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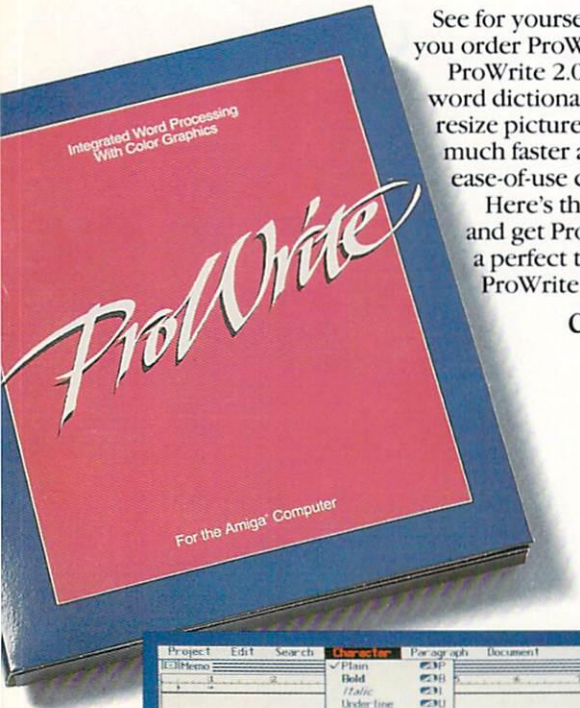
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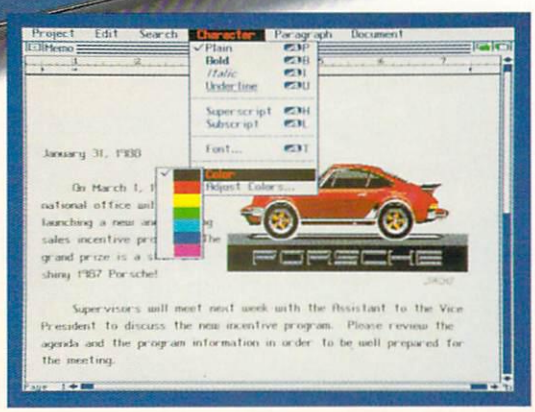
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Ahoy!'s AmigaUser

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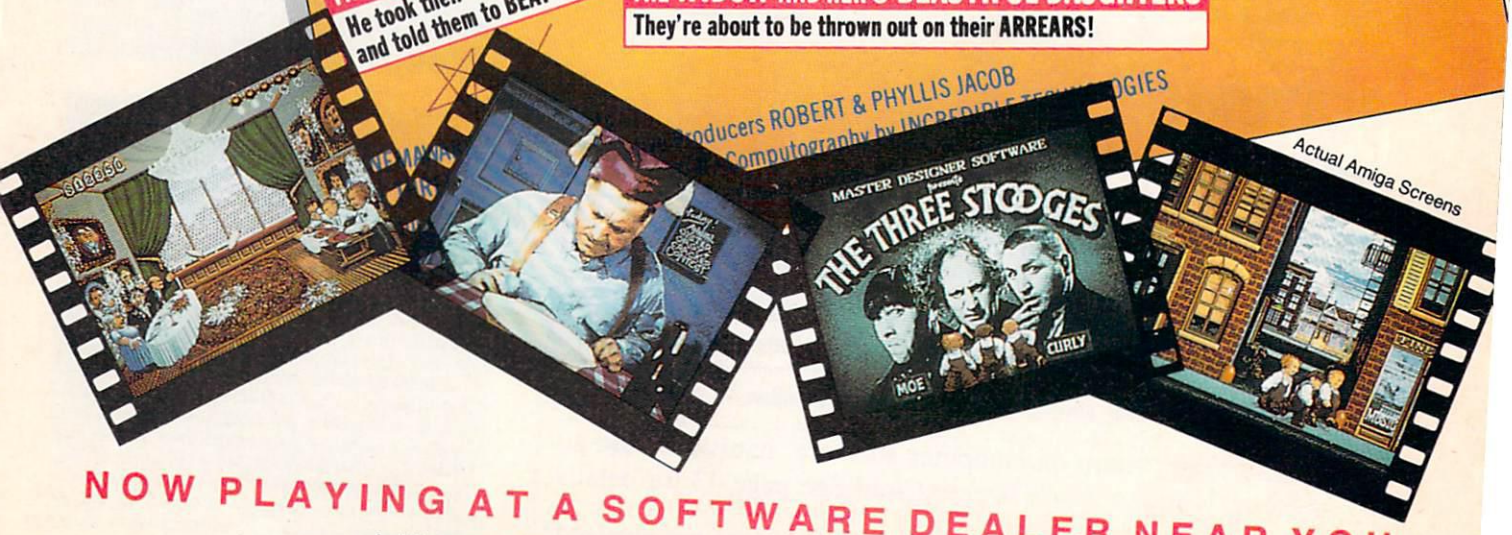
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VIEW FROM THE BRIDGE

Ahoy!'s AmigaUser Expands to 8 Issues a Year!

This is the thanks we get. We knock ourselves out making the premier issue of *Ahoy!'s AmigaUser* the best we can—and what do you do? You flock to the stores in record numbers. You spread the word through users groups and bulletin boards. You make the issue sell so well that you leave us no choice but to double from 4 to 8 issues a year. Don't you think we have lives outside this office? Never mind—we'll just set up cots behind our desks and work 'round the clock, and hope we do such a good job that you force us to go *monthly!*

The funny thing is, we couldn't be happier.

We're thrilled by the reception you've given us, and are especially grateful to those who wrote with their suggestions (see *Flotsam*, page 63, for a sampling). In all seriousness, we hope 8 time a year publication proves just a temporary resting place on the way to monthly status.

Now the confusing part. *Ahoy!'s AmigaUser* will henceforth be published in the following eight months: January, March, May, July, September, October, November, December. But this new schedule becomes effective with the November '88 issue. That means that there'll be no September or October issues in '88. Subscribers, of course, pay only for the issues they receive.

This month's other exciting news is the revamping of the *Ahoy!* Access Club. Founded 2½ years ago to provide its members with discounts on products advertised in *Ahoy!* (our C-64/128 publication), it has been expanded to a full-blown buyers' cooperative that every Amiga owner will want to take advantage of. See page 43 for complete details.

Come to think of it, the contents of the August *Ahoy!'s AmigaUser* are pretty exciting too:

• We didn't decorate this month's cover with birds to please the Audobon Society. We wanted to convey the essence of video digitization: taking something out of the real world, and through the miracle of the computer, improving upon it. It would be hard to improve upon Morton Kevelson's survey of *Video Digitizers and Frame Grabbers*, in which he eyeballs the three available hardware/software packages for your Amiga. (Turn to page 38.)

• If you're thinking about laser-printing your own newsletter, congratulations! You bought the right computer for the job. To select the right software for the job, refer to *Desktop Publishing: The Latest Editions.* Ted Salamone compares three recent releases from a price and performance standpoint. (Turn to page 64.)

• When you want to impress a friend with your Amiga, one of the first things you show off is its speech synthesis capability. After you enter and run Bob Spirko's *Speech Set*, your friends will really be speechless! (Turn to page 30.)

• One of the features in our premier issue singled out for praise by *INFO Magazine* was *Eye on CLI.* The reviewer for that esteemed Commodore journal called it "a fascinating column...that sent me scurrying to the keyboard. There's a lot more to DIR and LIST than I had even dreamed." This month Richard Herring takes you beyond your dreams and *Behind ASSIGN.* (Turn to page 77.)

• Our three month gap between issues has made it difficult to keep up with new releases, but we've packed a sizeable number into this month's *Reviews* and *Entertainment Software* sections. (Turn to pages 52 and 20 respectively). And be sure to read *Scuttlebutt's* prerelease information on all the products we *will* be able to review now that our output of magazines has doubled. (Turn to page 6.)

Mind if we let you explore the rest of this issue by yourselves? We'd like to get a few hours' sleep before we start on the next issue. Please—no more calls between midnight and 4 a.m.!

—David Allikas



Workbench | RAM Tools | WBExtras

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by Peter Dunlap

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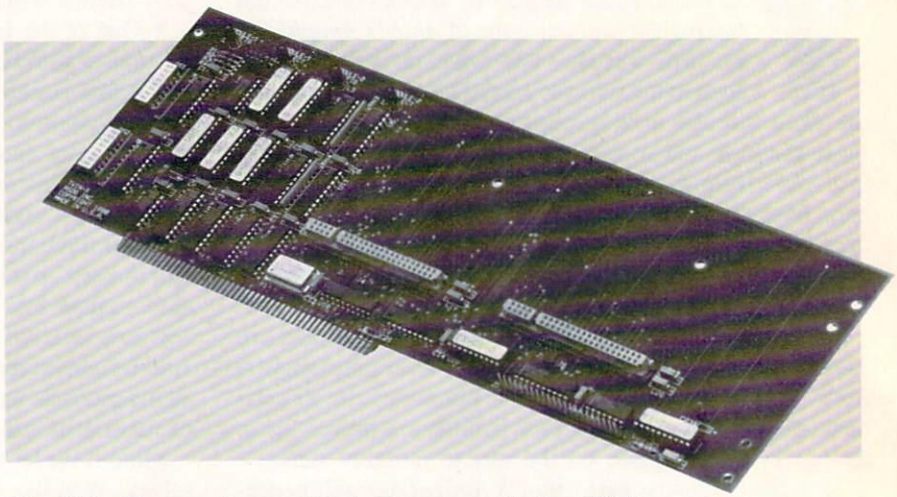
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REAL WORLD INTERFACE

Intended for plugging the Amiga 2000 in to industrial and research applications, ASDG's Twin-X expansion card can host any two standard or one double wide IEEE 959 modules. (These modules are available from numerous vendors, covering every common form of input/output control.) The card provides all the necessary logic for converting Amiga bus cycles into Intel style bus cycles and back again. Also, a standard auto-configuring interface allows modules residing on Twin-X to auto-configure under Kickstart 1.2 or higher.

ASDG has begun development of five IEEE 959 modules of their own, which they promise to offer at prices below the industry standard: dual RS-232, quad RS-232, SCSI, MC68881/MC68882 Floating Point, and IEEE 488 (GIB) modules.

ASDG, Inc., 608-273-6585 (see address list, page 12).



The Twin-X expansion card interfaces your Amiga 2000 with industrial and research applications. *READER SERVICE NO. 235*

600K AMIGAS

Fun facts to know and tell: according to their announcement at May's Amiga Developers' Conference, Commodore has now shipped over 600,000 Amigas worldwide. Additionally, Commodore sets at over 1100 the number of software programs that have been written for the Amiga in all categories.

Commodore, 215-431-9100 (see address list, page 12).

HIGH QUALITY CAD

X-CAD Designer ($599) incorporates a host of sophisticated drawing and editing features for both architectural and mechanical design users. The 2D computer aided design system displays over 1100 lines per second, many times faster than comparably priced programs for the IBM PC/AT. The program also features a multiwindowed software environment and a command structure based on simple English verb-noun-adjective combinations (e.g., "Draw Line Tangential"). Aegis' *Draw Plus* format is supported. The 350 page manual includes a tutorial—and it sounds like you'll need it.

Haitex Resources, 214-241-8030 (see address list, page 12).

VIDEO CONTEST

Aegis Development's second annual Desktop Video Contest, running through September 1, offers prizes ranging from gift certificates to an Amiga 2000 system. Videos must be created using an Amiga with one or more Aegis products, and any other hardware or software. All submissions must be the original work of the entrant, on ½" tape, under five minutes in length, and accompanied by the official form available from Aegis or an Amiga dealer. Entries will be judged in two categories—amateur (not for pay) and professional (for pay)—based on best animation, special effects, computer and software use, artwork, creativity, editing, storyline, sound, and overall quality and ingenuity. You may enter as many times as you wish.

Aegis Development Inc., 213-392-9972 (see address list, page 12).

ADDED DRIVE

The Master-3A external 3½" drive ($189) improves upon Commodore's 1010 with a 25" input cable, permitting users to place the drive in a variety of positions around the Amiga. The Master-3A is also slimmer and smaller than the 1010; and unlike some third party drives, it has an external port for daisy chaining additional drives. A one year parts and labor warranty is included.

Surfside Components, 408-462-9494 (see address list, page 12).

MIDI CONVENTION

MIDI Expo West, the Conference and Exposition of MIDI Music, will occur at Anaheim's Marriott Convention Center on September 10-11. It follows last December's New York show,

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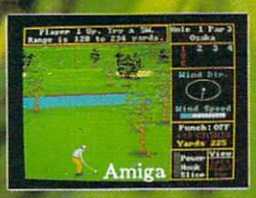
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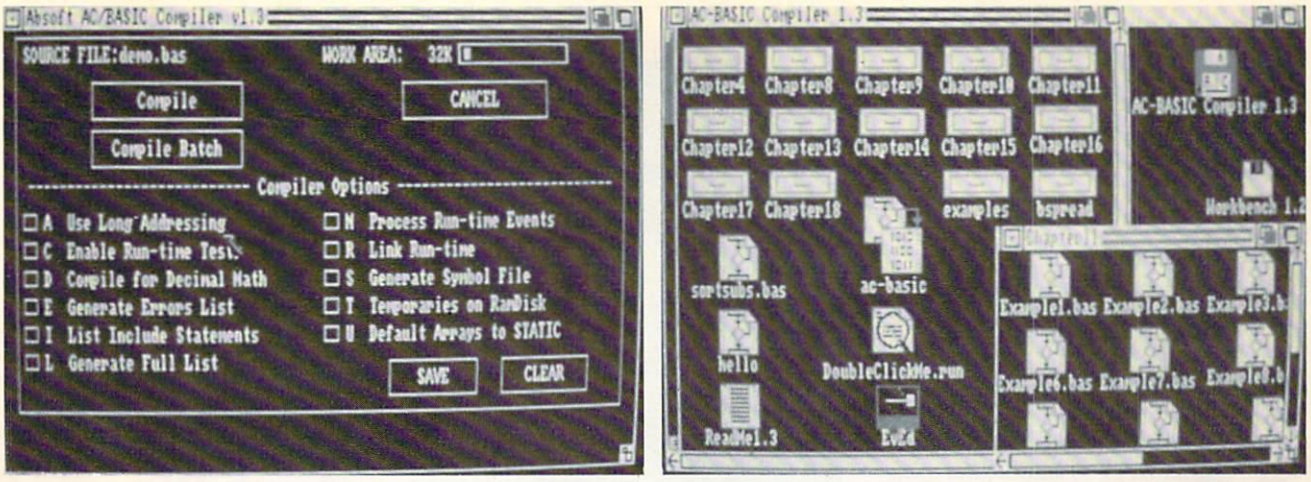
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Version 1.3 of the **AC/BASIC** *compiler offers 100% compatibility with Amiga BASIC statements and functions, plus new examples, some rewritten routines, and fixes to several bugs.* *READER SERVICE NO. 229*

where over 3500 musicians, songwriters, and other MIDI enthusiasts explored the range of digital music instruments, equipment, and services. An educational seminar program will cover MIDI basics, sampling techniques, and other topics.

Expocon Management Associates, 203-259-5734 (see address list, page 12).

GREATER EMULATOR

The 64 Emulator 2 improves upon the emulation capabilities of the previous version, offering additional disk drive commands, an ML monitor, a "freeze" option to transfer protected software to 3½" disks, improved sprites and raster interrupts, and compatibility with all 68010 and some 68020 processors. But the new version's focus is on facilitating the user's transition from the C-64 world to the Amiga, offering such capabilities as the use of C-64 serial printers directly from Amiga software. Software for transferring programs and data from 64 to Amiga disks now runs in native Amiga mode. Also, users with 1581 disks can now read them directly using the Amiga 3½" drives, and users with Amiga 5¼" drives can read 1541/71 format disks. Price is $59.95 with serial interface cable for connecting C-64 peripherals to the Amiga, $39.95 without. Version 1 owners can upgrade for $13, or $10 plus their original disk.

ReadySoft Inc., 416-731-4175 (see address list, page 12).

OXXI OVERSEAS

The *MaxiPlan 500* and *MaxiPlan Plus* spreadsheet programs will be made available in native language versions in France and Germany. Each includes a translated manual, screen text including menus, output of displayed and printed international characters through the Amiga's SetMap command, and support of the PAL display format.

Oxxi Inc., 213-427-1227 (see address list, page 12).

COMPILER UPGRADE

Version 1.3 of Absoft's *AC/BASIC* compiler ($195) includes such improvements as 100% compatibility with Amiga BASIC statements and functions, and fixes to known bugs. Several components of the runtime library were completely rewritten, including random file I/O, fielded string processing, and several floating point arithmetic routines. An included spreadsheet demonstrates how to write application programs that take advantage of the Amiga's ROM routines.

Current owners whose registration cards are received by Absoft before July 16 will be sent the upgrade free; after that, the price to upgrade will be $50. Absoft's new technical support line is open from 9 a.m. to 3 p.m. EST, Monday to Friday.

Absoft, 313-853-0050 (see address list, page 12).

MORE ON OXXI

A-Talk III ($99) adds new features and an increased number of communications protocols to Oxxi's *A-Talk Plus* modem and terminal emulator program. In addition to an expanded Script Language with a Learn Mode for easy automation of communication tasks, the program features a 60-number phone directory, 100% faster Kermit file transfer speed, expanded keypad support for the Amiga 500 and 2000, use of SetMaps for access to foreign character sets, and interlaced and non-interlaced Tektronix 4010/4014 terminal emulations. Single screen menu requester operation allows global settings of all parameters for each host system. New protocols include Ymodem-1K, Ymodem Batch, and Zmodem.

Oxxi Inc., 213-427-1227 (see address list, page 12).

THREE LOAD TOGETHER

The Disc Company's *Critic's Choice Productivity Bundle* ($249.95) combines their own *KindWords* word processor, Oxxi's *MaxiPlan* spreadsheet, and Software Visions' *MicroFiche Filer* database manager into a package that offers a $100 saving over the combined individual prices.

The Disc Company, 313-665-5540 (see address list, page 12).

INVESTOR UPDATE

The Investor's Advantage Version 2.00 ($99.95) incorporates a different color scheme that will not use up ribbons as fast, a more flexible user interface through the elimination of the main menu and the ability to change moving averages on the fly, zoom capability and more plot points for onscreen graphs, and more. Files created with Version 1 will be compatible with Version 2.00. The cost to registered owners is $25 plus $2.40 postage (MI residents add 4%); those who purchased

www.commodore.ca

Version 1 after May 1, 1988 will receive the upgrade free (dated receipt or invoice required).

Software Advantage Consulting Corporation, 313-463-4995 (see address list, page 12).

THE C SCENE

Three books on C programming:

Artificial Intelligence Programming in C offers an introduction to the subject and a library of over 100 programs and functions (also available on disk) illustrating all aspects of AI and enabling programmers to build their own expert system. 260 pages; $17.95 (paperback).

TAB Books Inc. (see address list, page 12).

The Waite Group's *Inside the Amiga with C, Second Edition* explains AmigaDOS (including version 1.2) and pays particular attention to the Amiga 500. Several new programs demonstrate the use of color palettes and registers, and a software toolkit contains a library of C routines for creating and managing screens, windows, input from gadgets, and control graphics. 410 pages; $24.95.

Howard W. Sams, 317-298-5400 (see address list, page 12).

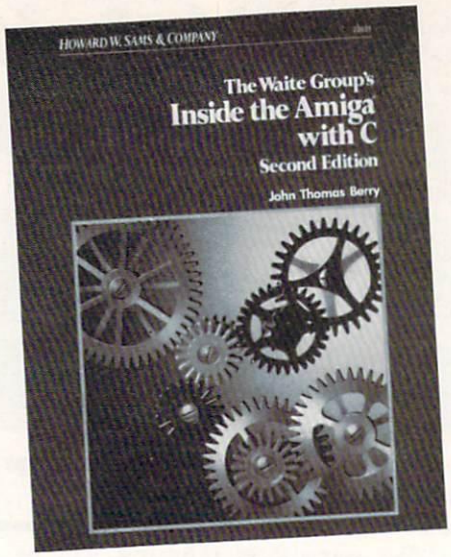
The C Programming Language, Second Edition is based on the draft-proposed ANSI C Standard now being developed to standardize and modernize the language. New features from the ANSI standard are delineated. Also added are a C reference manual and an appendix describing the standard library. 284 pages; $40 clothbound, $28 paperback.

Prentice Hall, 201-592-2000 (see address list, page 12).

TYPING FOR ADULTS

IntelliType ($49.95) uses artificial intelligence and an adventure story to teach adults typing in one month of 45 minute a day sessions. Each new lesson is another cliffhanger episode starring Ted and Laura as they deal with international agents, industrial spies, and a secret formula that could change the world. The program's artificial intelligence monitors 27 different kinds of typing errors in 9 categories, such as dyslexia errors and high keystroke speed variance. The habits of the user are analyzed, and drills to address specific problems are prescribed. Typing is analyzed with bar charts that depict accuracy, speed, and error types.

Electronic Arts, 415-571-7171 (see address list, page 12).



Second edition emphasizes the A500. READER SERVICE NO. 230

MORE PROFESSIONAL

With Version 1.1 ($395), Gold Disk adds to *Professional Page* the ability to make full color and mechanical separations on paper or film, bypassing conventional print shop techniques. Color picture information is maintained with up to 256 colors, or 4096 colors in HAM mode. Precision registration marks, color customizing and correction features, standard and bleed crop marks, and variable line densities and screen angles are all possible. Also, the new version outputs to all dot matrix printers listed in Preferences.

Gold Disk, 416-828-0913 (see address list, page 12).

GAMES

Discovery has lowered the price of *Arkanoid* from $49.95 to $29.95, along with adding 33 new levels (for a total of 66) and an option to slow the action down. A 30-day unconditional money back guarantee will also be offered.

Discovery Software, 301-268-9877 (see address list, page 12).

Black Shadow ($34.95) lets one or two (simultaneous) players traverse a scrolling landscape, attempting to destroy an asteroid by outgunning their enemies and bombing key installations.

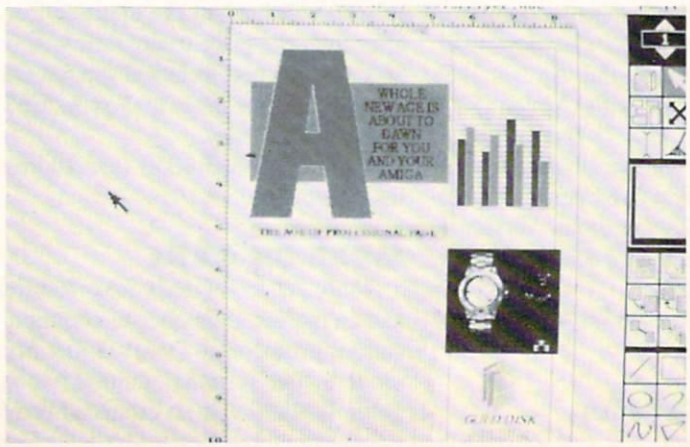
Scorpion, 201-663-0202 (see address list, page 12).

IntraCorp is offering a $10,000 grand prize and 2500 software gift certificates worth up to $200 each in a contest to launch *Murder on the Atlantic* ($39.95). Set in 1938, the game requires software sleuths to explore a luxury liner's 600 salons and staterooms seeking clues, decoding locks, avoiding booby traps, and locating and questioning the 40 suspects. There are over 60 clues, and 16 questions to answer; the contestant who submits the most correct answers will win the grand prize.

IntraCorp Inc., 305-252-9040 (see address list, page 12).

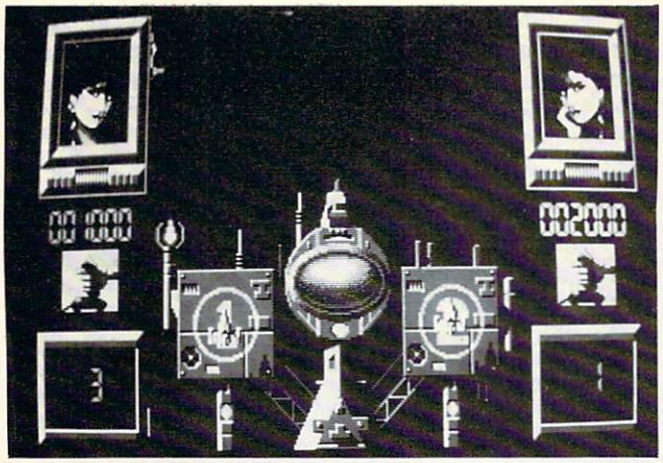
Alternate Reality: The City ($39.95), newly available for the Amiga, places fantasy role-playing fans in The City of Xebec's Demise, where everything from the weather to the law is an obstacle. The first in a series of adventures, this episode allows players to become oriented to the world of Alternate Reality and build their character attributes in order to survive in subsequent sagas.

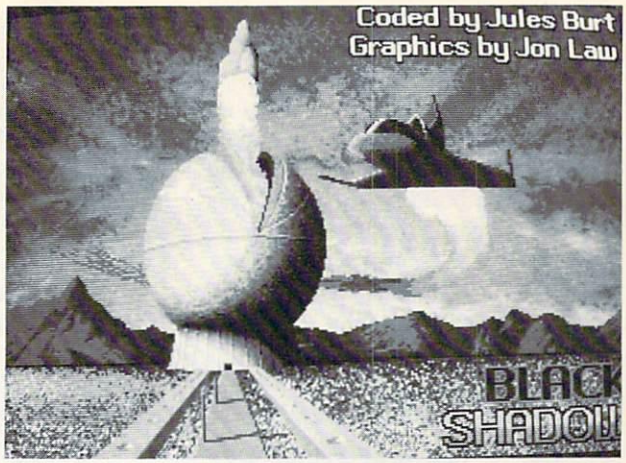
Datasoft/Electronic Arts, 415-571-7171 (see address list, page 12).



Professional Page 1.1 ***adds color separation capabilities (hard to appreciate in our black and white reproduction). READER SERVICE NO. 231***

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Two players can simultaneously traverse the scrolling landscape of **Black Shadow.** *READER SERVICE NO. 232*

New and converted titles from Paragon:

Master Ninja: Shadow Warrior of Death ($34.95) sends the title character into the castle of a Japanese warlord in quest of a stolen magic sword. The castle is of course replete with evil ninjas and Samurais, black magic curses, deadly tigers, and the like.

Twilight's Ransom ($34.95) places you in an even more fearsome environment—the streets of Liberty City, where you must confront hordes of hustlers, con men, drug dealers, and other outcasts in your search for your kidnapped girlfriend. Saving her will require you to unravel a web of danger and intrigue involving the treacherous underworld of international gun running. You'll visit over 175 locations, from the subway system to Liberty Park.

Wizard Wars ($44.95) casts the player as a heroic mage who must defeat dragons, elves, and other creatures to thwart the mad wizard Aldorin.

Available in September, *Guardians of Infinity* ($44.95) sends you, a 21st century scientist, back to 1963 to prevent the assassination of President Kennedy—an event that should not have occurred in the normal course of history, and which is threatening to unravel the time continuum and destroy the Earth. You'll send your five agents to critical cities like Washington, Hyannis Port, and Dallas, trying to convince over 125 historical figures that the President's life is in danger.

Paragon Software, 412-838-1166 (see address list, page 12).

From Titus Software, $39.95 each:

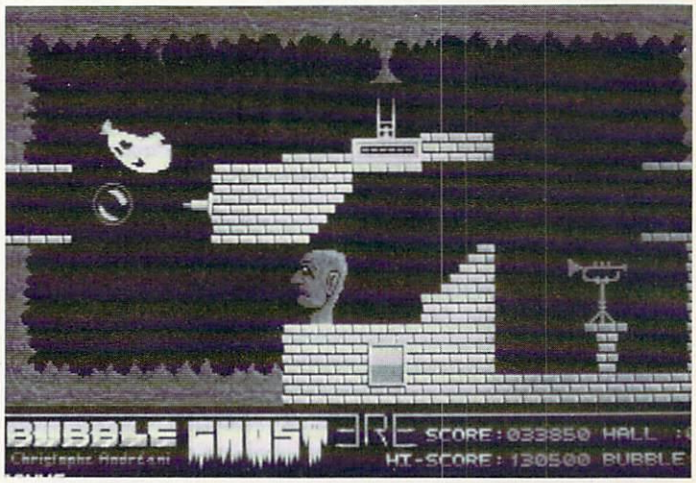
Crazy Cars lets players start with a Mercedes 560 SEC, then progress to a Porsche 911 Turbo, a Lamborghini Countach, and finally a Ferrari GTO en route to winning six challenge races containing 72 skill levels.

Fire and Forget puts you behind the wheel of Thunder Master, the ultimate fighting machine, equipped with a V-16 triple turbo engine and tetra-nuclear propulsion missiles with a fire power of 117 gigawatts per second. You'll need it to save a war-torn world from a full scale nuclear war.

Titus Software, 818-709-3692 (see address list, page 12).

Two from Accolade:

As the *Bubble Ghost* ($34.95), you must blow a bubble through a castle's 35 hazard-filled, increasingly difficult rooms. Disembodied heads, electric fans, and candles are among your obstacles, as well as numerous sharp objects like shears and spikes that can



Bubble Ghost's *bubble pops upon contact with a wall or an object inside one of the castle's rooms. Spikes and the like add to the fun. READER SERVICE NO. 233*



Fire and Forget *features Thunder Master with its tetra-nuclear propulsion missiles and V-16 triple turbo engine. READER SERVICE NO. 234*

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burst your bubble. Secret passageways can save you time and help you avoid some of the more difficult levels.

Pinball Wizard ($39.95) features four different pinball simulations, each with backboard, flippers, tilt sensors, and the like. The building set lets players position targets, flippers, bumpers, spinners, and discs anywhere on the table and adjust the elasticity of the rebounds, slope of the table, sensitivity of the sensors, and speed of the ball. The table can be designed and painted in any way desired.

Accolade, Inc., 408-985-1700 (see address list, this page).

Electronic Arts has made a minority investment in Strategic Simulations, Inc., acquiring the rights to distribute SSI software in the United States and Canada. The first EA/SSI release for the Amiga is *Heroes of the Lance* ($39.95), a single-player action game based on the "Dragons of Despair" DragonLance game module. There are eight actual Heroes of the Lance characters for the player to control.

Electronic Arts, 415-571-7171 (see address list, this page).

Viacom Enterprises has licensed First Row Software Publishing to produce two games for the Amiga at $39.95 each. *Rod Serling's The Twilight Zone*, an interactive game for one player, was scheduled at press time for June release; and *Jackie Gleason's The Honeymooners*, for up to four players, will be available in September.

Viacom Enterprises, 212-575-5175 (see address list, this page).

The *S.P.O.C. Entertainment Package* ($25.00) contains over 30 games, demos, educational programs, and puzzles. A sample disk is available for $5.00.

S.P.O.C. (see address list, this page).



EA's Trip Hawkins (left) and SSI's Joel Billings have affiliated and are ready to declare war on the competition.
READER SERVICE NO. 236

FLIGHT BOOK

Gunship: 82 Challenging New Adventures consists of aviation scenarios which the Amiga user can recreate with MicroProse's *Gunship* or Cosmi's *Super Huey* helicopter simulators (as well as *ThunderChopper* and *Helicopter Simulator*). 208 pages; $12.95.

TAB Books (see address list, this page).

Companies Mentioned in *Scuttlebutt*

Contact manufacturers directly for more information.

ASDG, Inc.
925 Stewart Street
Madison, WI 53713
Phone: 608-273-6585

Absoft
2781 Bond Street
Auburn Hills, MI 48057
Phone: 313-853-0050

Accolade
550 W. Winchester Blvd., Suite 200
San Jose, CA 95128
Phone: 408-985-1700

Aegis Development Inc.
2115 Pico Blvd.
Santa Monica, CA 90405
Phone: 213-392-9972

AlohaFonts
P.O. Box 2661
Fair Oaks, CA 95628-9661

Commodore
1200 Wilson Drive
West Chester, PA 19380
Phone: 215-431-9100

Computerfest
P.O. Box 28
North Aurora, IL 60542
Phone: 312-897-5788

Datasoft
c/o Electronic Arts

Electronic Arts
1820 Gateway Drive
San Mateo, CA 94404
Phone: 415-571-7171

Discovery Software
163 Conduit Street
Annapolis, MD 21401
Phone: 301-268-9877

Expocon Management Associates, Inc.
3695 Post Road
Southport, CT 06490
Phone: 203-259-5734

Gold Disk
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Mississauga, Ontario
Canada L5M 2C2
Phone: 416-828-0913

Haitex Resources
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Carrollton, TX 75006
Phone: 214-241-8030

Howard W. Sams & Co.
4300 West 62nd Street
Indianapolis, IN 46268
Phone: 317-298-5400

InterActive Softworks
2521 South Vista Way
—Suite 254
Carlsbad, CA 92008
Phone: 619-434-5327

IntraCorp Inc.
14160 SW 139th Court
Miami, FL 33186
Phone: 305-252-9040

Ketek
P.O. Box 203
Oakdale, IA 52319
Phone: 319-338-7123

New Horizons Software
P.O. Box 43167
Austin, TX 78745
Phone: 512-328-6650

Oxxi Inc.
3428 Falcon Avenue
Long Beach, CA 90807
Phone: 213-427-1227

Paragon Software
600 Rugh Street—Suite A
Greensburg, PA 15601
Phone: 412-838-1166

Prentice Hall
Prentice Hall Building
Englewood Cliffs,
NJ 07632
Phone: 201-592-2000

ReadySoft Inc.
P.O. Box 1222
Lewiston, NY 14092
Phone: 416-731-4175

S.P.O.C.
Box 299
Kiowa, OK 74553

Scorpion
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Lake Hopatcong,
NJ 07849
Phone: 201-663-0202

Software Advantage Consulting Corporation
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Mt. Clements, MI 48043
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Surfside Components
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Capitola, CA 95010
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TAB Books Inc.
Blue Ridge Summit, PA
17294-0580

The Disc Company
3135 South State Street
Ann Arbor, MI 48108
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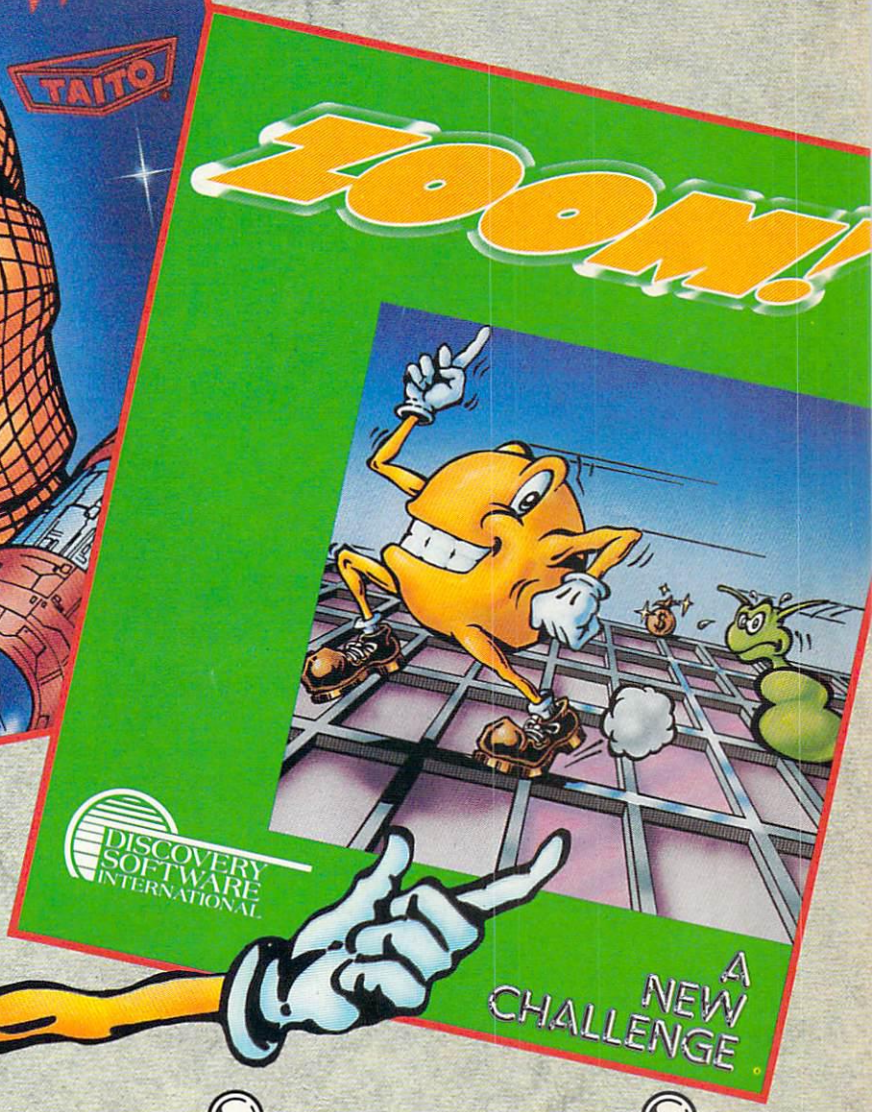
Titus Software
20432 Corisco Street
Chatsworth, CA 91311
Phone: 818-709-3692

Viacom Enterprises
1211 Ave. of the Americas
New York, NY 10036
Phone: 212-575-5175

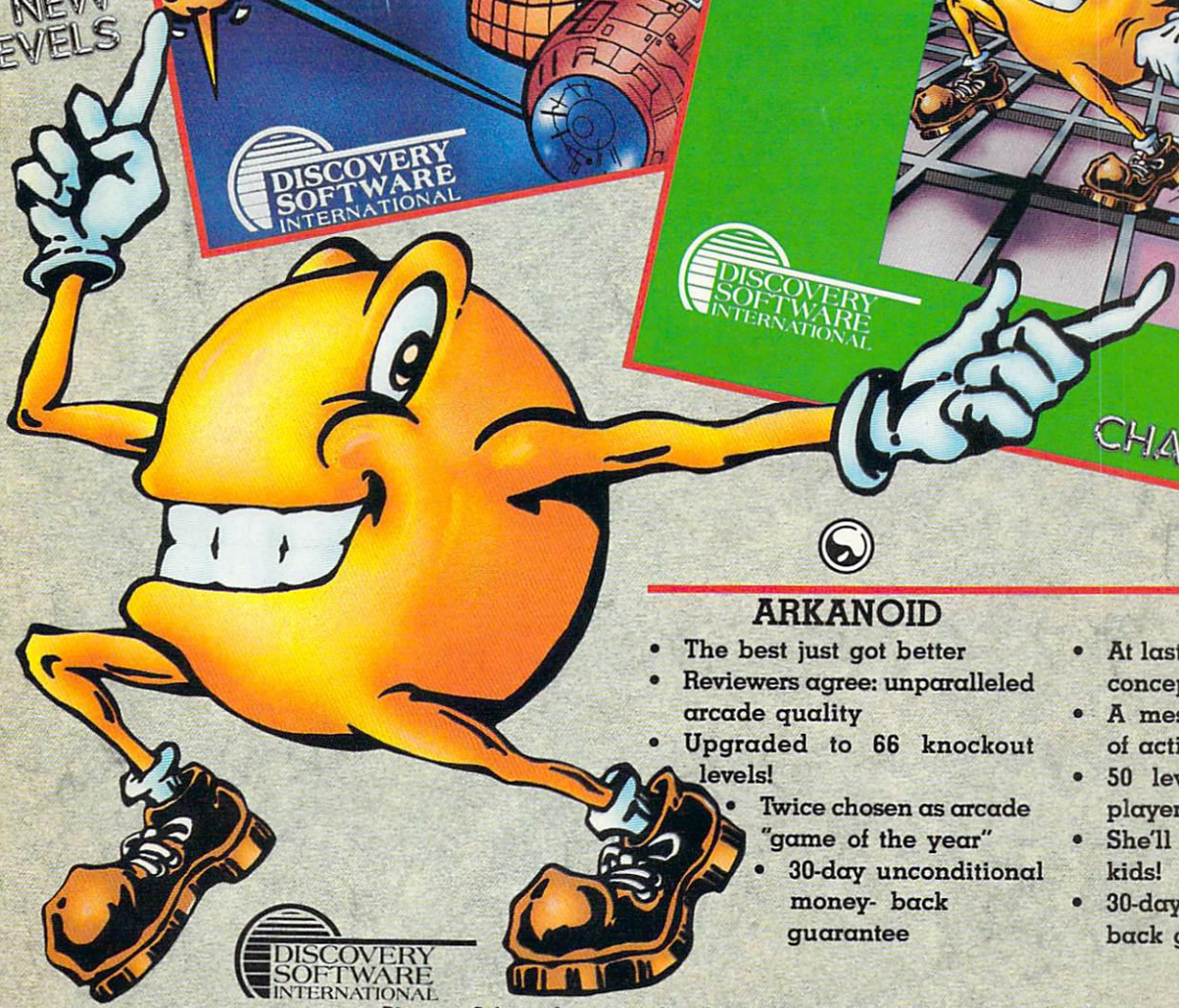
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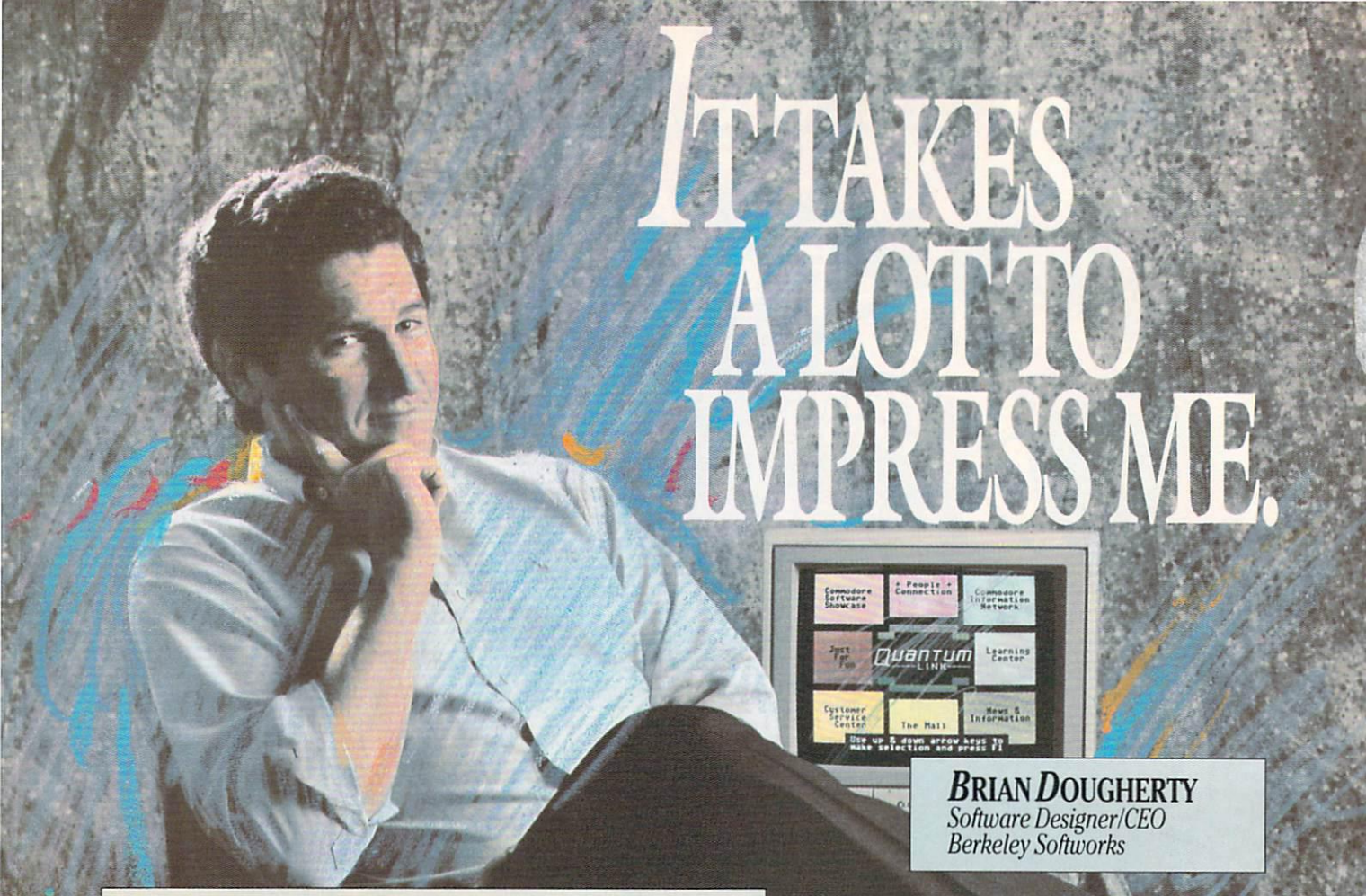
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Howard W. Sams & Company, 317-298-5400 (see address list, page 12).

PROWRITE POSTSCRIPT

ProScript ($49.95) allows users of the *ProWrite* word processor to translate files into PostScript format, the industry standard for producing high quality printed output. Translated files can be sent directly to a PostScript-compatible printer or saved to a file for later printing. If the document uses PostScript fonts (included with *ProScript)*, the printer will use the actual fonts resident in the printer for the best quality results. If a non-PostScript font is used, a bit map image of the font will be downloaded to the printer. All color graphics in the *ProWrite* document are printed as well, with the colors being first converted into shades of gray. The program also offers the option to reduce or enlarge the printout, choose paper size, print only odd or even pages, and control the number of gray shades used for graphics. Mail merged documents can also be printed.

New Horizons Software, Inc., 512-328-6650 (see address list, page 12).

PRESENTATION PROGRAM

DeluxeProductions ($199.95) makes it possible to combine hi-res graphics and computer animation to create video presentations for business and educational uses. The program is based on a storyboard design concept, allowing directors to create up to 12 scenes per production, with each scene containing up to 5 clips and each clip containing one animated object. Many features required by video professionals are provided, such as the ability to work in overscan and chain productions together to create long or looped presentations. Also included are pause, forward, and backward functions, double buffered animation capability, a palette of 4096 colors, and a selection of over 40 wipes (i.e., fades, pops, spirals, and scatters).

Electronic Arts, 415-571-7171 (see address list, page 12).

KETEK SUPPORT

Computer accessories from Ketek, makers of the Command Center line of system enclosures:

The Sound Trap ($49.95) encloses almost any 80 column printer with sound-absorbing foam and wood to reduce noise by up to 90%. Included are an acrylic lid and a slide-out shelf for catching printout.

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The Tilt/Swivel Monitor Stand ($14.95) lets you turn your monitor to the desired angle, with cushioned pads to hold the monitor securely in place.

Ketek, 319-338-7123 (see address list, page 12).

ILLINOIS SHOW

The third annual Chicagoland Commodore Computer Fest is scheduled for August 28 at the Exposition Center at the Kane County Fairgrounds in St. Charles, IL. National speakers and 64, 128, and Amiga vendors will be featured. Admission is $5.00.

Computerfest, 312-897-5788 (see address list, page 12).

Continued on page 82

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AMIGA TOOLBOX

Compiled by Michael R. Davila

Contributors to *Amiga Toolbox* will be compensated at competitive industry rates for their short routines and programming/hardware hints. Please include the documentation, program, and source code on a 3½" disk, along with a printout. If programming in any language other than Amiga BASIC, be sure to specify the compiler used and the manufacturer's name. Include a SASE. Send to *Amiga Toolbox*, c/o *Ahoy!'s AmigaUser*, Ion International Inc., 45 West 34th Street—Suite 500, New York, NY 10001.

GO BORDERLESS

Amiga BASIC gives programmers easy control of the computer's powerful window options. One option easily available in C and assembler, but off limits in BASIC, is the borderless window. Full screen, borderless windows are handy in drawing or 80-column, 25-line text programs.

Here's a subprogram you can use in your own applications. *MakeBorderlessWindow* uses the window number, the corner coordinates, and the screen number to open a smart-refresh, borderless window. A short demo program opens a window the full size of the Workbench screen and numbers the rows and columns.

The subprogram uses the MoveLayer and SizeLayer functions from the Layers library to modify a normal Amiga BASIC smart-refresh window. You'll need to have the file "layers.bmap" in the "libs" directory on your Workbench disk. You can get "layers.bmap" in the public domain, or create it yourself with the ConvertFD program from the Extras disk that came with your computer.

Note that we open and close the Layers library inside the routine. This leaves you free to open the maximum of five libraries in your program, so call *MakeBorderlessWindow* before you open any other libraries.

One quirk to be aware of: the CLS statement does not clear the entire window. You can work around this by using the LINE command to draw a rectangle the size of the full window in the desired color.

At the end of your program use the CLOSE or WINDOW statements to close or redefine any windows you've opened.

—Marc Welton
Des Moines, IA

```
DEFINT a-z
MakeBorderlessWindow 2, 0, 0, 639, 199, -1

FOR i = 1 TO 8
  PRINT "1234567890";
NEXT
FOR i = 1 TO 25
  LOCATE i, 1: PRINT MID$(STR$(i), 2);
NEXT
LOCATE 12, 30: PRINT "Click mouse to exit"
WHILE MOUSE(0) = 0: SLEEP: WEND
WINDOW CLOSE 2

'==================== MakeBorderlessWindow ====================
'
'Should be called before opening any other libraries.
'Requires "layers.bmap" to be in current or df0:libs directory
'
'==============================================================
'
SUB MakeBorderlessWindow(WindowNum,x1,y1,x2,y2,ScreenNum)STATIC
  LIBRARY "layers.library"
  x2 = x2 - 8: y2 = y2 - 13
  WINDOW WindowNum,,(x1, y1)-(x2, y2), 16, ScreenNum
  bWindow&     = WINDOW(7)
  BorderTop    = PEEK(bWindow& + 55)
  Layer&       = PEEKL(WINDOW(8))
  LayerInfo&   = PEEKL(Layer& + 68)

  ' Move top layer corners over border layer
  MoveLayer& LayerInfo&, Layer&, -4, -BorderTop
  SizeLayer& LayerInfo&, Layer&, 8, BorderTop + 2

  ' Tidy up GimmeZeroZero height, width and borders
  POKEW bWindow& + 112, PEEKW(bWindow& + 8)
  POKEW bWindow& + 114, PEEKW(bWindow& + 10)
  POKE bWindow& + 54, 0: POKE bWindow& + 55, 0
  POKE bWindow& + 56, 0: POKE bWindow& + 57, 0
  LIBRARY CLOSE
END SUB
```

GRAPHIC ANTICS

The Amiga's amazing graphics capabilities are like those of no other personal computer. Animation can be handled with great ease due to the high speed of the blitter. Amiga BASIC has been equipped to accommodate this graphic powerhouse. Type in the following routines for a demonstration.

```
SCREEN 1,320,200,1,1
WINDOW 2,"Hypnotic Circles",(0,0)-(311,180),8,1
back:
FOR x = 30 TO 1 STEP -1
    CIRCLE (160,100),2*x
NEXT

FOR x = 1 TO 30
    CIRCLE (160,100),2*x,0
    NEXT
GOTO back
```

This program demonstrates the use of the CIRCLE command. First a window will open, and then inside a series of enlarging and shrinking circles will appear and disappear. This will produce a hypnotic effect. For the next program you will need a joystick plugged into Port 2.

```
'color draw
x=250 : y=50
WHILE 1
 LINE (250,100)-(x,y),INT(RND*4)
' LINE (250,100)-(x,y),0
 x=x+STICK(2)
 y=y+STICK(3)
oldx = x
oldy = y
```

Continued on page 72

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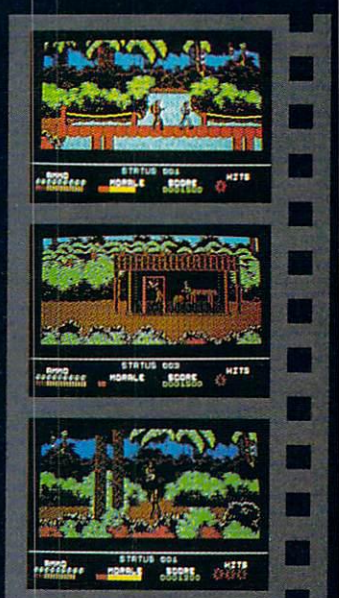
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THE THREE STOOGES

Cinemaware
Amiga with 512K
Two disks; $49.95

Larry, Moe, and Curly live again through the magic of the home computer! This electronic board game, with arcade sequences drawn from their movies, is a sheer delight for anyone who has ever laughed at these three sovereigns of slapstick comedy.

The game's plot is pure, undiluted stooge. Fleecem, of Skin and Flint Finance Corp., will tear down the town's orphanage unless Ma comes up with all the money she owes in 30 days. The boys generously offer to help the old woman scrape up the dough. Their resolve to help is strengthened when her three lovely daughters promise to marry them if they pay the debt, repair the orphanage, and accumulate a little extra cash for future emergencies.

The boys raise money by walking the one-way streets of Stoogeville and finding various odd forms of employment. Naturally, each job involves the zanies in an action contest.

The movement system is quite novel. A row of six icons appears above Moe's head, each representing one of the next six squares along the street. Moe's hand automatically moves from square to square until the player pushes the button to stop it or the two-second time limit expires. The Stooges automatically move to the spot that is indicated by the hand. The program transfers the player to the designated spot, where the participant follows the onscreen directions.

The Slapping Game, in which Moe attempts to pound sense into his cohorts, can slow down the movement of the hand to make choosing easier. This enables players to orchestrate movement to specific types of squares. It's handy for avoiding games which the computerist finds especially hard.

The mousetraps, on the other hand, are penalty squares. If a trap snaps on the Boss Stooge's hand, the boys stay where they are and lose a precious day. If the pesky traps take all of Moe's fingers, the game is over.

Trivia gives Three Stooges scholars the chance to parade their knowledge of the team's career, players find cash on "Money" squares, "Chance" introduces unexpected consequences, and the Evil Banker dishes out penalties which start at losing a day.

There are four money-making games:

Pie Fight tests the player's ability to turn a fancy dinner into a shambles. The joystick allows each of the Stooges to duck and throw pies individually. The game proceeds, with the player earning money for hitting guests, until they have taken five "hits." If the Stooges throw all of the pies before this happens, it doubles all money earned.



Lengthy noninteractive sequences give* The Three Stooges *an "at the movies" feel. The fine graphics manage to capture the essence of the classic slapstick shorts. READER SERVICE NO. 201





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Jet: ***combat-heavy flight simulator. READER SERVICE NO. 202***

Hospital is a high-speed driving contest. The player steers three midget race cars, lined up like a train, through crowded hallways to the operating room before time expires. Collecting items

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dropped off the nurse's cart is worth $5-$15.

Curly stars in the Cracker-Eating Contest, drawn from the 1941 short "Dutiful But Dumb." The idea is to move the spoon over a cracker and scoop it up when it rises to the top of the stew. The player receives $10 per cracker, $50 per bowl.

Boxing takes place entirely outside the ring. Moe enters Curly in a match, but the big goof only fights hard when he hears "Pop Goes the Weasel." Larry has to race across town, jumping over and running around objects, and return with the violin before the end of the bout.

Although the games become progressively more difficult as the player walks through Stoogeville, they are entertaining rather than challenging. This is appropriate to Cinemaware's design philosophy, which stresses the interactive experience more than mental and physical testing.

The graphics capture the essence of The Three Stooges. Relatively lengthy non-interactive sequences create the proper "at the movies" feel. The illustration and animation during the actual games is also wonderful. This is the type of program which people show to their friends when they brag about the power of the Amiga.

An excellent article about the comedy team highlights the documentation by Bill Kunkel. Those who want to do well at "Trivia" should read the piece very carefully. The tiny rules section is sufficient in light of their simplicity.

The Three Stooges is clearly the best game Cinemaware has produced so far. It has the most enjoyable games, though improvement in this area is still possible, and the best audiovisual effects. Visit Stoogeville at your earliest opportunity.

Cinemaware, 4165 Thousand Oaks Blvd., Westlake Village, CA 91326 (phone: 805-495-6515). ***—Arnie Katz***

JET
SubLOGIC
Amiga with 512K
Disk; $49.95

Jet is the logical next step to follow SubLOGIC's classic best seller, *Flight Simulator II.* The earlier program put the user in control of a Cessna 182 or a Gates Learjet, both small, private aircraft. *Jet,* on the other hand, places the computer pilot in the cockpit of either an F-16 Fighting Falcon or a carrier-based F-18 Hornet, both highly specialized, state of the art combat jets.

The World War I dogfight scenario in *FS II* was an attractive bonus; the real thrill was mastering and experiencing the simple joys of artificial flight. Combat jets, on the other hand, are not built for Sunday sightseeing, though the views are definitely spectacular enough to merit the occasional joyride.

Jet is concerned primarily with air-to-air and air-to-ground combat, which it provides in abundance. F-16 and F-18 pilots are offered two types of air-to-air missiles (AIM-9 Sidewinder and AIM-7 Sparrow), two varieties of air-to-ground, or target strike armament (AGM-65 Maverick and MK-82 Smart Bomb), and an M61 Machine Gun. These weapons are selected and loaded onboard the user's jet fighter according to weight.

Jet's variety of flight options include computer demo, free flight, dogfight, target strike, and combination dogfight/target strike modes. There's even a multiplayer dogfight scenario for head-to-head combat on a pair of nearby computers (using SubLOGIC's own serial cables, which can be ordered separately) or via modem.

Jet isn't all combat, however. It's also a first-rate flight simulator that realistically recreates the experience of jet flight. Ironically, users who were intimidated by the complexity of *FS II* will be pleasantly surprised by how easily these craft fly. *Jet,* like the real planes it simulates, has all manner of computerized instruments and targeting aids, and all of these make for easier control.

The keyboard is a labyrinth of commands, but use of the mouse or a joystick transfers most of the details of flight control away from the keys. This frees it for weapon selection and firing, and alternate visual displays.

The playscreen features a primary visual display (with optional secondary and map display available) and the HUD (Heads Up Display). The HUD borders the primary or "3-D" display on all four sides and includes an airspeed indicator, frame load (the force exerted on the aircraft perpendicular to the wing surface), fuel, thrust, throttle, altimeter, clock, compass, and ADF (Automatic Direction Finder) and DME (Distance Measuring Equipment) gauges. The player's score is also there. This seems somewhat at odds with the realism engendered by the rest of this simulation, and would have been more welcome at the conclusion of a flight.

Weapons are selected by simply toggling to the desired type of ordnance and firing.

Optional HUD items include the range circle, a targeting device, and the attitude indicator which shows the jet's orientation in relation to the ground. The attitude indicator can be toggled on/off and consists of a series of parallel onscreen lines tilted at an angle corresponding to the jet's current banking status. This may cause some initial problems for computer pilots used to the more conventional type of attitude indicator, which is framed by a circle and appears as part of the HUD rather than being superimposed over the primary display.

Despite its emphasis on combat, *Jet* also delights the visual senses with its spectacular scenery. The Amiga's powerful graphics capabilities enabled creators Chris Green and SubLOGIC founder Bruce Artwick to produce a continuous, fully scrolling landscape dominated by eye-popping geographical and man made landmarks. Mountains, rivers, forests, power plants, a shipyard, and an enemy base are among the standout visuals included on this basic program. But that's only the beginning of the world tour, since *Jet* also interferes with existing *FS II Scenery Disks.*

Jet provides users with a wide variety of visual perspectives, including multidirectional internal and external views. The program offers eight different points of view from within the jet as well as an outside look at the player's aircraft from either the airbase tower or a second, "spotter" plane.

The only disappointment is the lack of kinetic combat graphics. Crashes and air explosions are disappointingly perfunctory. We never see a wounded aircraft screaming to earth, for example, flames gushing from its engine. Instead, all fatally damaged aircraft simply disappear.

Still, any complaints here are strict-

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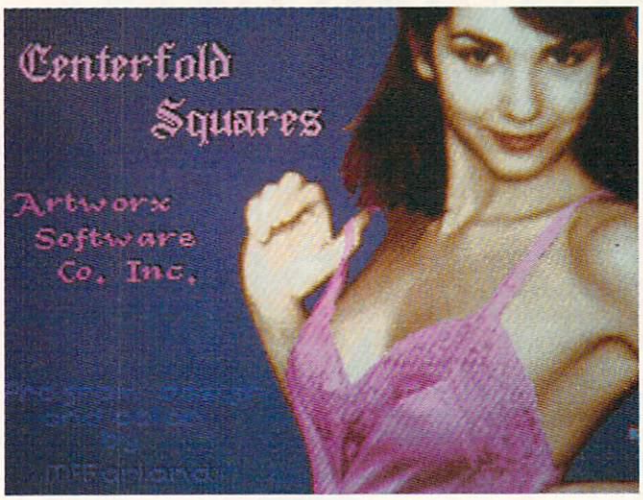
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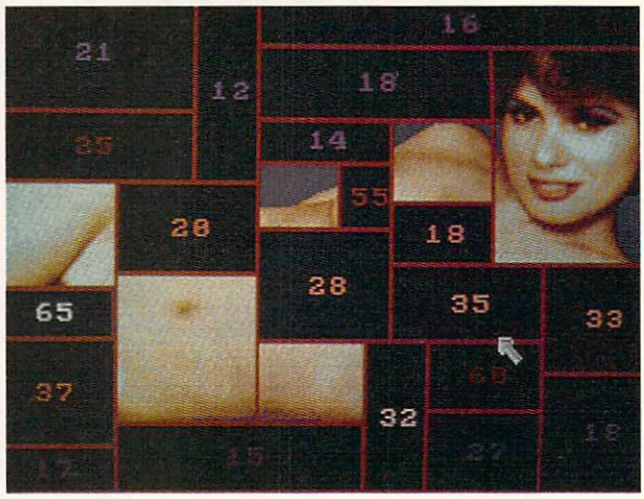
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Bad taste and bad graphics, twin hobgoblins of "adult" computer games, are avoided by **Centerfold Squares.** *A player gets to view the uncensored model by winning a variation of* **Reversi.** *READER SERVICE NO. 198*

ly small-time when compared to the overall impact of this program. *Jet* is the most spectacular air combat simulator ever produced for the Amiga, and seems likely to hold its position for quite some time.

SubLOGIC, 713 Edgebrook Dr., Champaign, IL 61820 (phone: 217-359-8482). *—Bill Kunkel*

CENTERFOLD SQUARES

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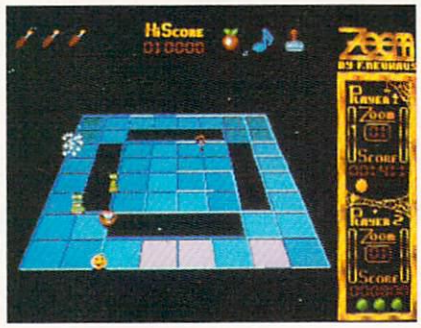
Those who answer "yes" to all three questions have a singular treat in store when they boot *Centerfold Squares*. This solitaire contest for mature computerists is a spicy blend of serious strategizing and lighthearted titillation.

Artworx's *Strip Poker*, published in the early 1980s, remains the most popular "adult" program, but the company's newest effort may usurp that distinction before too long. Not only is the actual game much more interesting, but the graphics in *Centerfold Squares* are a quantum leap ahead of any competing product.

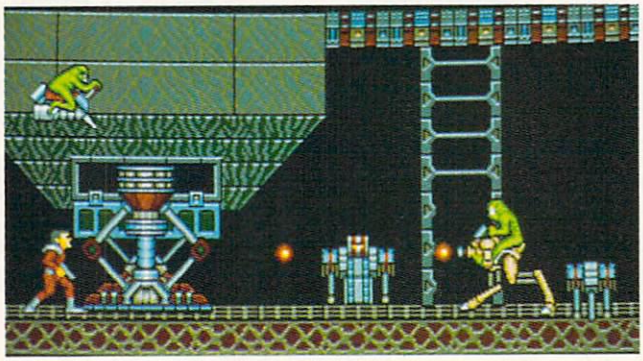
Bad taste and bad graphics are the twin hobgoblins of "adult" computer games. *Centerfold Squares* easily avoids both menaces. The drawings, though undeniably explicit, are certainly not gross. The subject matter is similar to what readers of *Playboy* and other leading men's magazines see each month.

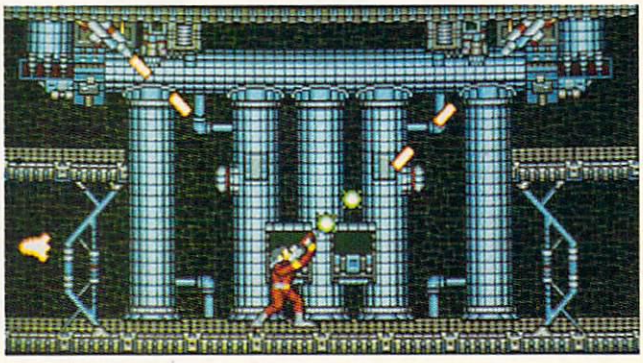
Offensive content, exemplified by past affronts to common decency like *Custer's Revenge*, has proven easier to fix than poor drawing. The simple illustrations found in older adult games inspire little more than smirking laughter. Naming a vaguely humanoid shape "Marilyn Monroe" doesn't really make





ZOOM! *adds zip to a worn concept. READER SERVICE NO. 199*





The obstacles encountered in **Obliterator's** *100+ separate locations demand split-second reactions. Unfortunately, the program's use of icons will slow you down. READER SERVICE NO. 200*

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it any sexier to the typical person.

Few computerists will fail to respond to the visual appeal of the ten female and two male models depicted in *Centerfold Squares*. A painstaking digitization process, enhanced by the Amiga's outstanding graphics resolution, produces pictures which are sure to score a bull's-eye with any girl- or boy-watcher. The luminous skin tones, expressive faces, and physical beauty of the models is unimpeachable.

A player earns the right to study these beauties in complete, uncensored splendor by playing a lively variation of Reversi. Winning a game removes one of the opaque blocks over the model's picture and reveals a portion of the body hidden beneath. When the model wins a round, however, one of those pesky blocks returns to cloak a portion of his or her anatomy. When the Amiga owner wins enough rounds to clear away all the blocks, the nude pin-up is fully revealed.

How It Plays

The model selection screen shows the names of all the models on the Game Disk. The program categorizes the 12 models on the roster according to their playing skill: below average, average, and above average. The human player clicks on a name to select a model and confirms the choice with another click on a small picture of the woman or man.

Initially, blocks cover the whole Centerfold Screen. Each has a two-digit number which represents the score needed to remove it. Six vanish immediately to give the computerist a peek at delights to come, but further vistas must be earned before they can be appreciated. One of the remaining blocks flashes, which indicates that it is the prize in the next round of the game.

A 10 x 10 grid serves as the playfield for Double-Up, as designer D. McFarland calls his version of the disk-flipping contest. As in standard Reversi, the participants alternately place counters to surround opposing pieces and change them to the capturing color. A scoreboard on the right shows the players' current totals, the number of points needed to end the round, and the chance box.

Special squares inject a new element into the classic strategy contest. Red squares subtract points, green ones give a scoring bonus, and yellow ones allow the player to take an extra turn. Experienced Reversi hustlers quickly discover that a single red penalty square can wreck a supposedly surefire winning strategy in this variation.

When all else fails, there is Playing Chance. By clicking the row of "???" in the lower left corner of the Double-Up screen, the computerist or model exchanges a turn for a random event. Possible results range from an automatic win or loss to a 20-point scoring bonus or penalty. This injection of a luck factor into an all-skill game may outrage Reversi purists, but seems appropriate for a lighthearted entertainment like *Centerfold Squares*. Who is going to use this program to train for the world championship, anyway?

The only blemish on this otherwise amiable product is the lack of a "save" feature. Since it takes 20 wins or more to reveal some of the centerfolds, it would be nice to be able to temporarily suspend the tournament for continuation on another day.

Centerfold Squares is everything one could expect from an adult computer game. It is pretty, sexy, and fun to play. And just wait until the computerphobe next door says he's never seen anything interesting on a monitor!

Artworx, 1844 Penfield Rd., Penfield, NY 14526 (phone: 716-385-6120).

—Arnie Katz

ZOOM!

Discovery Software
Amiga with 512K
Disk; $29.95

The last time Discovery Software infused new life into a tired out game concept, the result was one of the best selling Amiga programs to date: *Arkanoid*. They've gone to the well once again, and come zooming up with another winner.

ZOOM! is a maze game in which your onscreen character fills in colored squares by surrounding them with a trail he leaves behind. The maze is filled with odd characters he must avoid while sealing off blocks. Of course, we've seen this game in countless variations. What distinguishes this version is its lustrous appearance and blistering speed—possible only on the Amiga.

From the hilarious opening sequence featuring a vaudeville performance by the ball-shaped characters, to the star-filled backdrop that moves behind the 3-D playfield, it is obvious that *ZOOM!* received painstaking attention. The entire program has the look and feel of an underground comic book, its characters delineated with leering mouths, waggling tongues, and bulging, voluptuous detail that makes the game seem faintly obscene. Everything is painted in pastels reminiscent of 60's head films.

The music is outstanding, as are the digitized sound effects. You'll be tapping your feet in a few minutes, though you have the option to turn off the sound if you get tired of it.

There's more than enough strategy to keep the gameplay from becoming routine. There are 50 levels, with different mazes and antagonists at each. The joystick action is not limited to simple *Pac-Man* style maneuvering, either. You can push the fire button to leave obstacles in your trail to slow down pursuers. These "stop rockets" appear as red missiles in the upper left corner. Objects are constantly materializing on the grid. These can be picked up to produce a variety of effects—the characters pursuing you will freeze or slow down, or you'll advance to the next level, or you'll become immunized against collisions for a brief period. Other objects have mysterious properties—you have to pick them up to see what will happen.

ZOOM! may be familiar in form, but it's original and highly satisfying in style and content. We'll settle for two out of three almost anytime.

Discovery Software, 163 Conduit Street, Annapolis, MD 21401 (phone: 301-268-9877).

—Cleveland M. Blakemore

OBLITERATOR

Psygnosis
Amiga with 512K
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Obliterator is a game of the jump, climb, and shoot variety, a distant descendent of *Donkey Kong* and younger sibling to Psygnosis' *Barbarian*. Unfortunately, it does not represent a significant evolution in the field.

Your mission is to wreak as much havoc as possible while exploring an

Continued on page 76

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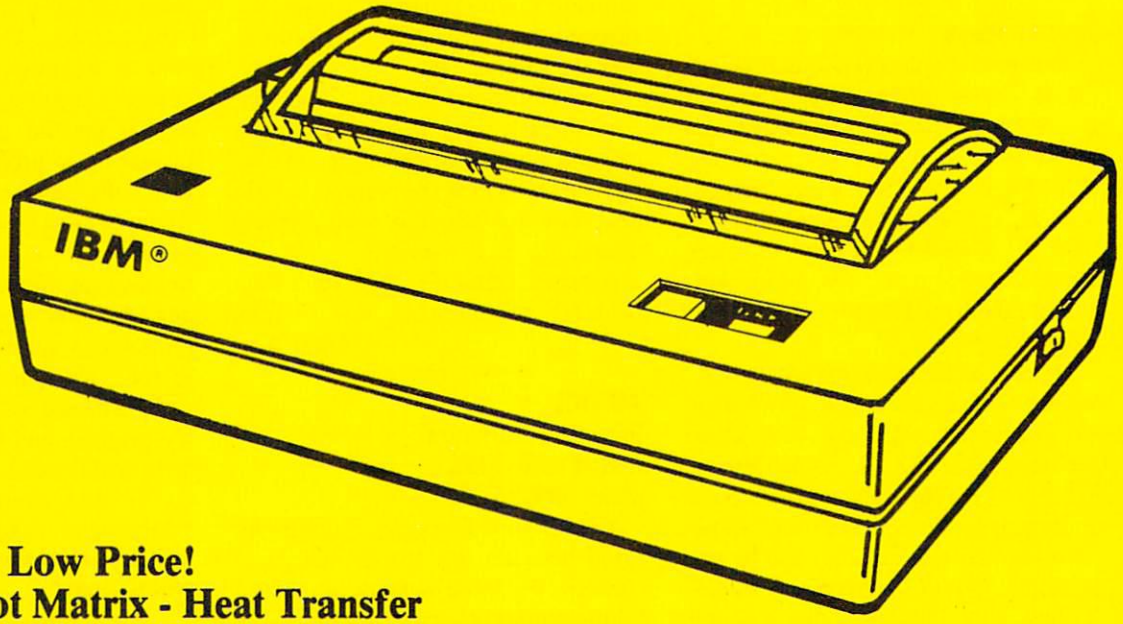
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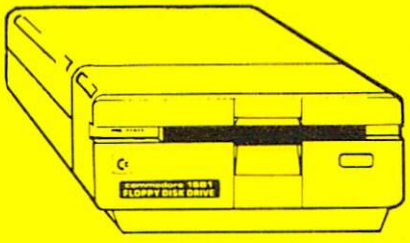
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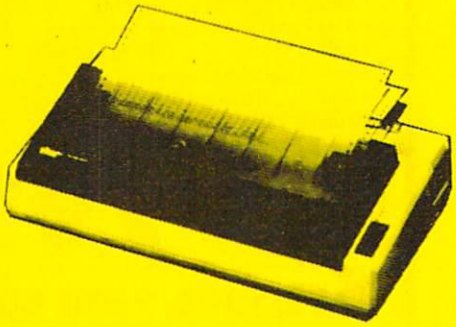
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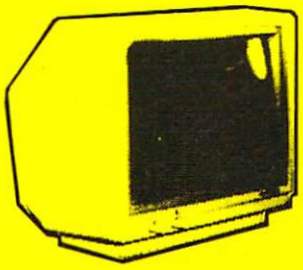
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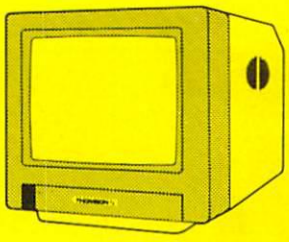
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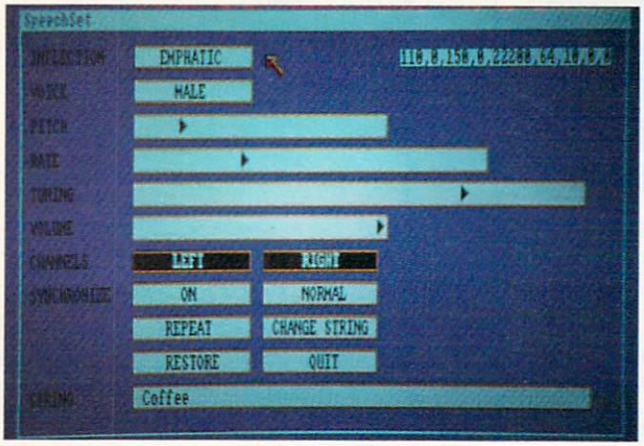


PHOTO: MICHAEL R. DAVILA

I recall a time, years ago, when I was at the Ontario Institute of Technology in Toronto and one of the devices on hand was a speech synthesizer. The synthesizer was only capable of saying one word, "coffee," but it offered a number of dials that could adjust such factors as rate and pitch. Now, years later, my desktop computer, an Amiga, sports the same capabilities. Since Amiga BASIC doesn't offer an easy way to explore speech synthesis, I wrote a program that allows you to change the parameters and see, or rather hear, the effects immediately, much the same as the device at the Institute did. If you haven't experimented with speech synthesis in your Amiga, then you'll enjoy using *Speech Set.* And if you're looking for a particular voice for your program, this program will help you find it.

There are nine parameters, or modes, that affect speech synthesis in Amiga BASIC: pitch, inflection, rate, voice, tuning, volume, channel, synchronization, and asynchronous control. *Speech Set* supports all of these. The screen displays the modes; you simply change any mode by clicking your mouse over it. Some modes switch between two or three settings, whereas others use a slide control. Selecting INFLECTION, for instance, will switch between "EMPHATIC" and "MONOTONE," whereas selecting PITCH will provide adjustments from a low value of 65 to a high of 320.

One control that differs from the others is CHANNELS. Here two boxes are displayed to indicate the left and right channels. When a channel is turned on, the box will appear in reverse. Clicking over the box will turn the channel on and off. Although *Speech Set* doesn't support all 11 possible channel settings, it does allow you to switch between the left and right speakers. There is no setting to turn off all channels, so when you turn off both channels it defaults to mode 11, where speech is directed to any available channel.

When you first use *Speech Set* you'll notice that you can't change the modes while your machine is talking; the program won't react to your command until it's finished what it's saying. Although it is normally impolite to interrupt someone when he's talking, it is perfectly okay to do so in Amiga BASIC. If you set SYNCRHONIZE to OFF/OVERRIDE, speech will be interrupted and another SAY command will be executed. If you set the control to OFF/STOP, then speech will be aborted without executing another SAY command. But if the setting remains there, no sound will be produced until it is changed.

The screen also displays two commands that won't affect the speech modes. One of these, REPEAT, allows you to say a string again without changing any settings. Normally, each time you change a mode the program will repeat the string with the new setting. Unlike the machine at the museum, *Speech Set* provides a way of changing the monologue. Select CHANGE and you can enter the word or sentence of your choice.

Lastly, if you choose RESTORE, all the modes will be restored to default values, the values that the program starts with. Incidentally, at the top of the screen is a numerical list of the modes. These are updated with every change. When you want to keep a particular mode set, copy down these numbers. They are in sequential order so that you use them in DATA statements just as they appear. □

```
DEFSTR a-c:DEFINT d-z
SCREEN 1,640,200,2,2:WINDOW 2,"SpeechSet",(0,0)-(628,186),16,1
DIM pointer(20),blank(20)
a=TRANSLATE$("coffee"):ltch=1:rtch=1
FOR i=0 TO 8:READ s(i):NEXT:FOR i=0 TO 2:READ ctrl(i):NEXT
COLOR 2,1:LOCATE 2,51:PRINT "110,0,150,0,22200,64,10,0,0
COLOR 2,0:LOCATE 2,2:PRINT "INFLECTION";
LINE (118,6)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:PRINT TAB(19)"EMPHATIC
LOCATE 4,2:COLOR 2,0:PRINT "VOICE";
LINE (118,22)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
COLOR 2,1:PRINT TAB(21)"MALE":COLOR 2,0
FOR i=1 TO 4:READ atitle,place(i),edge(i):e=edge(i)+10
  LOCATE 4+i*2,2:PRINT atitle
  LINE (118,22+16*i)-STEP(e-118,11),3,b
  PAINT (120,24+16*i),1,3
NEXT
LINE (165,40)-(172,43):LINE (172,43)-(165,47)
LINE (165,47)-(165,40)
PAINT (167,42),2,2
GET (165,40)-(172,47),pointer:GET (120,40)-(128,47),blank
FOR i=2 TO 4:PUT (place(i),24+i*16),pointer,PSET:NEXT
LOCATE 14,2:COLOR 2,0:PRINT "CHANNELS";
LINE (118,103)-STEP(122,9),3,b:PAINT STEP(1,1),2,3
COLOR 1,2:PRINT TAB(21)"LEFT
LINE (254,103)-STEP(122,9),3,b:PAINT STEP(1,1),2,3
LOCATE 14,38:PRINT "RIGHT
COLOR 2,0:LOCATE 16,2:PRINT "SYNCHRONIZE";
LINE (118,118)-STEP(122,10),3,b:PAINT STEP(1,1),1,3
```

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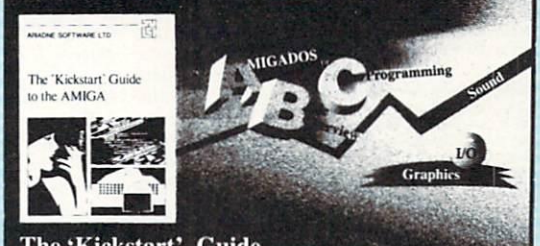
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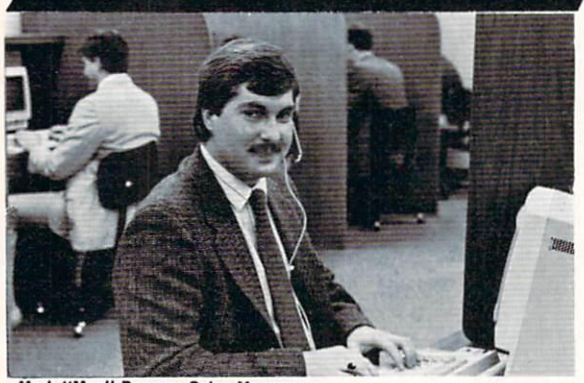
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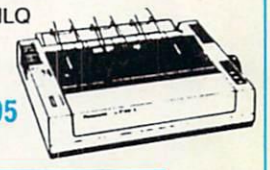
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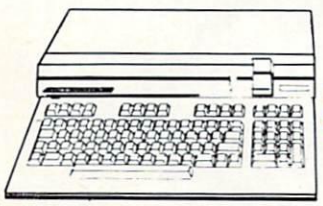
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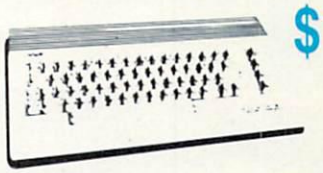


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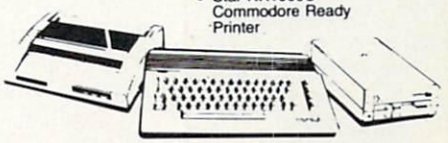
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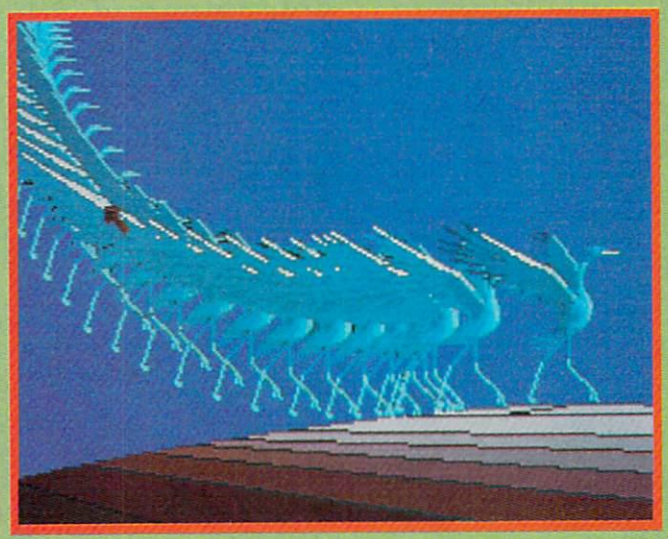
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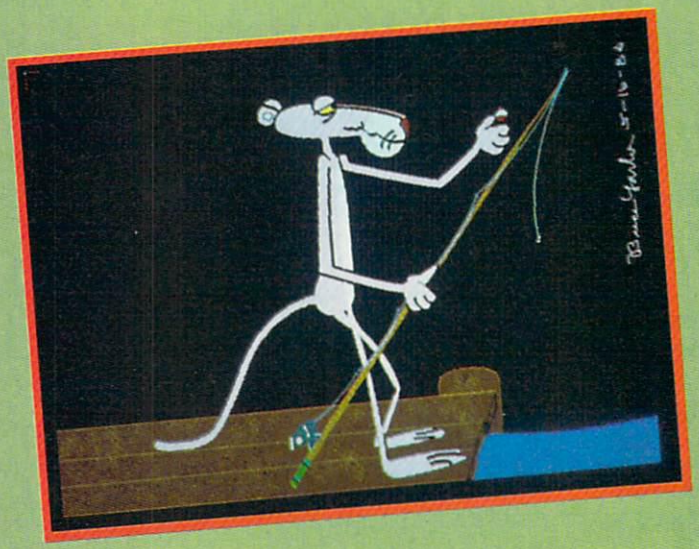
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ART GALLERY





All this month's images were created with *Deluxe Paint.* Glenn S. Adkins (Palm Beach Gardens, FL) drew *Bird* (top left), picked it up as a brush, and swooped his hand across the table to create the landing effect. His *Woods Scene* (top right) is done with air brush, fill, and some curved line work in the foreground. Bottom left: *Pink* by Bruce Yarbor (Oklahoma City, OK). Bottom right: *Zebra* by Timothy C. Suveges (Wilmington, NC).



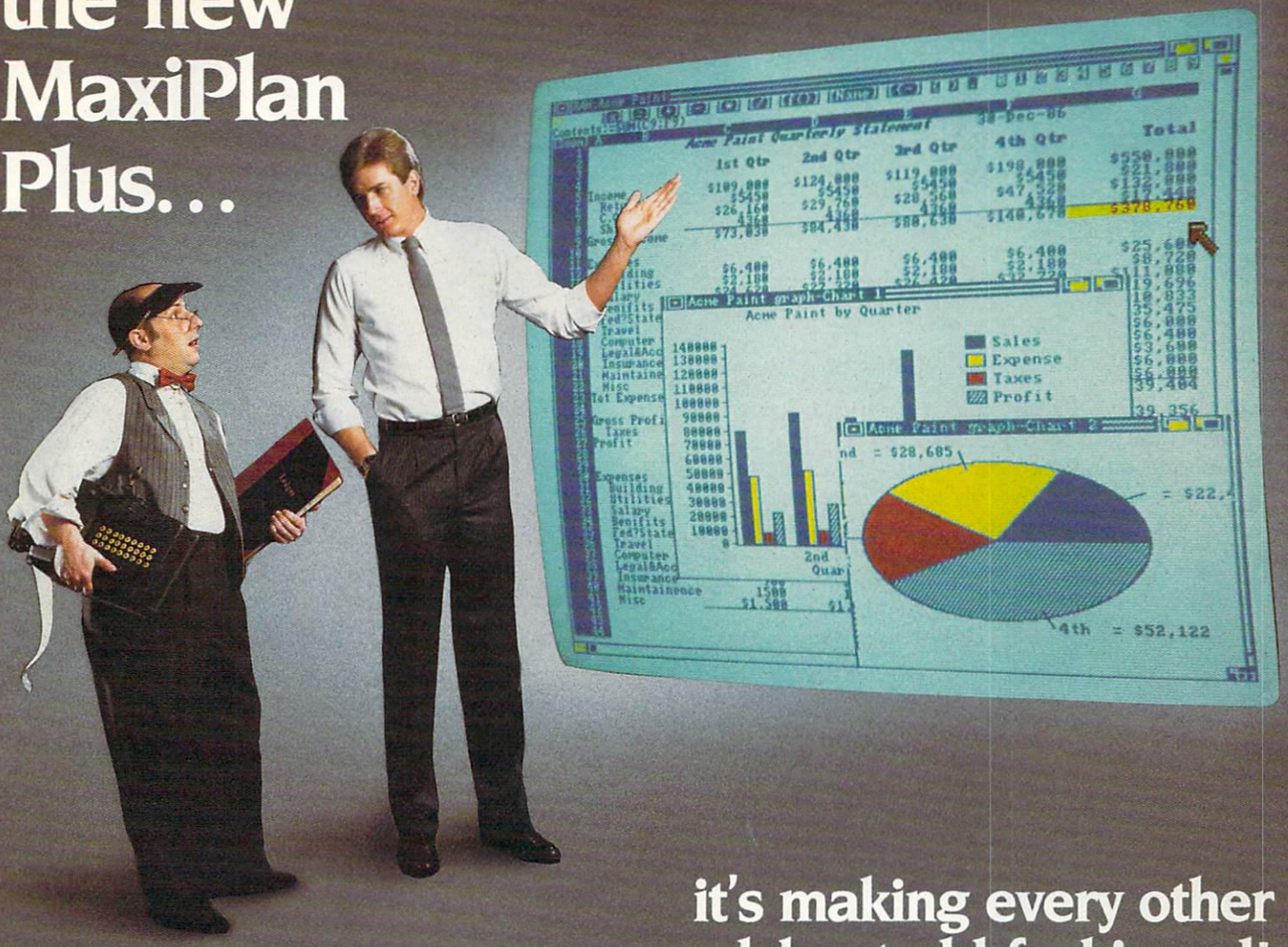
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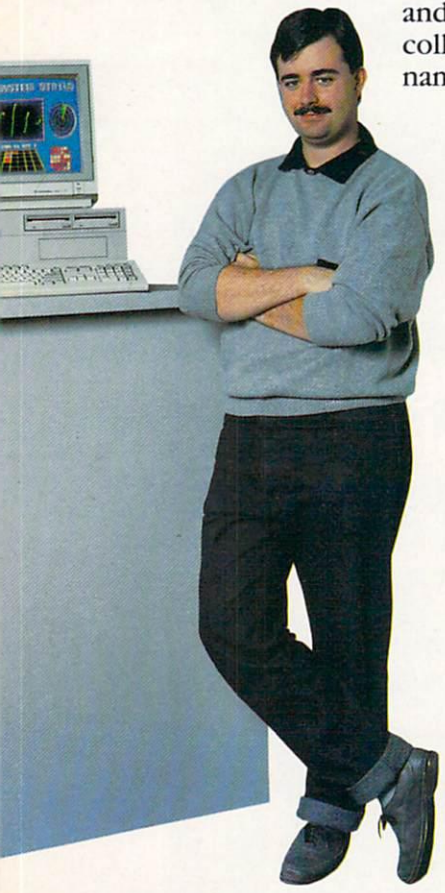
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For Jeff Bruette the Amiga spells success. He uses Aegis programs like VideoScape 3D, VideoTitler, and Animator to help him produce graphics and animations for television programs like *Max Headroom* and *Secrets and Mysteries.*

At MetaVision
When Theo Mayer and Peter Inova began work on a video project for Universal Studios tours they decided to try out an Amiga for a particular effect they wanted. It worked perfectly, and they saved thousands of dollars in post production fees. Next, they put Aegis products to work producing animations for a McGraw-Hill home video. They were convinced, and the Amiga with Aegis software became an integral part of the studio.



At Master Communications
The publishers of the popular *Board Sailing Year* annual video put Aegis software to work for their corporate clients. An Amiga 2000 is part of their video production house and they use products like VideoScape 3D, Animator and AudioMaster for special effects and logos.

And at Pixelight
Independent Amiga artist, Nick Poliko, uses Aegis products to create graphics and animations for such clients as CommCorp, Purolator, and Union Gas. They use his artwork for everything from public relations videos to attention getters at trade shows.



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We handle metamorphic, cel, and color cycling animation with Aegis Animator. Animations are created and edited in an interactive environment allowing you to watch your animation as you build it. Winner of the 1986 CES Award of Excellence, Animator has already found thousands of uses around the world. Included in the $139.95 price is the Images paint system.

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on Video

other features, and a price of $39.95, Images has the best price/performance ratio in paint packages.



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We back up Sonix with AudioMaster, a digital sampling and editing program. It features interactive editing of the waveform and effects like echo, reverse, and low pass filtering. It also makes use of expansion memory (up to 9.5 MB) for extra long samples. Just $59.95.

For more information and the dealer nearest you: (213) 392-9972 or to order direct: **1-800-345-9871.**

For the advanced animator VideoScape 3D provides an environment rich in 3-dimensional capabilities. Object motion and metamorphosis, camera motion, light sources, IFF foregrounds and backgrounds, and the ability to create animations in the ANIM format are just a few of the features that make the $199.95 price tag a great buy.





For titling you can't beat Aegis VideoTitler. It supports all of the Amiga fonts as well as its own polytext fonts, works in four different resolutions and uses overscan. It has 20 different styles, works with IFF, uses halfbrite if available, and supports the ANIM format. Included in the amazing $149.95 price is a slideshow generator that can mix ANIM animations with slides.

AEGIS

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

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VIDEO DIGITIZERS AND FRAME GRABBERS

Text and Photos by Morton Kevelson



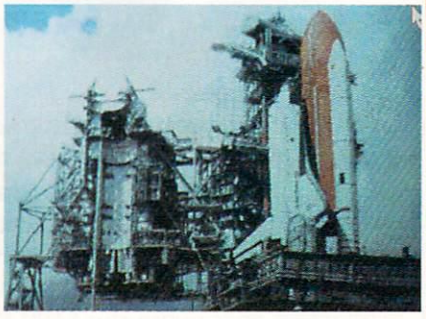
"Oh say can you see?" we asked our Amiga after we finished testing the crop of audio digitizers presented in the May issue. But the computer's answer was no—for while it came with the ability to speak, and we had endowed it with the ability to hear, visual perception was still beyond its grasp. (So, too, was the degree of independent thought necessary to actually have answered our question—but we're allowed to take journalistic license.)

However, the Amiga's developer community is now ready to provide the means by which the Amiga can become visually aware. Thus we present you with three low cost products for the purpose. Furthermore, if you have loose purse strings and are willing to wait a brief while, you will be able to choose from at least two more contenders (see **Decisions** on page 47).

We first looked at an Amiga video digitizer in the March 1987 *Ahoy!* At that time we presented Digi-View along with a beta copy of its version 2.0 software. In this report we will take an updated look at this first digitizer and a beta copy of its version 3.0 release. We will also examine Perfect Vision and the long awaited LIVE! Both of these products bring frame grabbing, as well as video digitizing, to the Amiga.









Sample Digi-View images in HAM mode, interlaced with over-scan.
READER SERVICE NO. 188

DIGI-VIEW 3.0
NewTek
Amiga 500/1000/2000
Price: $199.95

The basic Digi-View hardware has not changed since we looked at it over one year ago. Its 2 x 3" module is designed to plug directly into the parallel port on the Amiga 1000. If you are using an Amiga 500 or 2000, you will also need to use the Digi-View gender changer. This module contains the electronics and hardware to adapt Digi-View to the new computer. In the process it extends the parallel port about two inches.

An RS-170 or NTSC signal is fed directly to Digi-View via an RCA jack on the back of the module. For best results an RS-170 high resolution monochrome security camera with 2:1 interlace should be used. A color NTSC signal can be digitized with some loss of resolution. Digi-View only does a

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monochrome digitization. To generate a color image, you have to perform three digitizations through a set of colored filters which are supplied with the unit. You will need a color separator to digitize a color image from an NTSC signal. The color separator extracts the red, green, and blue information from the NTSC signal and presents it to Digi-View as three separate, monochrome signals.

Digi-View is not a frame grabber. It requires at least five seconds to digitize a single frame. A composite color image takes a minimum of 15 seconds to complete. The default time is 10 seconds per pass or 30 seconds for full color. In addition to the time it takes to actually obtain the data, you have to add the time it takes to process the data into a displayable image. Processing time varies depending on the resolution of the image and the display mode. Actual processing times can exceed the digitization times. Images can be digitized to fill the screen or occupy a half or quarter of the display.

For this review we took a look at a beta copy of version 3.0 of the Digi-View software. The basic operation of the software has not changed since version 2.0. The main improvements are in the variety of display modes in which Digi-View can operate. The opening screen now offers no fewer than 32 options, which include all of the Amiga's standard display modes as well as overscan. The image width can be 320, 352, 640, or 704 pixels. The image height can be 200 or 240 non-interlaced and 400 or 480 interlaced.

The color options now include the 64 color halfbrite display as well as the standard 32 color mode along with the 4096 color Hold and Modify (HAM) mode. Note that some of the early Amiga 1000s are unable to generate the halfbrite display. The Amiga generates its colors based on four bits for each of the three primary colors. When Digi-View digitizes an image, it actually works with seven bits for each color. Internally, this allows for over 2,000,000 color combinations. The extra bits let Digi-View adjust the brightness, contrast, saturation, and tint of the displayed image over a much wider range than would be possible with just four bits per color.

The plastic colored filters which are supplied with Digi-View are assembled into a wheel with a simple metal bracket for mounting via the camera's tripod socket. The wheel has to be manually turned prior to each digitization. For $79.95 you can purchase Digi-Droid, a motorized assembly which will turn the wheel for you. This may seem like a frivolous expenditure for many users. However, if your setup mandates some distance between your computer and the camera, it can save a lot of time and shoe leather.

Digi-Droid plugs into the second joystick port via 10 feet of flimsy looking three conductor ribbon cable. Nevertheless, this wire has managed to survive at least three incidents of tanglefoot tango in our office. The Digi-View software automatically recognizes the presence of Digi-Droid in the joystick port. It responds by adding motor calibrate and automatic digitize options to the menus.

Before booting Digi-View with Digi-Droid on an Amiga with expansion memory, be sure to execute FastMemFirst or an equivalent utility. This forces all executable code into the expansion RAM whenever possible. Digi-View has problems operating Digi-Droid, especially when generating high resolution (640 pixel wide) displays, if its operating code gets into chip RAM.

Our opinion of Digi-View has not changed in the past year and a half. We feel it is a versatile, low cost product which is able to generate high quality digitized images in color or black and white. The new display modes, in version 3.0, add even more versatility. A good monochrome camera will be required for best results.

NewTek, 115 W. Crane St., Topeka, KS 66603 (phone: 800-843-8934).

PERFECT VISION

SunRize Industries
Amiga 500/1000/2000
Price: $219.95

SunRize Industries seems intent on becoming the sensory wizards of the Amiga community. In the May issue we examined Perfect Sound, a sound digitizer for the Amiga. Now we look at Perfect Vision, a real time video digitizer and frame grabber for the Amiga and IBM compatibles. Rumor has it that SunRize is surreptitiously working on Perfect Smell and Perfect Feel for release in the far future. In view of the Amiga's capabilities, these wouldn't surprise us.

Perfect Vision is housed in a 6" wide by 7" deep by 1½" high stand alone metal enclosure. On its front panel we found a power indicating LED, along with contrast and brightness controls. On the back panel we discovered the on/off switch beside a jack for the external power module, an RCA jack for video input, a standard Centronics connector for hooking up to the computer's parallel port, and a nine pin joystick connector for controlling an external color separator. Perfect Vision will accept either an RS-170 or NTSC video signal while rejecting the color data associated with the latter.

Perfect Vision has its own 64 kilobyte dynamic RAM buffer which enables it to grab a field in 1/60th of a second or a complete frame in 1/30th of a second. Each image is digitized with four bits, or 16 gray levels, per pixel. This translates to four bit planes of 8000 bytes, which adds up to a total of 32,000 bytes for a non-interlaced (320 by 200 pixel) image. For an interlaced (320 by 400 pixel) image, each bit plane requires 16,000 bytes for a total of 64,000 bytes. The hardware and the accompanying software is able to transfer and process the buffered data into the computer at the rate of approximately two frames per second.



A selection of digitized (300 × 400 pixel, 16 color) images captured off the TV screen with Perfect Vision.
READER SERVICE NO. 189

The first step in using Perfect Vision is to set its brightness and contrast controls. This will take a few minutes, as the settings are rather critical and have to be done at the two frame per second display rate. The software lets you display a histogram of the digitized image as an aid to checking the settings.

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The histogram should show values across the entire brightness range.

Version 1.1 of the Perfect Vision software lets you capture images in several ways. All of the operating options appear on a series of menus which are continuously displayed across the bottom of the screen. The main menu presents CYCLE, EFFECTS, FILE, COLOR, OPTIONS, and QUIT. The CYCLE function brings up a second menu and immediately commences to update the displayed image at the two frame per second rate. At this point you can simply wait till you see what you want and preserve the image by EXITing back to the main menu. This is easy to do at the two frame per second rate. The second menu also lets you divide the display into quadrants in which the images are displayed in sequence. Images can be saved in IFF format or as RAW data.

The RECORD option brings up a third menu which lets you handle image sequences. You can set the maximum number of frames which will be recorded in the Amiga's RAM from 1 to 200. We were able to grab 82 non-interlaced images and 40 interlaced images in an Amiga 2000 equipped with three megabytes of RAM. Perfect Vision lets you SHOW the entire sequence of stored images, or GOTO and display individual frames. You can also step through the sequence a frame at a time in either direction.

Images can be individually saved, or the entire sequence can be automatically dumped to disk. In the latter case, Perfect Vision assigns sequential file names. Of course, you will need a hard disk to handle the output from an expanded Amiga. There was one additional option we would have liked: the ability to grab individual images into RAM while in the CYCLE mode. This feature may be added to the next revision of the software.



We tried out Perfect Vision by digitizing a series of images from broadcast television. The results were quite impressive. Each image was sharply defined without noticeable distortion. The 16 level gray scale rendered the colors into a very presentable black and white image. In fact, we couldn't remember our old 19" black and white TV ever looking this good.

The EFFECTS menu lets you process the image in several ways. The EDGE selection can be set to find horizontal, vertical, or all edges. The image can be sharpened or softened. A high contrast, two level image can be



generated by slicing at a preset threshold. All changes can be undone.

The OPTIONS menu is where you can set the operating modes. This is where you can select between the two display resolutions of 320 by 200 pix-



els or 320 by 400 pixels. You can also expand the image into overscan, although Perfect Vision does not digitize the image in this mode. It merely duplicates an occasional row and column of pixels to expand the display. You can fiddle with the palette to create your own false color effects, or you can simply add red, green, or blue tints to the image or select the built-in false color palette.

Perfect Vision cannot grab a color image from an NTSC signal. You can build a color image by digitizing a monochrome image three times through the colored filters provided. Of



course, this can only be done with a video camera. The manual suggests that you hold the filters before the lens. We rigged up a simple metal bracket instead. In fact, we used the bracket that came with Digi-View. The software lets you combine the three images into a standard 32 color display or into a 4096 color HAM display. The resulting image can be manipulated by adjusting its brightness, contrast, saturation, and the balance between its red, green, and blue components. Although the software only works with four bits per color, its effective operating range is extended by the use of the hardware brightness and contrast controls.

SunRize is presently working on a $100 hardware color separator which will allow you to digitize an image in color from a color camera or other NTSC signal. The color separator accepts a composite color signal and converts it to three monochrome signals whose brightness corresponds to the red, green, and blue content of the original image. We were able to preview a prototype of this unit, which lacked some of the features that will be part of the production model.

The final version of the color separator will include a matching connector to the nine pin port on the back of Perfect Vision. This will enable Perfect Vision to automatically cycle through the three monochrome images when doing a color digitization. With the automatic connection in place, Perfect Vision will be able to digitize a color image in about 1½ seconds.

The color separator can be used as a stand alone device, as it will be equipped with a manually operated switch for selecting the three images it generates. This will let you use the device with other products, such as Digi-View, to obtain a color digitization from a composite color signal. We will present a complete review of the color separator when the finished unit

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is available.

The manual included with Perfect Vision is adequate and concise. The program disk includes a brief description of the operation of the digitizer and the source code for accessing Perfect Vision via the Amiga's parallel port.

Perfect Vision is the only unit we have seen to date which is able to grab a four bit plane image in real time. The resulting 16 level gray scale images are well-defined, with good tone and contrast. The unit is also able to digitize three stage color images through colored filters or via its optional color separator. The accompanying software provides several ways to capture a series of images from a dynamic video source. Perfect Vision gives you a lot of performance for your dollar.

SunRize Industries, 3801 Old College Road, Bryan, TX 77801 (phone: 409-846-1311).

Video Digitizing Versus Frame Grabbing

Simply put, the process of digitizing an image converts video information into digital data which can be manipulated, and displayed, by the Amiga. Frame grabbing is the ability to digitize an image in a video instant, which happens to be 1/30th or 1/60th of a second. To get a better understanding of what this means, we have to look at the structure of the video signal which we are digitizing.

In this country there are two related standards for video signals. The RS-170 standard is for monochrome or black and white images. Each image or frame is built up from 525 lines which are sequentially scanned across the display screen. A frame consists of two interlaced odd and even fields of 262½ lines each. The interlacing causes the lines of each field to be scanned between the lines of the prior field. It takes 1/60th of a second to scan a single field, or 1/30th of a second to scan an entire frame.

The National Television System Committee (NTSC, sometimes referred to as Never The Same Color twice) standard is the same as the RS-170 standard, except it provides for the addition of color information to the video signal. This color information originally consists of separate red, green, and blue signals which are encoded into the NTSC signal.

If the video signal does not change from frame to frame, such as a VCR in pause or the image of a stationary subject, then it may be digitized in a leisurely manner by examining any number of successive frames. If the image is constantly changing, you need a frame grabber to get a sharp picture. The frame grabber has to have the ability to digitize a field or frame in 1/60th or 1/30th of a second.

LIVE!

A-Squared Distributions Inc.
Amiga 1000
Price: $295.00

LIVE! at last. Ever since we watched Andy Warhol digitize Debby Harry at the presentation of the Amiga in Lincoln Center, New York City in August 1985, we have been wanting to get our hands on this gadget. Well, Andy is no longer with us, and we don't know what Debbie is up to nowadays, but LIVE! is here and we're here to tell you about it.

This review was based on the Amiga 1000 version of LIVE! The unit plugs into the computer's expansion port and dumps its digitized data right into the Amiga's RAM. A-Squared was already selling the Amiga 500 version of LIVE! as we went to press. This unit, which has its own power supply, contains special circuitry to prevent damage to the computer if you power up in the wrong sequence. The Amiga 2000 version of LIVE! should be available this summer.

As with the other video digitizers we have looked at, LIVE! has its own way of doing things. Having direct access to the Amiga's bus lets LIVE! transfer data to the computer at a fast rate. In fact, LIVE! transfers image bit planes in real time: 320 by 200 pixels in 1/60th of a second and 320 by 400 interlaced pixels in 1/30th of a second. Notice we said bit planes and not an entire image. A simple, 16 level gray scale image, which requires four bit planes, can be transferred and assembled by the LIVE! system in about 1/15th of a second.

The LIVE! hardware itself is housed as an Amiga-beige plastic enclosure 12" deep, 4" high, and about 1½" thick. To the left is the mating connector to the Amiga 1000's expansion port. Since there is no pass through connector, LIVE! will have to be the last peripheral on the bus. We ran LIVE! along with a C ltd aMEGA one megabyte expansion card without any problems. The video in and out jacks are easily accessed on LIVE!'s front panel. The inclusion of a video pass through lets you run a cable to the composite video jack on the monitor. This makes it easy to switch between the original video signal and the Amiga's own output. LIVE! will accept just about any RS-170 or NTSC composite video signal.

Inside the box we found the fully shielded circuit board which earned LIVE! its certification as a "class B computing device pursuant to Subpart J of Part 15 of FCC rules." The circuit board contains an imposing array of digital components along with a high speed (35 nanosecond), four bit analog to digital converter.

The LIVE! hardware is quite flexible and can be programmed to perform a variety of video processing functions. Software and hardware hackers will be pleased to hear that the LIVE! distribution disk includes detailed documentation on how the software works, along with source code for the LIVEbrary routines. The code is available for anyone to use it as long as it is used in conjunction with the LIVE! hardware. One of the things you will discover by scanning this documentation is that the nature of LIVE! precludes multitasking. In fact, LIVE! turns off the Amiga's operating system while it is digitizing an image.

As we mentioned above, LIVE! can display four bit plane, 16 level gray scale images at a rate of 15 frames per second. The animation actually looks nearly as smooth as the 30 frame per second rate of the original NTSC signal. Since the bit planes are taken from successive frames, the resulting images tend to blend from one to another as each bit plane is updated. On the other hand, grabbing a single image using this technique can result in some ghosting or shadowing if the original image is not stationary. The ghosting is caused by the shift in the registra-

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Oxxi, a relatively new company whose name has become synonymous with landmark software for the Amiga, is pleased to announce their new *Benchmark Modula-2: Software Construction Set* for the Amiga.

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The *Benchmark Modula-2: Software Construction Set* has some terrific features, besides those already mentioned: Amiga hardware/software support libraries, including Intuition, ROM Kernal, Amiga DOS, to name but a few; Standard Modula-2 libraries, including File-System, InOut, Storage, Terminal, Math-LibQ, and more; demonstration programs showing the usage of many of the Amiga functions, such as windows, graphics, multi-tasking, menus, gadgets, and many others (some of the demo programs include a freehand paint program and a desktop calculator); and professionally written documentation, consisting of a user's guide and a reference

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See you in September with more dynamite offers for your consideration.

Admirally yours,

Joe Ferguson

Joe Ferguson
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When I was a kid, I loved to buy boxes of Cracker Jacks, not for the confection, but rather for the surprise. This month **Computer Mart** has a cracker jack surprise offer for you, too. Their jim dandy copy protection program, *Kracker Jax®*, was reviewed in the January, 1987 issue of *Ahoy!* We liked it, and so will you. *Kracker Jax®* is a powerful parameter copy program which will allow your 1541 or 1571 disk drive to strip all copy protection from your expensive software, thus allowing you to use simple, fast copiers to make backups. You need never again pay for a backup to a program you already own. The cost of *Kracker Jax®* is only $19.95 for each volume. There are five.

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tion between bit planes when they are grabbed from successive frames.

Once the 16 level digitization mode is up and running, LIVE! lets you use mouse tinting to modify the appearance of the image. Moving the mouse up or down shifts the overall luminance of the image to white or black. Clicking the left mouse button cycles the display through the 12 built-in color maps, ranging from the default TV grays to a garish crayon as well as a color negative palette and a gray negative palette. Once a map is selected, left to right mouse movement cycles the hue of the picture, and vertical mouse movement, while pressing the ALT key, increases or decreases color saturation.

There are two ways to save images from LIVE! Single images can be frozen and saved in IFF format by tapping the space bar, or a sequence of images can be captured into RAM. The number of images which can be captured depends on the amount of memory you have and the display mode. We captured thirty-one 16 level, non-interlaced images with 1½ megabytes of RAM. Once in memory the sequence can be viewed or saved out to disk in a compressed "riff" format. To extract individual images from the captured sequence you must use the public domain Playriff program which is supplied on the disk. The source code for this program is included as well. Playriff lets you show complete sequences which are saved as riff files, examine individual frames in a sequence, save single frames from a sequence in IFF format, and create riff files from sequences of IFF files. You can use Playriff to distribute your own videos created with LIVE!

Several other display modes are available which can enhance the appearance of the image. The smooth images option reduces the staircasing or jaggies which affect low resolution images. The digitization rate is slowed down by this option. Interlace can also be turned on if your VCR needs to see an interlaced image. Simple interlace does not add any data to the display; it merely doubles up the number of lines. True interlace can be selected to generate 320 by 400 pixel images. True interlace slows down the digitization rate to about 7½ frames per second.

LIVE! lets you digitize in color from an NTSC signal. Simple color is a five bit plane, 32 color digitization in either 320 by 200 pixels or 320 by 400 interlaced pixels. The frame rates for these modes are 12 frames per second and six frames per second. Ghosting is more noticeable with moving images in the color display modes. Since the digitizing process leaves very little time for processing the data, the color images are not likely to show true colors on the first try. The colors can be manually adjusted for better accuracy.

Last but not least, LIVE! lets you grab images in the 4096 color HAM mode. The frame rate for HAM images is about four frames per second. A HAM image is actually composed of 12 bit planes or four bit planes per color. The 12 bit planes are then processed into the actual six bit planes which are needed by the HAM display. The complexity of the HAM image structure makes it impossible to completely process the image in real time. Thus the HAM display does not look its best as the images are cycled. Prior to saving a single HAM image, you have the option of processing the data. This is done in two steps, smooth and sharpen. Only single HAM images can be grabbed, as the capture option is not available in HAM mode.

LIVE! has a seemingly endless bag of tricks. It can be used with a genlock device to mix a digitized image with a genlocked image. A menu option lets you change the border color, which is also color zero in the Amiga's palette, and consequently the portion of the screen in which the genlocked image will appear. Changing the border color can also produce some interesting effects even without a genlock device.

If you are digitizing with a video camera, try pointing it at the screen. The resulting video feedback effects will be like nothing you have ever seen without the benefit of LIVE!

Third Party developers are starting to use LIVE! in their own applications. Perhaps the most striking application has been *The Mandala* from Very Vivid (302-1499 Queen St. West, Toronto, Ontario, Canada M6R 1A3; phone 416-537-7222). *The Mandala* uses LIVE! to let a live performer interact with the Amiga to generate music and control synthesizers and other musical instruments. We first saw a demonstration of *The Mandala* at the World of Commodore in December 1986. Other applications for LIVE! include image recognition in industrial applications.

The latest third party application of LIVE! which we have seen is with *Fantavision,* an animation package from Broderbund (17 Paul Drive, San Rafael, CA 94903-2101; phone 800-527-6263 or 415-492-3200). *Fantavision* lets you grab a LIVE! image and uses it as a background for your animation project.

A-Squared appears to be embarking on a program of regular software upgrades. The package includes a checklist and questionnaire of software features you would like to see. You can also subscribe to one year of quarterly software updates for $50 or buy a single update for $25. If you are wondering just how committed A-Squared is to this update program, consider this. As we were finishing up this review we received a beta copy of the next LIVE! software update. This revision included overscan capabilities with a 368 by 240 pixel display or 480 vertical pixels with interlace turned on.

How Much Resolution Is Enough?

The digitizers currently available for the Amiga produce images in every possible display mode. The display mode to use depends on your application and the source of your video signal. A high quality monochrome camera is able to generate sufficient detail to take advantage of the Amiga's highest resolution display modes. However, the horizontal resolution of most home VCRs is less than 300 dots. The resolution of the camera, which is part of a good quality camcorder, may go as high as 350 dots across. The effective detail of broadcast television is also about 300 dots.

Keeping this in mind, it is obvious that the Amiga's low resolution display mode will be adequate for use with the color composite video sources available to home users. Professional quality studio equipment will be required to provide a signal which can take advantage of the Amiga's high resolution display modes.

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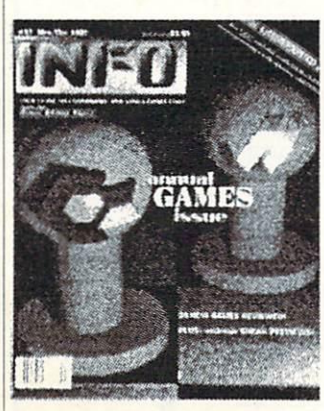
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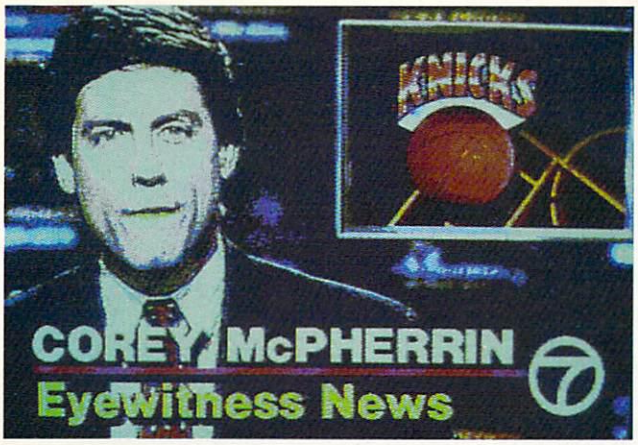
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Samples of LIVE!'s simple color (five bit plane, 32 color) display. Since the digitizing process leaves little time for processing the data, images may not show true colors on the first try. *READER SERVICE NO. 190*

Overall, LIVE! does a good job of digitizing sequences in very close to real time. It is the only unit in its price category which can perform this operation. With a reasonably stationary image, LIVE! can generate high quality, low resolution interlaced digitizations. In any case, LIVE! sequences can be easily touched up by a paint package.

A-Squared Distributions Inc., 6114 La Salle Avenue, Suite 326, Oakland, CA 94611 (phone: 415-339-0339).

Decisions

The real hard part will be choosing which video digitizer is the one for you. Each of the units we have looked at has features and options which are not available on any of the others. Digi-View supports the greatest variety of the Amiga's display modes. Images digitized with Digi-View can have more detail than those from any of the other units. In addition, Digi-View's image processing software is excellent. The Digi-View module and software is the least expensive of the units we have seen; however, the price goes up if you include the cost of an RS-170 video camera. Of course, Digi-View is not the unit to choose if you are interested in real time frame grabbing.

Perfect Vision was the only unit that could grab a complete four bit plane, 16 level gray scale image in real time. Although limited to black and white, the resulting images are very well defined with excellent tonal rendition. Perfect Vision can also do color digitization by combining three color separations, but not in real time. Perfect Vision's moderate transfer rate of two frames per second is not fast enough to create digitized sequences in real time. However, some experimentation with the slow motion controls on a good quality VCR may overcome this limitation.

LIVE! is the only unit which can capture real time image sequences in color, gray scale, or HAM display formats. Its fast operation makes it the most suitable of the three for special effects. Although it does work at high frame rates, keep in mind its limitations when it comes to the accuracy of single frames (most of these limitations disappear if you are working with a fixed image with LIVE!) LIVE! is probably the unit you will want for most desktop video applications.

Of course these three units are not the only options available to Amiga users. By the time you read this there may be some additional ones available. Progressive Peripherals is very close to shipping their FrameGrabber ($495). The information currently available on FrameGrabber indicates that it will capture color images in 1/30th of a second and black and white images in 1/60th of a second. The supported screen resolutions will range from 320 by 200 pixels to 640 by 400 pixels including a 352 by 240 pixel overscan display and HAM mode; however, the display modes for the various resolutions are not indicated. Since FrameGrabber interfaces via the parallel port, its frame transfer rate between the digitizer and the computer will probably be on the order of 20 seconds. A similar video digitizer is being developed by Impulse, Inc., 6870 Shingle Creek Parkway #112, Minneapolis, MN 55430 (phone: 612-566-0221).

A possible snag in the delivery of the stand alone frame grabbers is the availability of low cost RAM. A unit which can grab an interlaced HAM image in real time will require at least 128 kilobytes of RAM. We expect these units to be fitted with a quarter megabyte. When these units were first conceived, a quarter megabyte of dynamic RAM sold for about $25. At the present time the same RAM is about $100. The manufacturers may be reluctant to commit themselves to the purchase of production quantities if they expect RAM prices to fall in the near future. This could delay shipment of the units even after their designs have been finalized.

Also in the wings is the Video Toaster (approximately $800) from NewTek. We do not have complete specifications on this device at this time. A NewTek spokesperson has indicated that the Video Toaster will install on the Amiga's expansion bus. NewTek intends to provide the unit for all three models of the Amiga. The Video Toaster will contain its own frame buffer and will be able to digitize full broadcast quality NTSC video sequences in real time. The unit will have no fewer than 100 special effects built in, and it will include a genlock device. □

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PHOTON PAINT

MicroIllusions
Amiga with 512K
Disk; $99.95

Photon Paint is a powerful paint program which turns the *Deluxe Paint II-Digipaint* competition into a three horse race. It does so through a blend of features, some found in *DP II,* some found in *Digipaint,* some unique.

Despite its advanced features there are inconsistencies: several basic tools or functions have been omitted and processing speed isn't always up to par. There's no valid reason for this, other than a need to get the program to market. Pressure is always on developers to get a good product out the door and then to fine tune it with an upgrade. Sometimes this strategy works, sometimes it leaves the product weak compared to the competition. With that in mind, let's put *Photon Paint* through its paces.

The Basics

Photon Paint requires 512K RAM; one megabyte is needed for the 320 by 400 display mode. An external floppy drive is recommended. The program's lack of copy protection makes a hard drive feasible, but not necessary.

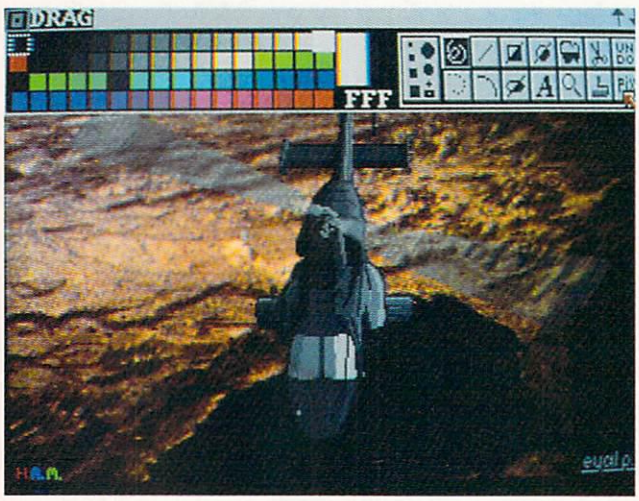
Hold and Modify (HAM) mode is supported under the NTSC or PAL (West European) television broadcast standards. So is overscan and interlace, if your monitor can handle the load. Images are produced and stored as IFF files, making *Photon Paint* compatible with most Amiga graphic software. A quick reference card, which outlines the keyboard equivalents to pulldown menu options, is provided. It's a useful item to have around.

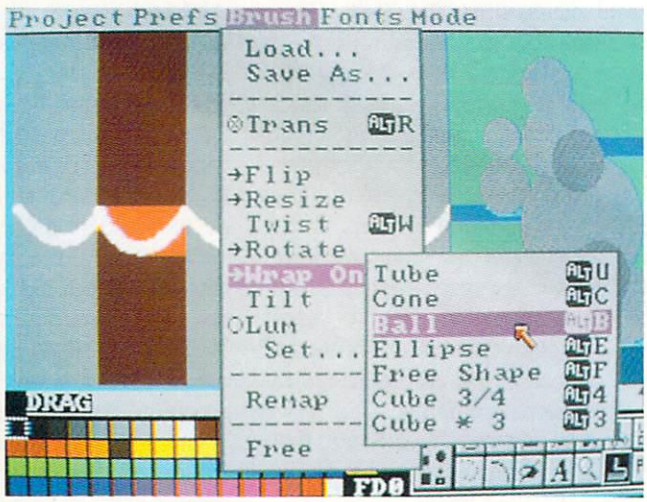
The manual looks nice—a professionally printed piece on coated paper. Its organization is somewhat unusual, however, as the reference section precedes the tutorials. (At least the introduction is at the beginning.)

While that is a small eccentricity, the lack of screen illustrations isn't. After all, this is a program for the Amiga, and more to the point, this is a program about illustrations.

Lack of a glossary (to explain terms such as NTSC, PAL, interlace, HSV, etc.) is bad enough; lack of an index is inexcusable. Without a glossary, novices will remain that way, or worse yet, be turned off. The latter deficiency makes it difficult to find a precise function or term. You must either scan the entire manual, guess, or become so well acquainted with the manual that you know every line on every page. In that case, you wouldn't need to look anything up anyway!

As you can surmise from my remarks thus far, the manual looks better than it is. It has hard-to-find (though useful) information and it is poorly arranged and cross-referenced. Instead of







Photon Paint: ***capable, but flawed.***
READER SERVICE NO. 197

spending the money on production, the focus should have been on content.

Features

PP makes it possible to paint in "exact color," an option which prevents automatic modification according to the background color. There are three types of fill functions; brushes can be stored, loaded, flipped, resized, rotated (in single degree increments), and tilted (for a two-dimensional effect simulating perspective). Dithering comes standard, along with the ability to blend a brush or object into the background. The latter is not a fade or transition, as this is a static paint program—it's more a camouflage merge.

The two part menu bar can be resized, removed, or recalled—whatever you need to get the job done the way you like to work. One of the real kickers concerns advanced brush manipulation, twisting, selectable transparency, perspective (pseudo 3-D), and the winding or wrapping of brushes onto imaginary shapes. Anyone can cut a brush from an illustration or load a

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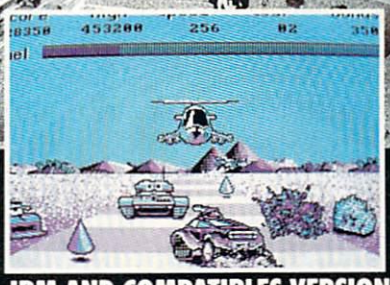
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brush from another program and wrap it around a cone, ball, ellipse, or a custom pattern. While performing these brush contortions, users can also specify light source, light intensity, and shading factors. The lighting features also work with fonts—a great way to create that custom look without using a font editor. Fonts, those supplied with the program or from another source, can be portrayed in outline or reverse image modes.

True artists will love the ability to specify the 16 colors that produce the basis for HAM output, as well as the power to change the 64-color palette by RGB (Red, Green, Blue) and HSV (Hue Saturation Value) sliders. Mix until the desired colors appear—there's no messy cleanup when *Photon Paint* is involved.

Photon Painting

PP is rather intuitive. Most of the icons are visually self-explanatory, particularly to seasoned electronic artists. (There are exceptions to this, but they are icons which change according to the number of mouseclicks used on them.)

Except for cursor positioning, the main options are available through (mostly) mnemonic keyboard alternatives. Where there is a duality of purpose (with slight variations), upper and lower case keystrokes are used to differentiate the functions. For example, "e" triggers a hollow ellipse and "E" triggers a filled ellipse. Not all the associations are this clear-cut, but the exceptions are nothing to worry about.

The magnify mode is interesting; it's like working with Inspector Gadget, the cartoon character with interchangeable parts such as springs in his arms, skis in his feet, and a helicopter rotor in his hat.

Besides the traditional "pick a location and magnify" capabilities, the magnify mode has arrows for four-directional scrolling. The window can be moved via the drag bar or resized. Clicking on the plus sign increases magnification, the minus sign the reciprocal. Max and Min automatically jump to the greatest and lowest powers of magnification; "M" opens up another magnification mode and "B" adjusts the right-hand border after working in that area.

While in this mode to clean up a stray line, I ran across a problem. I had a devil of a time getting my brush to affect only certain pixels. Adjacent pixels were changing colors by association, fraternizing with colors I wanted to change. New colors began to appear on the screen. So I flipped back and forth between "exact color" and regular mode. This took care of most of my problems, though I was completely powerless against several pixels. My brush was under alien control, or something along those lines.

An offset option corrects for improper displays and the use of overscan or interlace modes. This is more important than you can imagine. Part of the menu bar disappeared from the top of the screen when I switched back and forth between resolution modes. Adjusting the picture to better fit the screen took care of my anxiety attack.

Another wild feature concerns palette changes. New colors will not affect those already onscreen, making it possible to work with all 4096 colors during a single masterpiece. This helped me touch up an image scanned in with *Live!*

Some of the processes are sloooow. Changing the background color takes five seconds or better. Using the arc tool can be an exercise in existentialist patience as you wait for the line to track the mouse and the three mouseclicks needed to designate the arc.

Smearing a loaded or clipped brush is a common feature on the Amiga, but not with *Photon Paint*. I was unable to smear my carefully crafted brushes. If the ability is in the software, and I doubt it, it is so well hidden that only the most adventurous will uncover it. (Here's where that index would have saved plenty of time and frustration.)

Now to come full circle. At the start of the review I mentioned missing functions. *PP's* cavalcade of commands does not include a spray gun or fill pattern. Didn't the designers and programmers check out the competition or ask end users what they wanted? Evidently not, as this stuff has been around since *MacPaint*.

To Buy or Not to Buy

No, *Photon Paint* is not the answer to all your artistic yearnings. It is capable, but flawed. It has several very strong suits and a Joker or two.

If you need advanced brush manipulation or have special HAM requirements, this is the program for you. If not, it may still fit the bill; however, don't overlook the other products just because this is the newest one on the market, or because you can get a particularly good deal on it.

MicroIllusions, 17408 Chatsworth Street, Granada Hills, CA 91344 (phone: 800-522-2041 or 818-360-3715).

—Ted Salamone

MAVIS BEACON TEACHES TYPING

The Software Toolworks
Amiga with 512K
Disk; $49.95

After reading the documentation that came with this package, examining the program in detail, and studying the back of the box, I still do not know who Mavis Beacon is. A qualified typing instructor who endorses this program? A talented programmer who wished to remain anonymous? A completely fictional character?

On the front of the box is an attractive careerwoman standing in front of a bunch of skyscrapers. Could this be Mavis? A relative? A passerby who posed for the photographers? We may never know the answer.

This typing tutor is another highly intelligent release from the company that produced *Chessmaster 2000.* It is challenging and well-designed, meriting commendation in a field of software where the race for distribution usually overcomes the necessity for refinement. After seeing many programs that do not take advantage of the Amiga's capabilities, it's pleasing to find a product that has been subjected to such obvious quality control by its creators.

Mavis Beacon makes learning touch typing easy and entertaining. Although the program constantly strives to challenge the student by monitoring his or her progress, it is wisely generous with rest periods and diversions to keep things from getting monotonous.

There are essentially two different modes of instruction: drills, featuring timed and/or scored practice on the keyboard, and arcade action, where the student attempts to outrace a pace car by typing in random phrases as they scroll across the screen.

I wish there had been just a little

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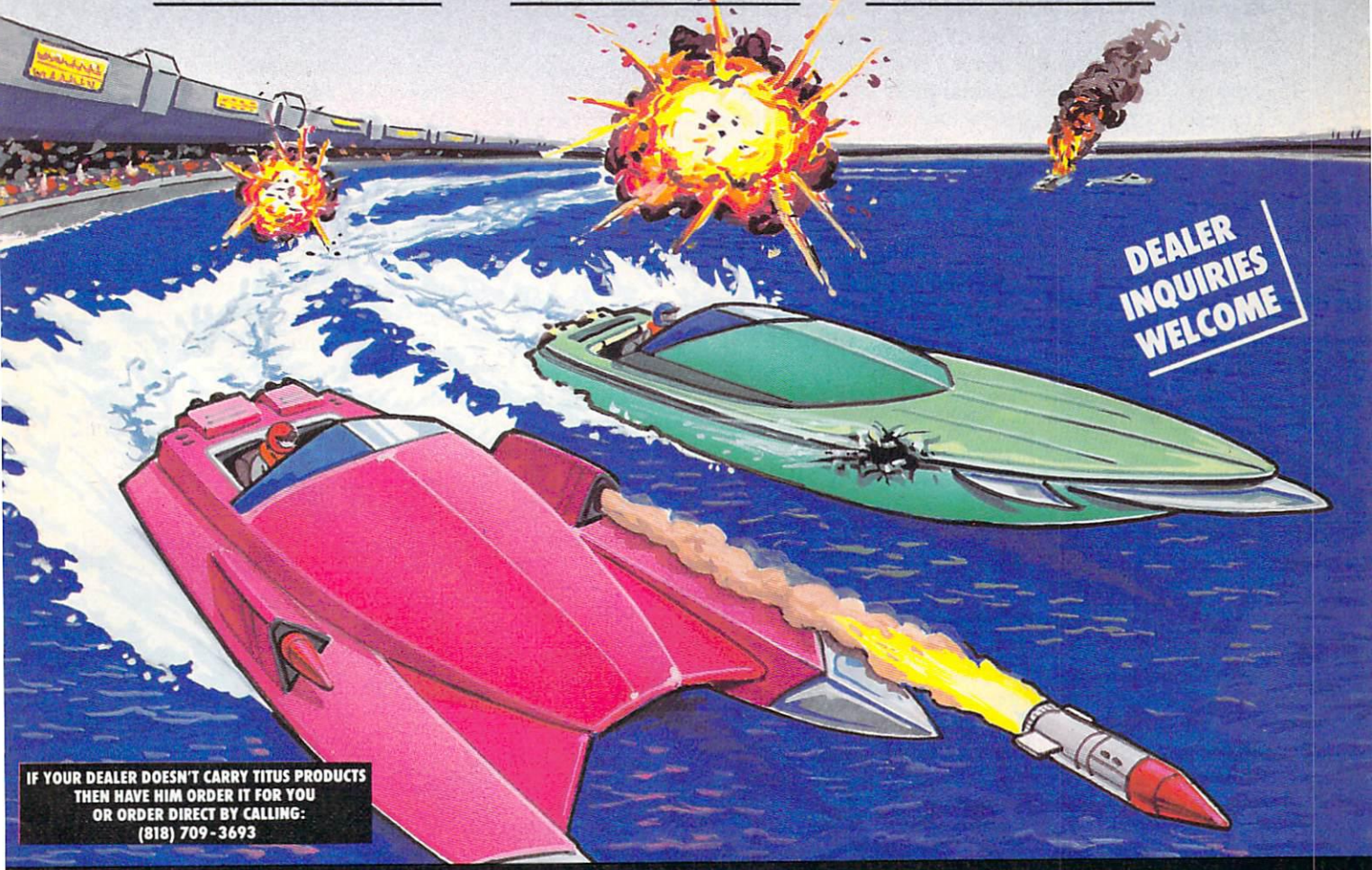
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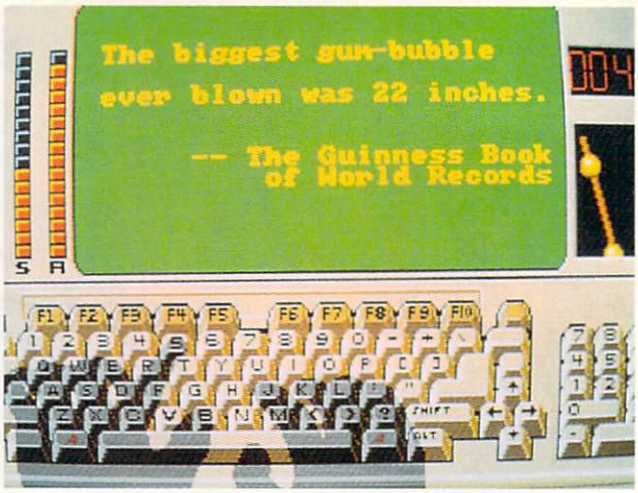
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Mavis Beacon's *arcade drill (left) and Guinness Book quotes help teach typing.* *READER SERVICE NO. 195*

more variety—maybe another arcade game to spice things up. But as it stands, there is more than enough to keep a student from falling asleep. The arcade game is nothing revolutionary in terms of graphics, but that is to be expected. This is an educational program so it can't be *too* much fun.

The drills feature shadow hands that press the proper keys in silhouette on the screen to demonstrate what your fingers are doing. (You're not supposed to be looking at your fingers.) This is one of the best touches, because you can align your fingers on the proper home keys without looking down if you concentrate on the shadow hands. The drill screen also uses a musical metronome to help your rhythm, and a bar graph display that visually demonstrates your current speed, accuracy, and completed work.

After the drills are over, a host of 3-D graphic screens chart your progress. These bar graphs make any improvement on your part quickly evident.

You will be amazed and unnerved by the intelligence of the interface. It guesses when you're getting tired, no doubt by finding the average speed of keystrokes, and changes the type of instruction in order to keep you on the edge of your seat. It can also tell if you're upset or just banging away in frustration. The algorithms for this sort of artificial intelligence have existed for 20 years, but this program and *Chessmaster 2000* represent two of the first attempts of software manufacturers to implement these concepts. Science fiction becomes science fact.

I give high marks to this quality release from The Software Toolworks. It's fun, inventive, and educational. If nothing else, the included documentation on the history of touch typing will hold you enthralled for at least a half an hour. It's a nice bonus on top of what was already a smart purchase.

The Software Toolworks, One Toolworks Plaza, 13557 Ventura Blvd., Sherman Oaks, CA 91423 (phone: 818-907-6789). *—Cleveland M. Blakemore*

GRAPHICS STUDIO

Accolade
Amiga with 512K
Disk; $49.95

Although I normally think of a studio as a skylit room with drafting tables and a variety of protractors and pencils ready at hand, I'll concede at least a part of that vision to Accolade's *Graphics Studio*: all the tools are ready to use, some of them ready in a unique way.

In fact, the emphasis on tools and the ways in which they are used is the distinguishing feature of *Studio,* making it more than a "me-too" painting program and causing us to wonder that it wasn't named Graphics Toolbox.

Pulldown and pushup menus are used for selecting drawing tools, and the menus are keyed with icons that will be familiar to anyone who has used an Amiga painting program—and will lend themselves to instinctive interpretation by those who have not. Pushup menus are new: they reside at the bot-



Graphics Studio *provides a palette of 32 colors, five fill patterns, and drawing tools both common and uncommon.* *READER SERVICE NO. 196*

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for those to whom any waiting state is an interruption of the creative process.

When working in a real studio environment, you may have one or more tools that will be used repeatedly; rather than return them to your toolbox, you'd probably keep them close at hand until the drawing was finished. This is a human factor that received consideration by the designer of *Graphics Studio*. As an example, suppose you go to the Line Draw menu. Clicking on the icon drops down a menu that gives you four choices: straight lines, connected lines, radiating lines, and constrained lines. Select the one with which you wish to work, and notice that that icon now becomes the menu icon.

You deselect by choosing any other tool, but when you're ready to reselect your line tool it is there without the necessity of opening the menu. Click on it once and you're ready to go. Granted, it is a small point in that it will save you only one mouseclick and a few seconds; still, it is indicative of the way *Graphics Studio* has been arranged for user convenience rather than programmer expediency.

riety of line thicknesses for your brush, as well as several brush shapes; there are unconventional "fills" where your outline is filled with the currently selected paint and fills where your outline is filled with horizontal or vertical lines for a more delicate shading effect.

Rotate Colors dips your brush into each color of the palette, in turn, as you're drawing, while Random Colors does the same but in no particular order. Either option adds an op-art look to even simple shapes and figures, and if Color Cycling is selected

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