program, and then ran Dpaint.zap. It worked! The buttons in the requesters had new names, and they accessed the drives I actually had. I was hooked.

In the next few days, I came up with dozens of uses for *NewZap*. Here are some of the most useful.

• Changing programs that create icons for their data files. For example, when I installed *Online! Platinum* onto my hard drive, I changed the program name to *Online*. The

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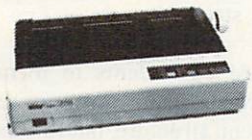

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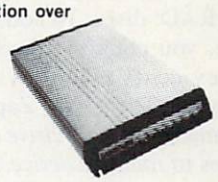

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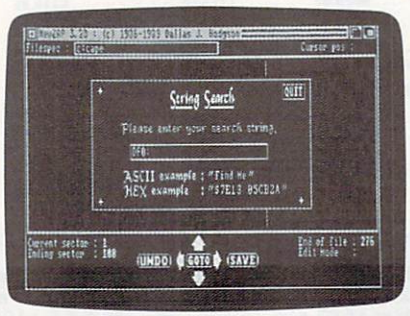
original name was just too long, and besides, I hate names with cutesy exclamation points in them (sorry, COMPUTE!). Anyway, every time I saved a terminal definition, the icon for the file would always look for a program called Online!:Platinum_Online! instead of Online. So I copied *Online* to the ramdisk (that's where I do most of my experimental Zapping) and started searching for the string "Online!:Platinum_Online!". When I found it, I changed it to Online!:Online and added a zero character to the end of the string. It's generally OK to shorten a text string, but I wouldn't advise you to try replacing a shorter string with a longer one—you might overwrite something really important and completely ruin the program. Anyway, the next time I saved a terminal-definition file, the icon had the right name.



With *NewZap*, you can search for and replace text strings or groups of hex digits.

• Creating multiple recoverable ramdisks. If you have a lot of RAM, the ramdrive device on Workbench 1.3 lets you mount an 880K RAD: disk, to which you can quickly Diskcopy entire floppies. This can speed up the play of disk-intensive games considerably, but only if they fit on a single floppy. For two-disk games, you need two full-size RAD: disks. To add a second one, you copy the devs:ramdrive.device file to devs:raddrive.device. Then, you Zap that file, changing all *ramdrive.device* references to *raddrive.device*. Make a duplicate entry for RAD: in the devs:Mountlist file, changing the name to RAD2:, the device listing to raddrive.device, and the boot priority to −127. You'll find that you can mount RAD: and RAD2: at the same time. To get rid of RAD2:, make a Zapped copy of the Remrad program called Remrad2, with the device name references changed to raddisk.device.

• Changing a program's default colors. *DeluxePaint III* starts up using a white pen on a black background, but I prefer a black pen on a white background. So I loaded the program and wrote down the red, blue, and green intensity values for the default color palette. The values for the first two colors were 0, 0, 0 and 14, 12, 10. Next, I looked up the format used to store colors in programs in my book *Inside Amiga Graphics* (COMPUTE! Books). I found that they're stored as four hex digits, the first of which is 0. Using my handy hex calculator (I use the TI Programmer, but there are plenty of software hex converters on the Amiga), I concluded that the hex number string I wanted to search for was $0000 0ECA. When I found it (in sector 339), I reversed it to 0ECA 0000; the next time I loaded *DPaint* I got a black pen on a white background. Unfortunately, when I changed to a 16-color palette, the black background returned. Doing a little searching, I found that the program stored several default color palettes.

There's a moral to this story: Be sure to search for each and every instance of the target string.

• Changing and adding keyboard equivalents to menu items. Changing existing keyboard shortcuts only requires you to replace one letter in the menu structure, but finding the right place to insert the shortcuts takes a little knowledge of the data structures that are used (one place to start your studies is with the public domain structure-browsing programs).

Adding new menu shortcuts is a little more difficult because they require you to add the number 4 to a flag byte, indicating that there is a keyboard equivalent. I'll leave the detective work up to the more adventurous among you, but, just to show that it works, try changing the Amiga-Q equivalent for Cancel in the Edit menu of the Notepad program to Amiga-K by substituting a *K* for byte 15C in sector 73 of the program. Then, add the equivalent Amiga-Q to Quit on the Project menu by changing byte 13A of the same sector to *Q* and byte 12D to *V* (four more than the *R* that's usually there).

• Snooping in game files (this is sometimes referred to as *cheating*). For example, my eight-year-old son, Joey, likes to play *Carmen Sandiego,* but he doesn't know which cities are in which countries. I wanted to make him a full list of cities and their corresponding countries, so I did a little poking around with *NewZap* and turned out the list in a few minutes.

As for me, I like playing *SimCity,* but I hate to run out of money. By searching for a number that equaled the amount of cash in my city file, I found out the bytes to change in order to fatten my wallet (sector 7, byte 024 and following).

You'll find *NewZap* in the BestofBoards folder on this issue's companion disk. Just double-click to get started. To read the documentation, double-click on the icon NewZap.docs. You can use "Pager" (found in the root directory) to print it out; just click on NewZap.docs, shift-double-click on Pager, and then click on Pager's print gadget.

In a column this size, I can't do much more than just scratch the surface. Hopefully, you've gotten the idea by now that a clever Amiga user can find as many uses for *NewZap* as Heloise has for used dental floss. So, make your backup copies and start Zapping. If you find the program to be as indispensable as I think you will, remember to support the author, Dallas J. Hodgson, by sending in your shareware contribution. ▲

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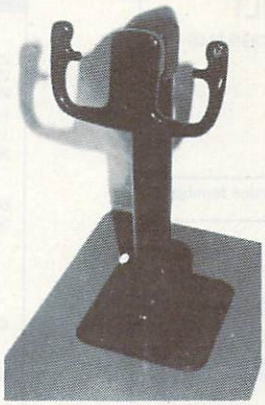

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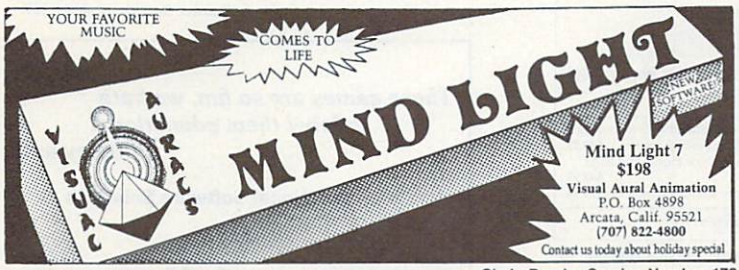

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TAKING **SIDES**

Rhett Anderson vs. Randy Thompson

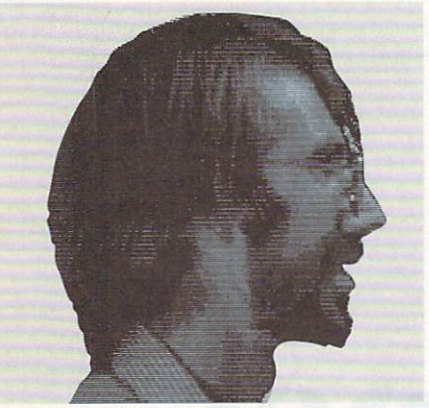
Commodore Amiga Game Machine?

OF COURSE! Commodore is pushing the Amiga onto American consumers in a big way, with actual dollars. This is one of the most surprising developments since the parting of the Red Sea. As a consequence, we need to take a new look at the Amiga and its markets.

Right now there are two kinds of Amigas and three kinds of Amiga buyers: those who do professional work with the Amiga, or who aspire to (these people buy an Amiga with the number 2000 or greater); those who don't need or can't afford the 2000, but who still want the Amiga for its considerable talents (these people buy the 500); and those who want to buy the best game machine around (these people also buy the 500).

Unfortunately, the Amiga 500 makes for an expensive game machine. The people in the third category would be better served with a machine all their own—an Amiga game machine with a cartridge port.

A lower price would help sell the system, but it's the cartridge port that would really make the machine a winner. I bought my Amiga to play and write computer games, but the sluggishness of disk-based commercial games makes me cringe. Am I the only one who tosses games into a corner because they take too long to load, or because of the protracted delays that take place between game screens or during the loading of the high-score board, or because they occupy three or more disks? I doubt it.



Take *Fiendish Freddy* (please), a fabulously fun game—except for the fact that the game is 10-percent joystick twiddling and 90-percent disk driving. I barely had the endurance to review the game. It must be even more frustrating for the developer than it is for me.

Now, as the Amiga moves forward, it also moves away from its strongest arena—the games market. My advice to Commodore: Get rid of the Amiga's game image by giving game players and designers the machine they really want—an Amiga-based game machine. Let the computer be for computerists.

Looking over at Mr. Thompson's side (as we must each issue), we find a continuation of old-style Commodore thinking that never got the Amiga anywhere. Let's have some corporate creativity here. How better to elevate the Amiga's gamy image than by giving the gamesters a different machine? There's no need to call it an Amiga.

Randy, Randy, Randy. Amigas put stand-alone game machines to shame? See how long a kid will play a stand-alone that goes to disk between each wave.

GET REAL! Commodore has enough problems, *without* taking Mr. Anderson's shoot-yourself-in-the-foot advice.

Producing an Amiga-based game machine would only bolster the company's reputation as a toy-computer manufacturer. Who would buy a $1,500 Amiga 2000 when Commodore sells the same basic hardware down at the local Toys "R" Us for the price of a plastic Barbie doll leisure palace? It's exactly this type of cheapo-computer image that Commodore desperately needs to shake.

Besides, marketing a mutant Amiga is financial suicide. Not only would it hurt Commodore's already-sensitive public image, it could potentially cut into the sales of Amiga, 64, and 128 computers, which have already slowed to a sluggish crawl.

It's true, the Amiga was originally conceived of as a game machine. But fortunately for us, it evolved into much, much more. Just think where the Amiga would be today if its only contact with the outside world was through two joystick ports and a cartridge slot. I dare say the term *desktop video* would still conjure images of home movies taken from the higher elevations afforded by standard office furniture.

And even with its game-machine origins, it's not games that made the Amiga thrive. The initial groundswell of support came from programmers, artists, and musicians—creators who use their Amigas to shape ideas into reality. It would be a shame to transform such a creative tool into a $99.95 video babysitter for adolescent arcade junkies.

But image problems and philosophical differences aside, I simply see no reason to create an Amiga-based game machine. I mean, what's the point? Why should Commodore bother to create a sawed-off Amiga game box when current Amigas are already running fast-action entertainment software that puts stand-alone arcade machines to shame? I'd rather enhance the machine than cripple it; even if that enhancement involves the installation of a cartridge port. (Hey, now *there's* an idea.)

Looking over at Mr. Anderson's side, we learn we must take a new look at the Amiga and its markets. For readers unfamiliar with my opponent's usual wimpish prattling, let me translate his weak-minded double-talk: "I bought my Amiga for games, and it's too hard to use." Yes, Mr. Anderson, I know your wife is the only one in your family who knows how to program your VCR, but don't take it out on Commodore. A cartridge port won't solve your problem. ▲

art gallery

Welcome to "Amiga Art Gallery." On these pages, in each and every issue of *Amiga Resource,* you'll find the best Amiga artwork around. The pictures in this issue may also be found on the magazine's accompanying disk.

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Shane Walsh

Oak Forest, IL

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The Painter

Anthony Kāshinn

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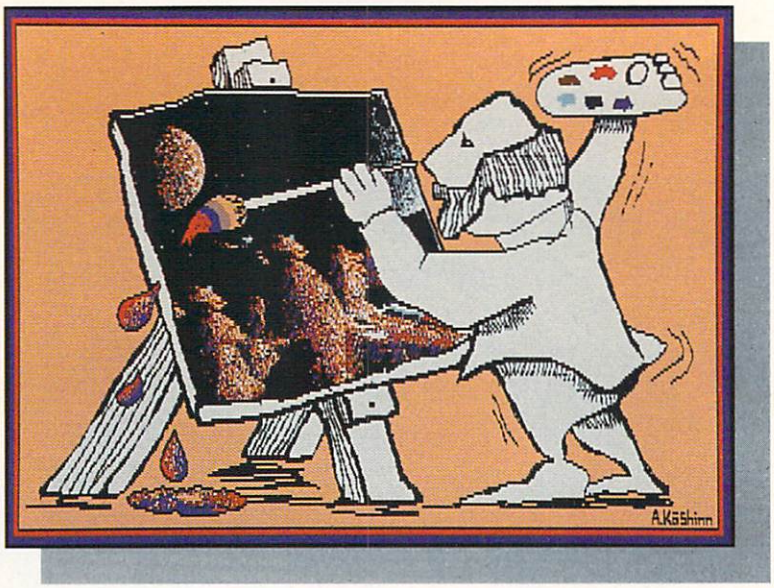

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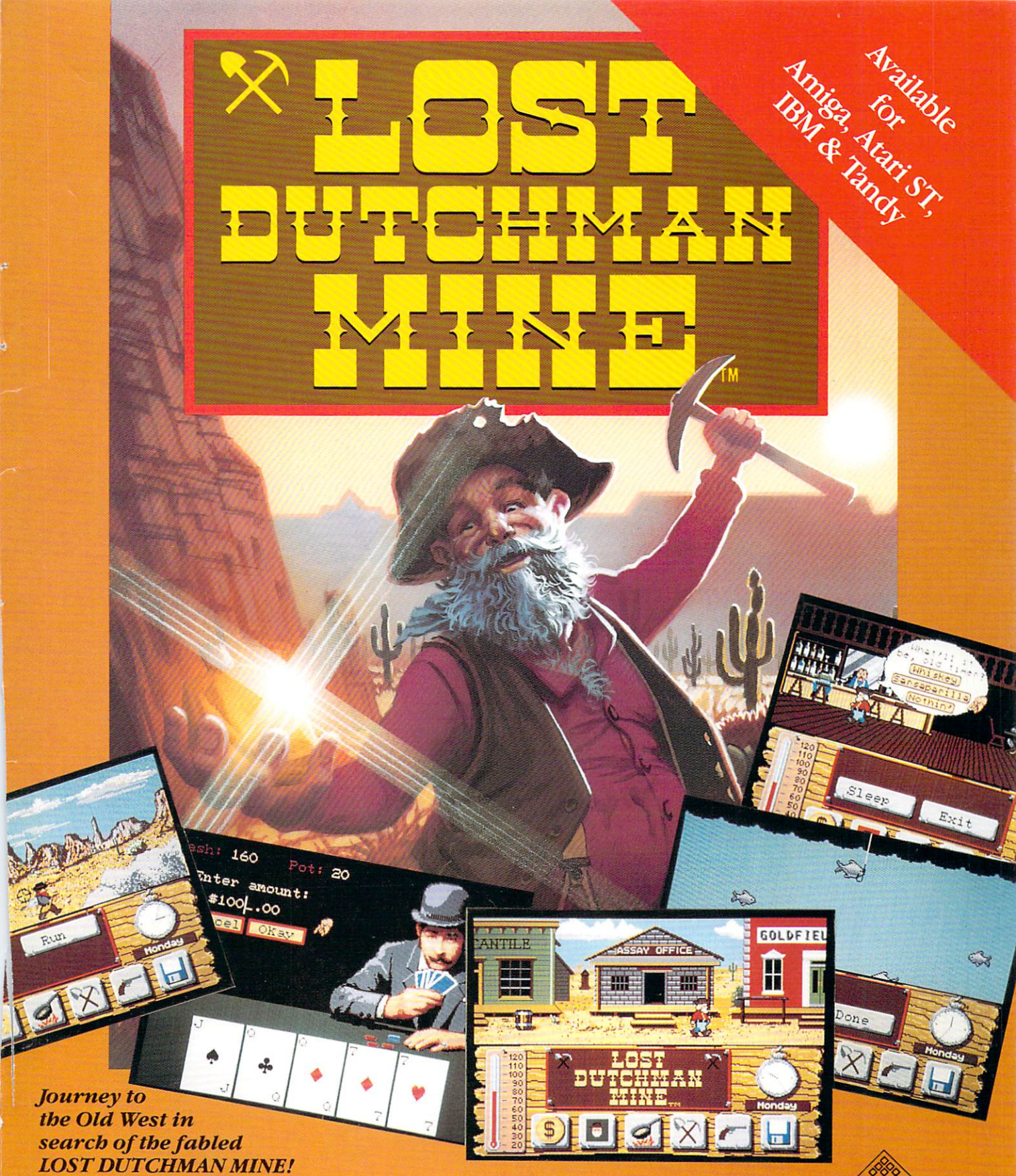

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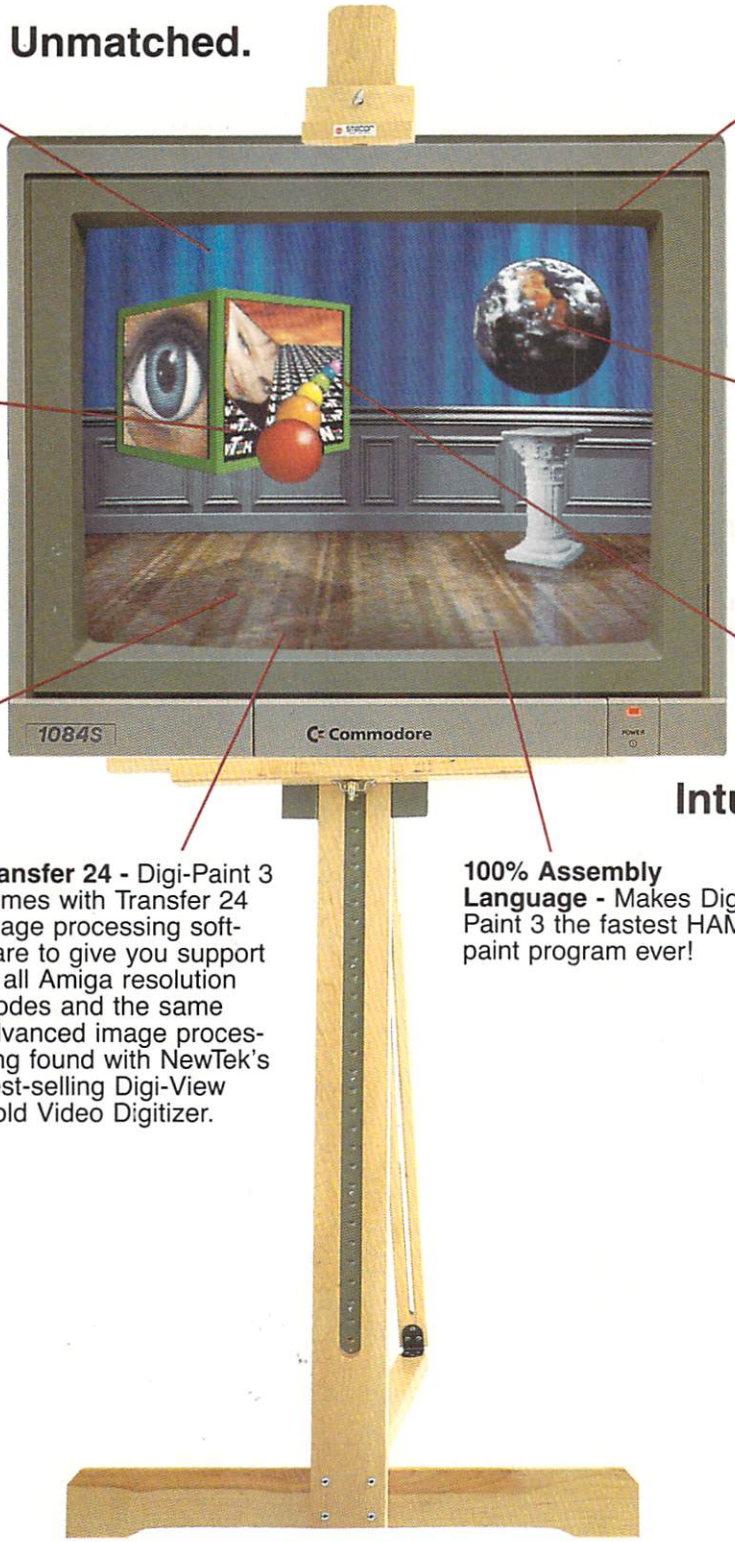

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