

for **AMIGA**
.info

**AMIGA
LAPTOP!**

**EXCLUSIVE
FIRST LOOK!**

AUTHORING SYSTEMS:

- ☛ AmigaVision v1.71D
- ☛ CanDo v1.5
- ☛ HyperBook
- ☛ Director v2
- ☛ Foundation

10 New Games

MultiStart II

KwikStart II

MegAChip 2000

SecureKey

Pixound v2.5

Voyager

Pelican Press

PowerPacker Professional

Surface Master

Map Master

Dr. T's KCS v3.5

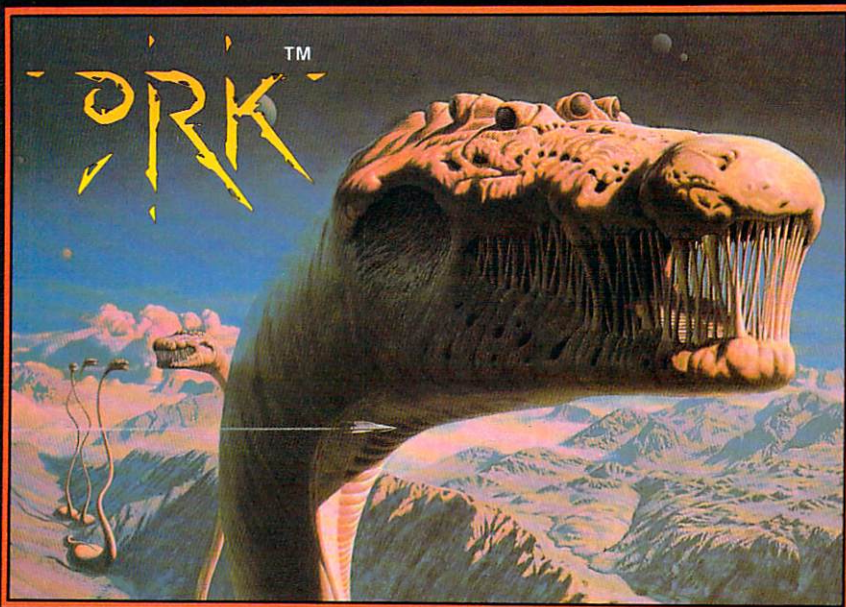
Personal Single Frame Controller

**.info tech support
(FREE inside!)**

**ALSO:
WEIRDWARE!**



#46
January 1992
U.S.A. \$3.95
Canada \$4.50
DISPLAY UNTIL JAN. 21



ORK

Beamed down to the planet Ixion from the Legion Ship, Cisskei, aspiring Captain Ku-Kabul has to face the dangers and tests specifically placed on this planet in order to prove himself worthy of Leadership. Failing any of the tests will end his career as a Legion-Command Officer... permanently!

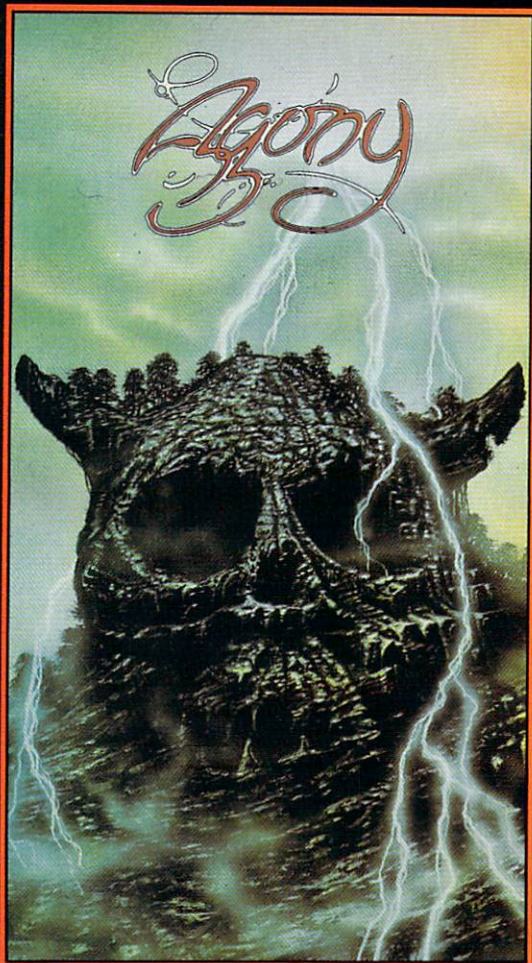
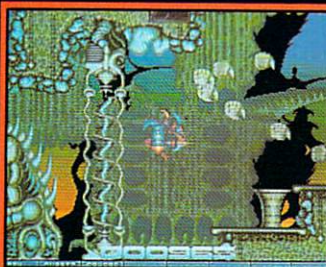
To give him a fighting chance, Ku-Kabul is fitted with twin laser cannons and refuelable jet boosters.

Using brains and brawn he must find, collect and use objects to solve the many perplexing puzzles and defeat the hordes of mighty enemies that infest this deadly arena.

3-layer parallax scrolling, arcade-speed action and powerful FX combine with total-gameplay addiction to bring you the experience that is Ork!

Are you Orkenough?

Screen Shots from the Amiga version.



AGONY

Pit your magical powers against an equal but opposite mystical force. Use your sorcery and fighting skills to battle through six graphically – excellent levels, each infested with hordes of beautifully-animated conjured-up creatures. Pick up potions and spells to help your valiant struggle to find the secret of Cosmic Strength.

Experience four layers of incredibly-smooth parallax scrolling, animated backdrops, a massive play area, hundreds of on-screen colours, unbelievable gameplay and an exorbitant sound track all expertly mixed together and skilfully cast to bring you a spellbinding brew of computer gaming action.

Experience Agony with no pain!

Screen Shots from the Amiga version.



PSYGNOSIS

29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553
Fax: (617) 731-8379



LEANDER

Thanatos lurks in his lair, bathing in the power-giving life-force he is sucking from Princess Lucanna.

Princess Lucanna is dying; Imprisoned in the Sphere of Depletion her strength will soon be gone.

Meanwhile, Leander – Captain Of The Guards – kneels before his master seeking advice. He is told: *The princess is the balance between good and evil, if she dies, good dies and evil shall engulf the land.*

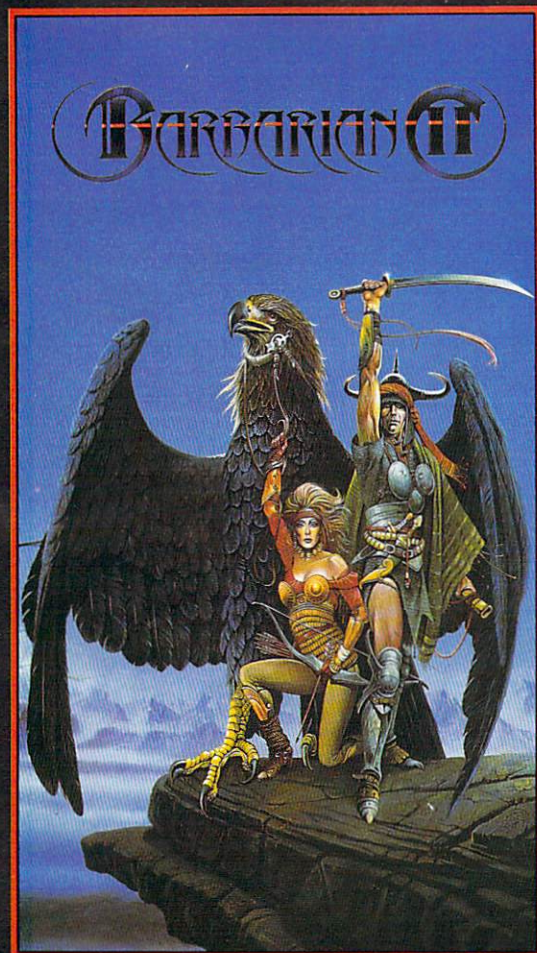
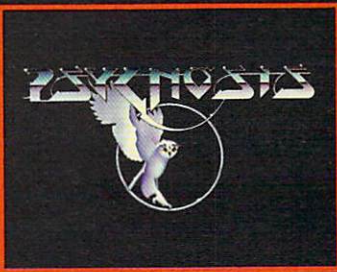
As Thanatos' power grows, the world succumbs to his evil grasp; Leander now has to face and conquer dangers beyond his darkest dreams before he can free the princess and save the land.

*You play the part of the Princess as she hangs around inside the Sphere Of Depletion waiting for Leander to rescue her. Will he make it? Or will you spend the entire game doing nothing but having your life-force sucked?

Leander: Where heroes Sphere to tread!

*Psygnosis reserve the right to amend this storyline.

Screen Shots from the Amiga version.



BARBARIAN II

Necron's back in town and he wants revenge. Only you – in the guise of Hegor the Barbarian – have the courage, strength and stupidity to face the challenge:

It's time once again to don your dented helmet, tie your sweaty breechcloth, sharpen your rusting sword and move your big feet in the direction of danger.

Forests, caves, dungeons, castles and temples await your barbaric exploration, each is infested with deadly inhabitants and devious traps ready to terminate your lowbrow activities.

Featuring 2,000 frames of sprite animation, 32 colours on-screen, parallax scrolling, 6 levels of continuous arcade/adventure action, over 1 megabyte of fully-animated sprites, 50 divergent enemies, Magic & Health Potions to help you on your quest and a plethora of unique weapons to find and use. **Barbarian II** is:

The ultimate in loincloth entertainment

Screen Shots from the Amiga version



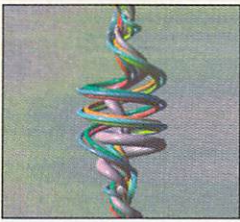
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Issue #46, January 1992



About the cover: The cover illustration this month is a 24 bit 1536 x 960 *Lightwave 3D* rendering of a scene created with several tools including Byte by Byte's *Sculpt 4D*, Axiom's *Pixel 3D 2.0* and Digital Arts' *Apogee 3D Fonts 1*. As always, *.info* is produced and managed entirely with Amigas running off-the-shelf consumer software and peripherals. *.info* was the first magazine in the world produced entirely with personal computers.

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Debuts First Licensed
Third-Party Amiga Computer**

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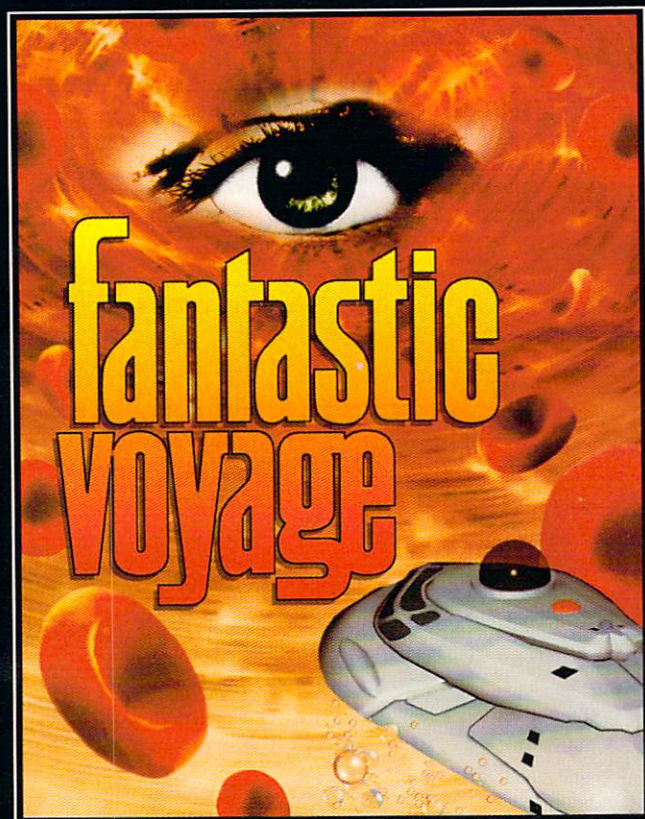
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**A Fantastic and Spectacular Voyage...
Through the Human Body...
Into the Brain.**

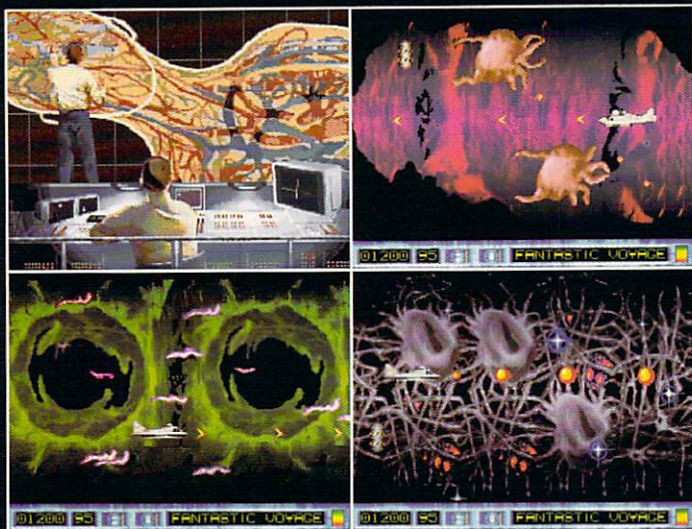


fantastic VOYAGE™

The Computer Game

**A Centaur Software Production
Programmed by Marc Hawlitzeck
Graphics by Fleckenstein Art Studios
Art Direction by Christian F. Laursen
Music by Bjorn A. Lynne
Produced by John Sievers**

**Based upon the film
"Fantastic Voyage"
Academy Award® Winner
1966 Special Visual Effects**



You alone command the experimental submarine Proteus which has been miniaturized and injected into the body of a dying scientist. In order to save his life, you must skillfully navigate your way through a maze of blood vessels to his brain, fighting white blood cells, antibodies and other dangerous hazards every step of the way. The body's powerful immune system challenges you, the foreign invader, the unwelcome intruder who must be destroyed.

Experience awesome music and sound effects, arcade-like 8-way scrolling, multiple skill levels and incredibly detailed animations. Developed to take full advantage of the Amiga, the game features unique "organic" graphics unlike anything you've ever seen



Centaur Software, Inc.

P.O. Box 4400, Redondo Beach, CA 90278
Phone: 213-542-2226 - FAX: 213-542-9998

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Circle #169 on the Reader Service Card

EVERYTHING COSTS MORE

It just seems to be a law of nature - everything always costs more. NewTek recently emphasized this point with a whopping \$900 increase in the retail price of the *Video Toaster*. They're taking a lot of flak for this price jump, but we don't think it's right to be too critical.

For one thing, you've got to consider what the *Toaster* actually does. \$2595 is not an unreasonable price for its capabilities. In fact, lots of people in the pro video, Mac, and IBM worlds didn't believe the *Toaster's* original \$1595 pricetag - they thought it was a joke. So you *could* look at the *Toaster's* original price as a 'thank you for your support' gesture from NewTek, which made sure that Amiga loyalists got their hands on a *Toaster* at a low, low introductory price. And once all the Amiga people had purchased a *Toaster* at a discount, why not jack up the price for the Mac and IBM people? Let's face it, with the prices they're used to paying for hardware and software, they're *still* going to think the *Toaster's* a bargain at \$2495.

NewTek and some other companies have also taken some flak for charging for software upgrades - in NewTek's case, they want \$400 for the latest incarnation of the *Toaster* software. But *Toaster 2.0* is a lot more than just bug fixes. There are new effects and new features galore, none of which was promised to purchasers when they originally picked up their *Toasters* for \$1595. If you look at the new pricing, upgraders are actually getting a \$500 break. The same thing could be said for upgraders who move from *Deluxe Paint III* to *Deluxe Paint IV*. They're getting a lot more functionality, and Electronic Arts is giving a pretty hefty price break to them because they've been past customers.

In general, I think Amiga owners have been a bit spoiled by the bargain basement prices that prevail in the Amiga market. We've all gotten used to getting 'something for nothing.' Sure, there are a few pro Amiga products with pro pricetags, but where else in computing can you find street-price bargains like *Vista Pro* for under \$90? Mac and IBM users are used to

paying \$800 or more for top-of-the-line software titles.

In general, Amiga companies tend to be much smaller and much leaner than companies producing comparable products for the Apple and IBM markets. That's both a blessing and a curse. Amiga companies are usually a lot friendlier to deal with, but because they have much smaller staffs, user support isn't as comprehensive. Amiga companies are also much more imaginative than their more mainstream counterparts. It seems to be a law of corporations that the larger a company gets, the more conservative its outlook and products become. The Amiga marketplace has been blessed with product designers of outstanding vision and, overall, companies that have been as interested in serving the Amiga community as getting rich. One of the prices of this success is having to pay for it.

When you pay higher prices, you get better tech support, improved documentation, and more frequent updates. You also get companies that make a profit and don't go out of business. If the consumer doesn't pay for it all, who will?

Then, too, we've got to remember that the Amiga market deals in smaller volumes than the Mac or IBM markets. Amiga hardware and software developers are competing for slices of a smaller pie. If they can't make money from us, they'll have to veer off into the bigger markets. We're already seeing some Amiga companies subsidizing their Amiga products with versions for Macs and IBMs. Most of these companies tell us that they love the Amiga and want to continue developing products for it. But they won't if they can't make a living at it. They can't afford to. And big companies like *WordPerfect* won't subsidize their Amiga products with profits from elsewhere. Amiga products have to be able to earn their own way.

It's a tough economy out there. We've all got to bite the bullet a bit. That may mean higher prices for Amiga hardware and software. If that's what it takes to help the Amiga survive and thrive, then we're for it.

- Mark & Benn

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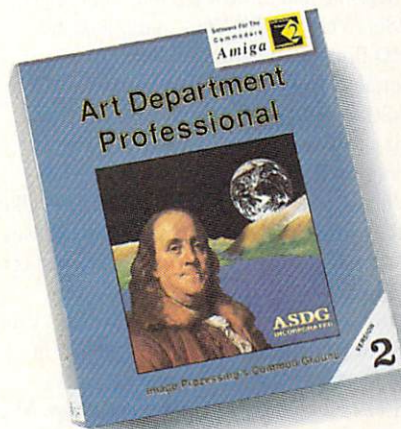
Teach Your Art Department To Read And Write



Think of the opportunities you'd miss if you couldn't read or write.

An imaging professional needs to be fluent in many languages. For instance, you have a picture in IFF which you need to combine with clip art stored in PCX. You need the result in GIF for use on PCs, but you also need it in PostScript to be sent to a service bureau.

Art Department Professional (ADPro) is your short cut to picture format literacy. Using it, you can read and write many important formats. **ADPro's** modular design allows additional formats (or even



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No matter which format you're coming from or going to, **ADPro's** advanced image processing capabilities help you get the best results. And, you can use **ADPro's** comprehensive ARexx interface to batch process hundreds of conversions as easily as one.

If pictures are your words, don't let a language barrier get in your way. Get **Art Department Professional!**

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Circle #107 on the Reader Service Card

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I have owned a Commodore computer of some sort since 1982. All that time, in almost every magazine I read, Commodore has been bashed for, among other things, failure to support their users. Now I want to set the record straight.

On September 20, I 'Powered Up' to an Amiga 3000 with an A1950 color multisync monitor. On September 23, the monitor died. On September 24, I called Commodore Service and explained my dilemma. I was asked for the serial numbers on the products. Inasmuch as the paperwork had not had time to make it to Commodore (it was mailed on the 21st) the service person telephoned my dealer while I remained on the Commodore 800 line.

After getting verification that I had, indeed, purchased the system from an authorized Commodore dealer, I was transferred to a technician to describe the problem more fully. After hearing what the problem consisted of, the technician checked to see if he had another A1950 in stock. Upon finding one, he told me it would be shipped Federal Express and that I would receive it the next day by 10:30 AM.

I thanked him and hung up feeling somewhat incredulous about getting the new monitor the next day. I called my supervisor and requested the next day off: This I had to see for myself! I was still in bed on

September 25 when there was a knock on the front door at 9:25 AM. Upon answering, I found the Federal Express man with my new monitor.

From now on, I will be unable to give credence to any suggestion that Commodore does not support their users. I feel that Commodore has made a commitment to their users and is standing behind it fully.

- Frederick R. Claus, Frankfort, KY

Commodore has improved their service immeasurably since the unlamented early days of the C64, and it is becoming obvious that they are following through on their promises. 'Commodore Express' service is now a matter of policy, they've extended warranties from 90 days to a full year, and they've added more support staff. Instead of running the usual obligatory ".info is Great!" letter this issue, we're going to let yours serve as a "Commodore is Great!" letter. Thanks for letting us know about your good experiences.

- Benn & Mark

Recently I have realized my need for more power and expandability, so I decided to buy an A2000. Then I went shopping and discovered that I could get a 286/16 clone with VGA, a monitor, two HD floppies, a hard drive, a modem, etc. for about \$1300 - \$200 less than a stock A2000 with a 68000 with a maximum of six usable bitplanes and two low-density floppies. I would greatly like to keep my allegiance to Commodore, but an offer like that of the clone-maker's is hard to refuse. As such, my question (and plea) to you is to explain to me why I (a run-of-the-mill wordprocessor, 2D painter, and games user) ought to avoid the realm of MS/DOS in which the rest of the computing world already dwells. It's in your hands now. My willpower is diminishing.

- Chris Swinehart, W. Bethesda, MD

Get a grip on yourself! We all face temptation now and then, but when we do, we chant over and over to ourselves "MS/DOS, Just Say No", and call someone from our support group. Commodore has recently dropped the price of the A2000 below the \$1000 mark, which makes it a bit more attractive, though it is still overpriced for

the market. Commodore is aware of the problem, and is working on delivering more power for a lower price.

In the meantime, even a stock Amiga 500 is, in many ways, superior to the best MS/DOS clone. Consider REAL multitasking, for example, and a windowing environment that doesn't eat up all your memory just to get started. 4096-color HAM displays are much more colorful and realistic than 256-color VGA displays, which often show banding. You don't get four-channel stereo sound on an MS/DOS machine, either. Wordprocessing is an application that is so keyboard-bound that it works much the same on an Amiga, PC clone, or even a C128 - the main consideration is the particular wordprocessing program, not the platform. Remember, power statistics are no good if they don't translate into better utility. And we think the Amiga is easier and more fun to use than a PC clone, no matter what. To us, MS/DOS is only a choice if you absolutely need it for a particular application, or for compatibility with your computers at school or at work.

-Mark & Benn

One question: You used to proudly (and rightly so) announce what software products were used to produce the magazine. Is this a thing of the past? Have you gone the way of all the other magazines and become mass produced by others? Let's not forget our roots!

- Michael R. Eaves, via FAX

Forget our roots! Never! .info is still produced by a handful (we've been called quite a handful more than once) of Amigaphiles and, yes, we do still use off-the-shelf Amiga hardware and software to produce the entire magazine. There are two main reasons we no longer list the products we use: space and change. We would rather use every scrap of available space to give you more timely and useful information. The products we use tend to change as we try out new software and hardware, making it difficult to accurately list every last product we use to produce any given issue.

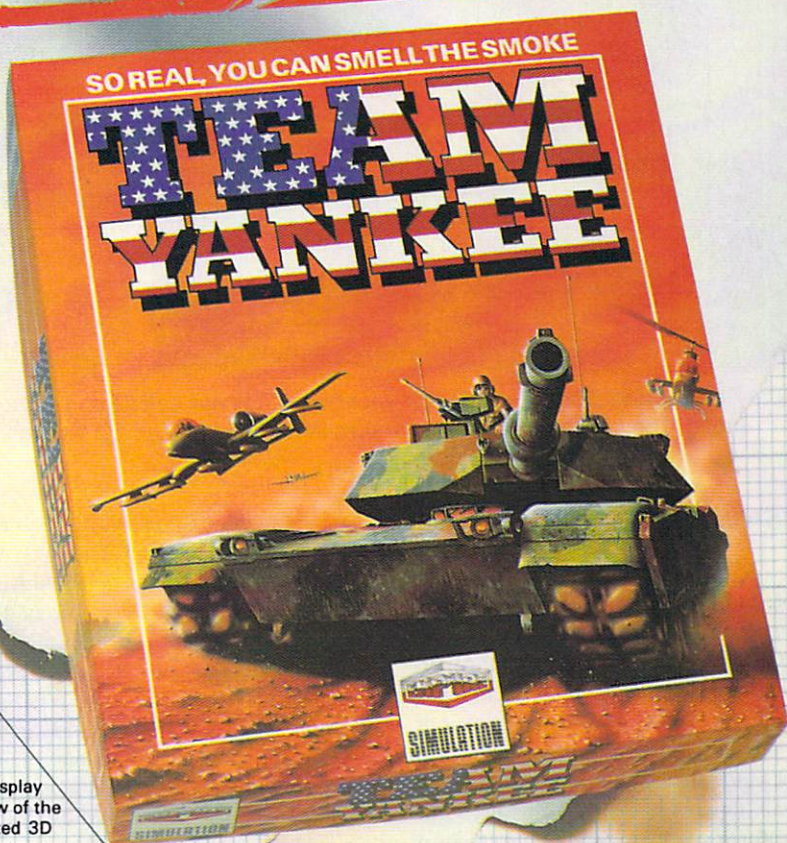
- Benn & Mark

SO REAL YOU CAN SMELL THE SMOKE

THE NO.1 NEW YORK TIMES BESTSELLER

"ROMEO 25 - THIS IS MIKE 77 -
SPOT REPORT - 5 T72 TANKS
MOVING WEST. GRID 190852 -
CONTINUING OVER"

Capt. Sean Bannon snapped his head to the left. There was only one place where the Russians could be, and that was on the hill 2200 metres away. All the training, planning and preparations were over. Team Yankee was about to learn if the team's seventy nine men and twenty five million dollars worth of equipment could do what they were supposed to do.



Team Yankee is designed to test your leadership and tactical skills to the limit. You can display in either "quadrant mode" where all four platoons may be controlled at once



or Full-screen Mode where the display homes in on just one platoon.



You have the flexibility to display either an overhead map view of the surrounding area, a simulated 3D view of the battlefield, or a status screen showing the performance of all vehicles in a platoon. Irrespective of which screen mode you choose during battle, there is a constant column of information to the right of the screen.

To the right of the compasses are five icons which represent the various types of weaponry available to the unit.

- MACHINE GUN - which is always available to the player and has an "infinite" number of rounds.
- SMOKE - a smoke grenade which allows enemy vision to be obscured.
- HEAT - a high explosive anti-tank round
- SABOT - an armor-piercing tungsten shell
- TOW - a high-range anti-tank missile

The major capability on the quadrant map screen is to alter the movement and formation of any platoon. The whole of the map may be viewed at once, or you may zoom into any portion of the battlefield using the icons to the right of the map.



Five major scenarios based on the battles featured in the New York Times No. 1 best seller Team Yankee.



Team Yankee is the definitive action simulation of modern tank warfare. Watch scenarios unfold on 3D battlefields with high definition graphics and keep track of the four tank platoons you control using the unique 4 quadrant display. Defend Hill 214 from Yuri Potecknov's crack tank platoons, attack Objective Link through sniper fire from forests, protect the Langen Gap from an entire Soviet tank battalion at night!

Scroll icon: The four arrows underneath the ETA display allow you to scroll your map in any of the four directions.

Dead Stop icon: This red icon, causes your platoon to come to a dead halt when clicked.

In line - places your vehicles in a line abreast relative to your direction.
Echelon right - places your vehicles on a left to right diagonal relative to your direction.
Column - places your vehicles in a line ahead relative to your direction.

Echelon left - places your vehicles on a right to left diagonal relative to your direction.
Wedge - places your vehicles in a wedge formation.



Engine smoke This will prove very useful in confusing your enemy if you find yourself in a tight corner.

Rotation icon and compass display.

Infra red (or thermal) imaging This feature is very useful for identifying vehicles camouflaged on the edge of forests. Contrary to popular belief the thermal image is green and not red.

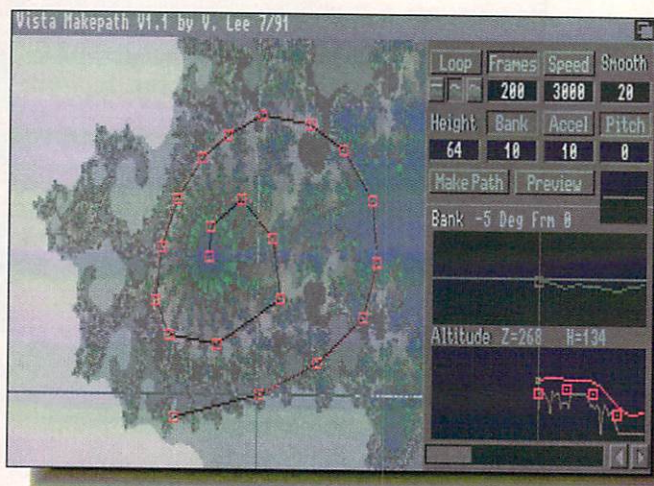
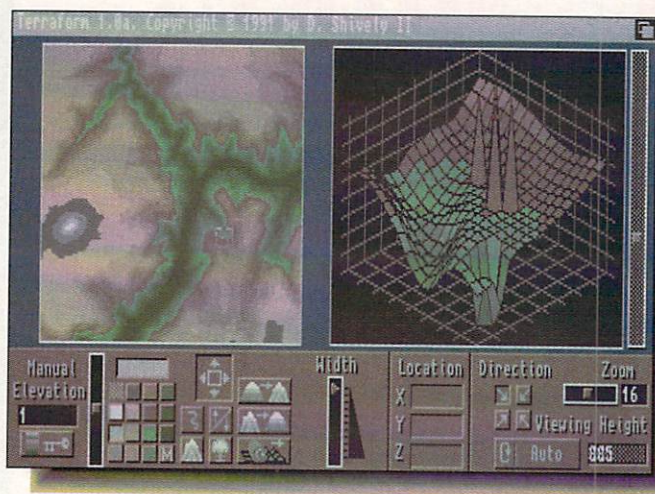
Zoom. When this icon is accessed the central portion of the screen is magnified by a factor of 10.

Laser range finder. The range finder will lock on to a reflective target if the firing cursor is placed directly over the object.



Wide formation icon. This increases the spacing between vehicles in your platoon to 100 metres.
Narrow formation icon. This reduces the inter-vehicle spacing in your platoon to 50 metres.

NEW PRODUCTS



Virtual Reality Laboratories new design-your-own-landmass software, *Terraform* [left] and fly-through animation utility, *MakePath* [right]. They will let you make your own landscape, plot a path through it, and then render the results with *VistaPro*.

PUSH IT, PULL IT, FLY IT

Wonderful as *VistaPro* landscapes are, they're limited to either Digital Elevation Model data or fractal seeds for what they produce, and making animations has not been an easy process. *Virtual Reality Laboratories* has now released a pair of new products to let you design any landscape you want and then plot a fly-through or walk-through as easily as drawing a line. **Terraform** gives you two basic methods of creating landscapes of your own design. In one of the two main windows, you can draw in the larger features of your terrain, with different colors representing different altitudes. In the other window, which uses an isometric view of variable magnification, you can adjust the finer details, pushing and pulling vertices on a grid to form depressions and peaks. There are additional functions for smoothing, roughening, adjusting peaks, and other things for making your landscapes as realistic or fantastical as you want. The interface is much like *VistaPro*'s, so if you know how to use one, it's very easy to learn the other. **MakePath** also shares the consistent look, and by using a simple, highly automated process lets you specify a path through the landscape to follow in generating frames for a fly-through animation. Creating the path is as easy as clicking a mousebutton, though

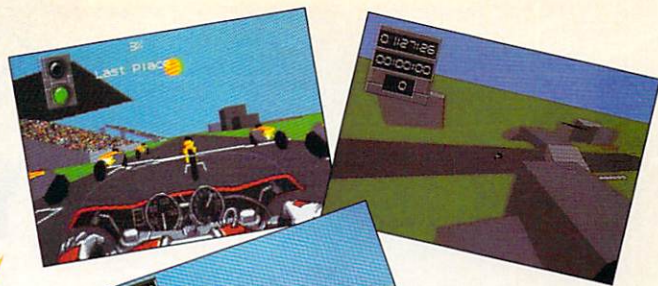
there are additional controls for setting the camera view, height, bank, and so on. One of the niftiest things about *MakePath* is that there are several menu-selectable models for the type of fly-through you want: glider, cruise missile, jet, helicopter, motorcycle, or dune buggy. Taken together, *VistaPro*, *Terraform*, and *MakePath* provide an extraordinary toolchest for making animations. As a sidenote, VRL is also shipping another in their series of DEM disks, this one with Mandelbrot and Julia set images translated into landscape data (they retail at three for \$32). We can hardly wait to fly through them. *Terraform* and *MakePath* retail for \$39.95 each. Virtual Reality Laboratories, 2341 Ganador Court, San Luis Obispo, CA 93401. 805-545-8515. RS #201.

SPEEDING THINGS UP

We have been hearing about the killer new accelerator *Great Valley Products* has been working on, and now they've started shipping it. The **G-Force 040 Board** only works with the A3000 (both standard box and tower models) and provides a 68040 CPU running at 28Mhz, with a throughput of 22MIPS. As far as we know, that's as fast as an Amiga has ever run, though it will get even faster once Motorola starts shipping the 33Mhz version of the '040, which will push the board's performance to better than 23.3MIPS. The board can use up to eight megs of custom onboard 40ns, 32-bit, non-multiplexed DRAM, and Kickstart can be copied into, and accessed from, it, making for terrific performance. You're not limited to just this 8MB, either, since you can add up to 24MB of RAM via these custom SIMM modules. The board requires the 2.0 Kickstart ROM and GVP says it's compatible with all software that will run under 2.0. It is also software switchable back to the A3000's native 68030 mode. All this speed isn't cheap - the bare board lists for \$2799 and 4MB of DRAM goes for \$899. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770. RS #202.

WOW!

New Products now have Reader Service Numbers! If you want more information on a product just look for the RS# at the end of each description, and circle the corresponding RS# on one of the handy Reader Service Cards.



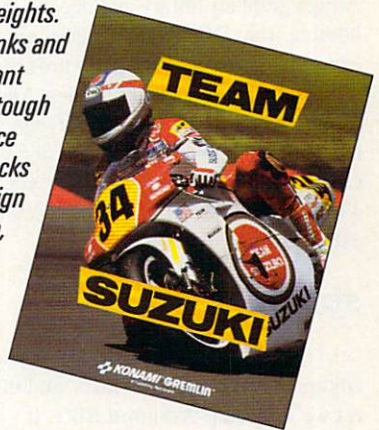
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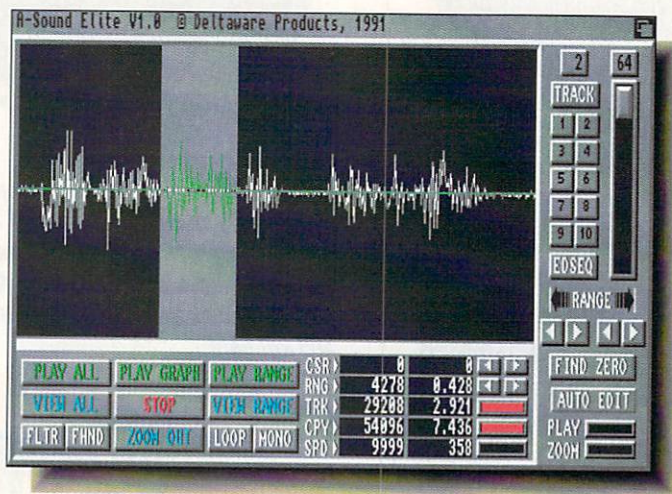
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Circle #116 on the Reader Service Card

NEW PRODUCTS



Editing and adding effects to a quote from Kelly Bundy with Delaware's hot new sound software, *A-Sound Elite*.



POST-IMPRESSIONIST CARD

We are not sure whether it has both its ears, but the newest video display card we've heard about is the **Van Gogh** from *Expansion Systems*. It can display 256 out of a palette of 16 million colors using eight bitplanes. The board will allow using the standard 1Mb Agnus or upgrade to a 2Mb Agnus, and there are sockets on the board for installing up to 2 megs of Chip RAM in 512K increments. In order to get any good out of all this, you will, of course, have to hook up a VGA (which will give you a flicker-less display up to 800 x 600) or Super VGA (display size up to 1024 x 768) monitor. However, *Van Gogh* has its own connector for VGA monitors, so you can still have your regular Amiga monitor hooked up, too. *Van Gogh* is compatible with any software that uses the standard Amiga graphics library and doesn't require booting from DF0:, which means most everything except HAM paint programs like *Digipaint* and a lot of games. Another reason to be excited about *Van Gogh* is that it's priced at \$299.95, making it about the most affordable display enhancer yet. 44862 Osgood Road, Fremont, CA 94539. 510-656-2890. RS #203.

SOUND OFF

There have been a lot of sound editors released over the years, and the latest we've seen is **A-Sound Elite**. It's also one of the most elaborate we've seen. It

supports 8SVX, 16-bit IFF, Sonix, 8- and 16-bit RAW files, and there's also a self-playing format. *A-Sound Elite* lets you load sound files into any of 32 different buffers and you can instantaneously switch from one to another with the click of a mouse-button. Ranges are easily set just by dragging the cursor and there are variable levels of magnification so you can see what you're doing. The software has extensive ARexx support, and there's even a pull-down menu for executing ARexx macros. *A-Sound* can also be used as a front end for digitizing, and supports *PerfectSound* (and compatibles) and *SoundMaster*. The samples you take are only limited by available storage space and there's also provision for recording direct to disk. What we like best, though, are the effects. There are sequenced looping functions that, when taken with some of the filters, echoing, reverb, and other things like merging from track to track, will let you put together some strange and wonderful files. \$129.95 from *Delaware*, 3148 Kingston Road, Suite 202, Box 395, Toronto, ON Canada M1M 1P4. 416-431-2047. RS #204.

SOUNDING GOOD

Remember when we thought the Amiga's sound was the best thing we'd ever heard? Then came CDs, and what we heard was even better, and we started noticing that the Amiga sounded a little flat here and there. Still good, but it could be better. Well, Omega Projects, a British company

came out with **The Sound Enhancer** and it has been getting rave reviews in the European press. Now *Moonlighter Software Development* has released *The Sound Enhancer* here in the States. The unit is connected between the sound jacks on the Amiga and your stereo system. (You could connect it to your monitor, but what would be the point?) It's powered from the serial port (pass-through provided) and there are controls for on/off and level-adjustment. Moonlighter says it uses an equalizer circuit which is the inverse of the Amiga's and restores lost harmonics. The end result is sound that has to be heard to be believed. We thought it was just a marketing gimmick, but the difference really is astounding. Cost is \$89.95. 3208-C East Colonial Drive, Suite 204, Orlando, FL 32803. 407-628-3005. RS #205.

NOT A PENGUIN

Opus doesn't have a big beak or wear a bow tie, but it is the latest in a long line of Amiga directory utilities. If the Workbench isn't powerful enough for you, and the CLI too aggravating to use, *Opus* offers both power and ease of use for about any operation you want to perform. It allows up to 84 configurable buttons that can be programmed to do your most frequent tasks (they can also be assigned hotkeys), and it will also display fonts, show graphics and brushes, play anims and sound files, run programs with the click of a mousebutton. Among the other items are online help, error code explanations, and a particularly useful CPU usage monitor. Since it comes from the same publisher as *CanDo*, it also has a built-in deckrunner. \$59.95 from *INOVAtrionics*, 8499 Greenville Ave., #209B, Dallas, TX 75231. 214-340-4991. RS #206.

TYRANNO-WARE

ARexx script commands for NewTek's *Toaster* are obscure at best, and there's now a tool to make the scripting process a little easier. **TRexx Professional** has an Intuition-based interface, editing functions (including Undo), looping,

BACK WITH A VENGEANCE

POPULOUS II

THE TRIALS OF THE OLYMPIAN GODS

WIELD MORE POWER. WREAK MORE HAVOC.
30 NEW POWERS OF ANIMATED DESTRUCTION.



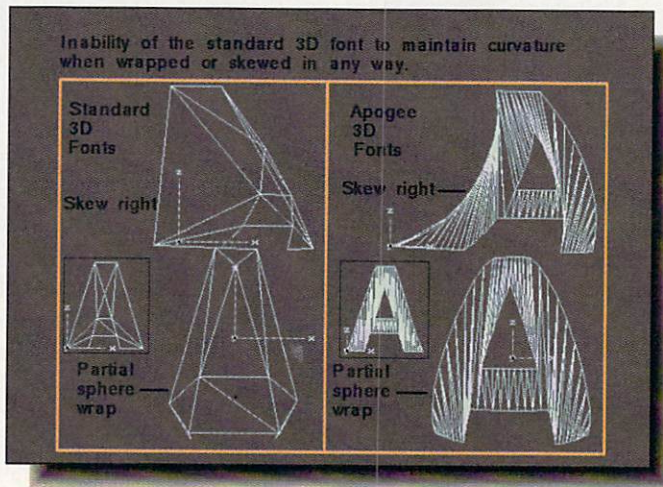
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Circle #113 on the Reader Service Card

NEW PRODUCTS



This demo screen from Digital Arts' *Apogee 3D Fonts* shows how the characters are constructed to allow flexibility.



accurate time delays, script linking, and, best of all, the ability to send AmigaDOS commands from within a Toaster AReXX script. There's also what the developer calls an "English Equivalency List" which translates things like "FMLD,10" into human-understandable "Load frame 10: Star Pic". Since the scripts can be run from within *TRexx*, debugging is a matter of REMming out lines until you find the offending one. \$79.95 from (and you have to love the name) *KludgeCode Software*, PO Box 1163, Holland, MI 49422. 616-786-0740. RS #207.

EXTERMINATOR

There is a new debugging tool for users of *SAS/C*. In addition to stepping through code, **MultiTrace 1.0** is designed for tracking how a program behaves in the Amiga's multitasking environment. It operates either under program control or via an Intuition interface and can help you track down those uncooperative elements that make our computing lives a living hell. Pricing was unavailable at presstime. *Altosirma Software*, 36M Ridge Road, Greenbelt, MD 20770. RS #212.

FONTS IN 3D

Some of the best ready-to-render 3D fonts we've seen lately are being released by *Digital Arts*. The characters are designed with a different approach than most, with the vertices placed very densely

and in such a way that the characters maintain their basic shape and recognizability when they're manipulated with an object editor. The dense packing of the vertices also makes it possible to enlarge the fonts with minimal loss of curvature; in other words, the curves don't break down into facets as quickly. The typefaces in the first set are industry-standard Times, Helvetica, and Courier. Cost of the **Apogee 3D Fonts 1** package is \$29.95, and you can specify what format (*Sculpt*, *LightWave*, *Imagine*, etc.) you want. *Digital Arts*, 20515 SW 114 Ct., Miami, FL 33189. 305-378-8734. RS #210.

IDE CONTROL

Continuing their tradition of bringing out low-cost Amiga hardware, *Expansion Systems* has come out with a new line of IDE-type hard drive controllers for the A500, A2000, and even the A1000. The **DataFlyer IDE** series will let you plug in a standard, relatively low-cost IBM-type hard drive and also has a spot to plug in one of *Expansion Systems'* *DataFlyer RAM* cards (\$119.95), which provide sockets for up to 8 megs of RAM (256x4 SIMM modules). There are two basic models: the *DataFlyer IDE* will handle only IDE drives, while the *DataFlyer IDE/SCSI* will control either IDE or SCSI drives. Prices vary according to machine, but start at an incredibly low \$89.95 for the A2000 *DataFlyer IDE*. (Okay, okay. Here's the whole rundown: *DataFlyer IDE* - A500,

\$179.95; A1000, \$189.95 / *DataFlyer IDE/SCSI* - A500, \$239.95; A1000, \$249.95; A2000, \$159.95). The models for the A2000 are cards only, while those for the A500 and A1000 are boxes, which accounts for the difference in price. Still, if you're looking for an economical way to expand your system, these are well worth checking out. 44862 Osgood Road, Fremont, CA 94539. 510-656-2890. RS #208.

STEREO BIBLE STUDY

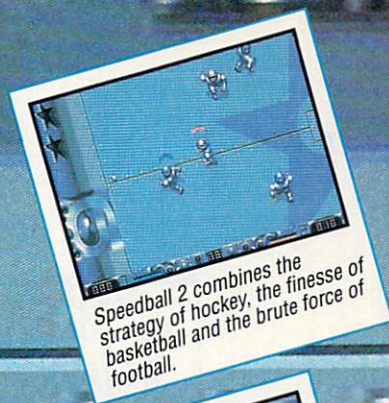
There are two new Bible study packages shipping. The first is from *SOG-WAP* and manages to compress the entire Bible onto two floppies. A third disk contains a 700,000+ reference concordance. **Bible Search** has options to search by phrase, word, or multiple word and also includes logical operators. The text is available in King James or New International Version editions. Retail is "under \$100". 115 Belmont Road, Decatur, IN 46733. 219-724-3900. RS #217.

T-N-T is a two disk set of the King James version of the New Testament, with search and print routines. It also has a list of each word and how many times it occurs in the texts. There are two separate modules for searching and reading, and you can drop bookmarks to hold your place. \$39.95 from *Shocking Software*, 3535 N. Nevada, Chandler, AZ 85225. RS #211.

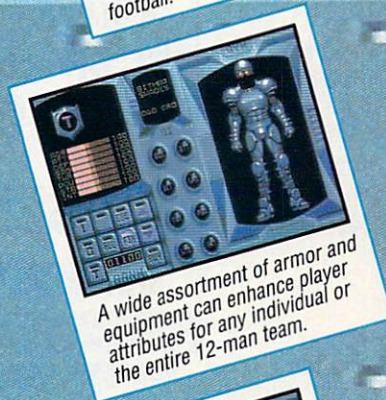
FLOPTICAL

The first high-capacity floptical drive system we've seen for the Amiga is shipping from *TTR Development*. Floptical drives use a combination of optical tracking and conventional magnetic storage to cram 20Mb of data onto a single 3.5" disk. *TTR's Diamond Store 20* system uses an *Insite 1325VM* drive in a slimline case (it's also available in an internal model). The drive does require special disks, which run about \$25 each, though that price will probably be dropping. The drive can also read and write standard Amiga floppies, making it even more versatile. The drive is a SCSI device, which means you'll want to make sure it works with your controller; so

Welcome to the Terror Dome.



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Welcome to the Dome Rookie.

Available Fall 1991 for
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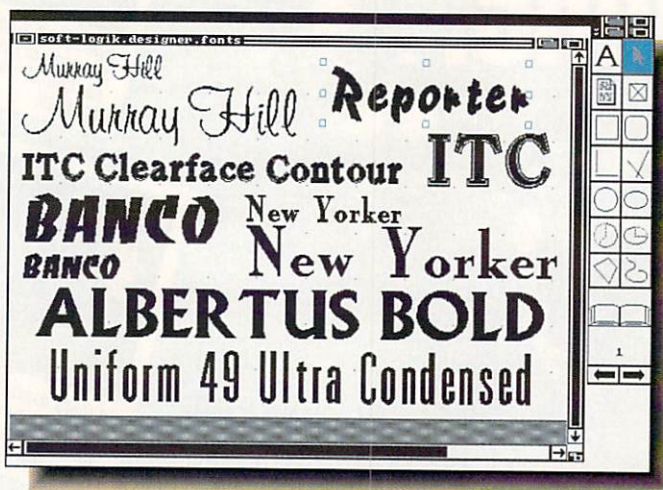
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NEW PRODUCTS



Soft-Logik brings PostScript Type 1 and 3 fonts to the Amiga from the Mac community's Image Club.



far, it definitely works with the A2091, 2A3000, ICD, IVS *Grandslam Pro*, GVP *Series II*, and others are being added to the list continually. By the way, TTR tells us that the *Diamond Store 20* is compatible with *AMax II*, and it could also be used with MS/DOS. The external model retails for \$799.95 and the internal for \$599.95. 6701 Seybold Road, Madison, WI 53719. 608-277-8071. RS #213.

TINY DRIVE

If you're looking for an external floppy drive and don't have much room to put one, check out *Roctec's RocLite*. It's only 3/4" high and not much longer or wider than the disk itself. It's available in two colors, beige to match the Amiga and black to match CDTV. In fact, this is the first external drive we've seen aimed at the CDTV market. Retail price is \$130 (black) \$120 (beige). 170 Knowles Drive, Suite 202, Los Gatos, CA 95030. 408-379-1713. RS #214.

NEW PAGESTREAM FONTS

If you're familiar with desktop publishing on the Mac, you probably know about Image Club's enormous collection of PostScript fonts. *Soft-Logik* has licensed the entire 600 fonts and has started releasing them in packages to use with PageStream specifically, though the Type 1 fonts could also be used with other PostScript applica-

tions. The first four bundles of the *Soft-Logik Typeface Library* are **Newsletter Fonts** (8 typefaces, \$99.95), **Starter Fonts** (8 typefaces, \$99.95), **Classic Fonts** (16 typefaces, \$199.95), and **Designer Fonts** (16 typefaces, \$199.95). If you're interested in particular fonts from the Image Club collection that aren't in these first bundles, *Soft-Logik* has stated that they will do custom packages for you; contact the company directly for more information.

Fonts aren't the only things *Soft-Logik* has been working on. The main thrust of their development seems to be integrating their products into a more complete publishing system. The glue holding it together is **HotLinks**, a standalone data exchange program that will coordinate moving text and images to and from *PageStream* to the new **Bit-Map Editor (BME)** and **PageLiner** text editor. The *BME* can load IFF or GIF files (or they can be loaded into *PageStream* and then exported to *BME* via *HotLinks*) displaying them in 15-shade greyscale, and provides basic graphic editing tools such as cropping, cut/paste, fill, and so on. Even though the editing is done on the greyscale image, the images retain their full range of color, whether it's a simple 16-color *DPaint* sketch or a 32-bit CMYK file. *PageLiner* is a general-purpose text editor (spell-checking included) for importing existing text or creating your own. Both *BME* and *PageLiner* are designed for use with *HotLinks*, which will automatically insert the graphics and text

into a *PageStream* document. The upshot of all this is that these three new products make living with *PageStream* much more convenient and are also useful on their own. *Soft-Logik* tells us that *HotLinks* support is currently being considered by several other software publishers. This trio of programs retails for \$99.95. PO Box 290070, St. Louis, MO 63129. 314-894-8608. RS #209.

IMAGE TOWN

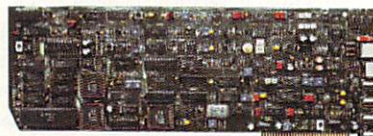
Texture City is a group of Amiga artists and videographers, including Victor Osaka, who we profiled back in the February '91 issue. The newly-formed company is releasing a series of disks containing texture images of everything from animal skins to hand-blown glass to metal. All of the images were processed in 24 bits and are in severe overscan. They have also been run through waveform and vectorscope to make sure the colors will be right for video use. There are five packages in the **True-Color** library so far, with the first three containing 40 images in 24-bit IFF, DCTV, or HAM formats. The other two packages have 15 images in 24-bit IFF only. Prices range from \$149.95 to \$299.95. 3215 Overland Avenue, Suite 6167, Los Angeles, CA 90034. 213-836-9224. RS #215.

THE SAGA CONTINUES...

Addison-Wesley has released the Third Edition of the **Amiga ROM Kernel Reference Manual: Devices**. The book's 582 pages cover every last detail of Amiga devices and how to program for them under 2.0. In addition to information on trackdisk, keyboard, console, the enhanced clipboard, and so on, there's a new section on the SCSI device. There's also a full listing of the IFF file format. Cover price is \$28.95 and it's on the shelves in bookstores everywhere. Addison-Wesley, Reading, MA 01867. 617-944-3700. RS #216.



Get Wild And Crazy With Your Toaster.

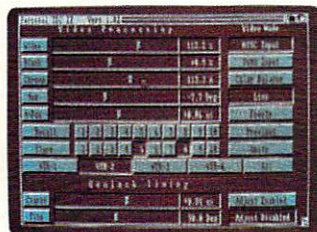


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N E W S & V I E W S



PIRACY ALERT!

We have been notified that the Workbench baseball game *TinyBall*, which Jeff Lowenthal reported on in his Public Domain column in *.info* #45, is not a public domain program. It was originally distributed on *AmigaWorld Toolchest #6*, disk #2, and is still available from them. The copy which appears on the TBAG #54 disk allegedly had its copyright notice modified by a hacker group called 'Testament.' We apologize to *Amiga World* and to *TinyBall's* author, Jim Webster, and encourage our readers to erase any illegitimate copies they may have obtained of this program. If you want a copy of *TinyBall*, we suggest you purchase the appropriate *Toolchest* disk set from *AmigaWorld*.

CABLE AMIGA

The Nickelodeon cable TV network tells us they're launching a new gameshow called Nickelodeon Arcade. The high point of the game is the Interactive Bonus Round, where contestants enter an Amiga-generated interactive virtual reality game. The system uses nine accelerated Amigas to generate the realtime virtual reality, as well as produce sound effects and keep track of scores. Nickelodeon is producing 42 episodes initially. Check your local listings for times.

BRODERBUND & MAXIS

Broderbund Software has announced that they're going public. This comes after a proposed merger with Sierra fell through last year. The initial stock offering of 3,257,184 shares will sell at an estimated \$9.50 to \$11 per share. The company has also announced a renewal of their affiliated label agreement with Maxis to run through February of 1993. Maxis has also achieved an extraordinary milestone in selling the one millionth copy of *SimCity*. The sales break down to 400,000 in the U.S. and Canada, 200,000 in Europe, Japan, and Brazil, and 500,000 cartridges for the Super

NES in Japan. That's a lot of games, and Maxis will be selling even more: they've just licensed *SimCity* to be ported to Unix/X-Windows, making it one of only a handful of entertainment titles brought to Unix.

ANNUAL REPORT

Commodore has released its Annual Report for 1991. We told you most of the financial results last issue, but we've gleaned a few more tidbits of interesting information from this official version. Working capital is listed at \$256 million, with shareholder equity at \$290 million, up from \$253 million in 1990. The company spent \$28 million in capital improvements, including new equipment for the Hong Kong and semiconductor factories, support equipment for R&D, building a new plant in Germany, and buying a new company plane. Amiga sales have officially passed the 2 million mark, and the report notes that the greatest significance is that this happened only one year after the one-million mark. Some of the places Commodore cites Amigas being used for information displays are Boston's Logan Airport, Scandinavian Airlines in Stockholm, Paris' Le Printemps department store, the 1990 World Equestrian Games in Stockholm, the 1991 International Ice Hockey Championship in Finland, and the European Soccer Championship in Poland. Commodore also released nine new IBM-compatible models, including 286 and 386SX notebooks, 386DX and 486DX desktops, and a 486DX tower model. Numbers for C64 sales are still surprising, with an installed base of 12 million units, more than 10,000 software titles, and over 800,000 new C64s sold in 1991. No sales figures were reported for CDTV (it really hadn't been out long enough to be included), though there's an interesting statement that there are plans to "introduce a new video card that will substantially enhance the color capability of CDTV to over 4 million colors" in 1992.

NEW EA VENTURE

A new company called SMSG, Inc. has been formed by Electronic Arts, Time Warner, and venture capital firm Kleiner Perkins Caulfield & Byers. The

stated aim of the new corporation is to develop and exploit the interactive multimedia field. EA's Trip Hawkins will head the firm as well as remaining at the helm of EA.

FUN STUFF

There's far too little whimsy in the world today, but we ran across a couple of catalogs that will put some fun back in your life. They have absolutely nothing to do with the Amiga or any other computer, though some of the items in them could be used to adorn your machine and give you a few yuks during those long downloads. Both catalogs have the things we baby boomers remember fondly, mostly because our mothers hated them so much.

The Archie McPhee catalog is a compendium of such things as rubber chickens, glow-in-the-dark squids, rhinestoned sunglasses, pocket protectors (our favorite reads "Glutinous with Self-Approbation"), potato phones, rubber innards, fake frogs, hologram eyeball keychains, and all the other absolutely useless stuff we love to surround ourselves with. Their prices are more than reasonable and you can get a catalog for free by calling 206-782-2344 or writing to PO Box 30852, Seattle, WA 98103.

We remember The Johnson Smith Company from the ads they used to run in comic books. If you wanted a pair of x-ray glasses, a luminous crucifix, crystal-growing kit, or garlic chewing gum, that's where you ordered them. The catalog has lots more stuff than the comic book ads, and the paper's a lot slicker, too. Some of the items high on our wish list include the battery-powered disembodied hand, light-up bow tie, shrunken head, plastic dog-doo, round playing cards, and a ventriloquist's dummy. However, the one thing everyone will want from this catalog is the \$11.98 bag of all-time classic tricks, which includes (among other things) a whoopee cushion, x-ray glasses, can of snakes, magic relighting candles, and a joy buzzer. No one should be without these basic necessities. Write for the Johnson Smith catalog at 4514 19th St. Court East, PO Box 25500, Bradenton, FL 34206 or call 813-747-2356.

.info UPDATE

VIDEO DOOHICKEY SOURCE

✓ We told you about Allen Avionics' *Video Delay Line* and its uses with the *Toaster* in the November issue, and now we've received a new catalog from them. If you need such video esoterica as filters, hum eliminators, isolation transformers, digital delay lines, and other stuff we can't even begin to fathom the uses for, you'll certainly want to get a copy of the brochure. Contact Allen Avionics at 224 E. Second St., Mineola, NY 11501. 514-248-8080.

CDTV \$ DROP

✓ Commodore has announced a drop in the retail price for CDTV units. The new price is \$799, a reduction of \$200. It's interesting to note that the reduction coincides, more or less, with the announced shipping date for Magnavox's CD-I machine, which has a 'suggested retail price' of \$1499, though we've heard that it hit the streets in the L.A. area at \$899. Looks like the multimedia wars are heating up.

NEWTEK \$ HIKE

✓ NewTek has raised the price of the *Toaster* to \$2495 (a \$900 increase) and the workstation version has been jacked up to \$4595. The higher prices do include the new 2.0 version of the *Toaster* software, which comes on 15 floppies. 215 East 8th Street, Topeka, KS 66603. 913-354-1146.

NEW VERSIONS

✓ New Horizons is shipping version 3.2 of *ProWrite*. Most prominent among the new features is direct PostScript support, including the ability to save PostScript output to a file so you can take it to a service bureau if you don't happen to have a PostScript printer. Other upgrades

include automatic saves, more key equivalents, draggable requesters, customizable macro menu, and, as the saying goes, many more. The upgrade is available for \$20 for 3.0 and above, \$60 if you're coming up from 2.0, and \$75 from 1.0. Registered owners will automatically be notified of the upgrade (yet another reason to send in those cards!). PO Box 43167, Austin, TX 78745. 512-328-6650.

✓ Activa has added morphing, keyframe animation, and support for 24-bit textures to the nearly completed version 1.4 of *Real3D*. Stay tuned for more update information.

✓ There are loads of improvements in version 2.0 of Megagem's *ScapeMaker*, used for creating DEM files from IFF images for rendering in *VistaPro* or *Scenery Animator*. Besides ARexx support, the software now has a smoothing function and visual display

of both the 'scape grabber' window and the height value for points in the IFF image. The niftiest new thing, though, is the ability to add one image to another; for example, you could load in a landscape from *VistaPro* (which *ScapeMaker* can do directly) and then add your face to it - you could literally make yourself The Great Stoneface. Price for 2.0 is \$39.95 and registered owners of 1.0 can upgrade for \$10. 1903 Adria, Santa Maria, CA 93454. 805-349-1104.

NEW ADDRESS

✓ Broderbund is moving a little way up the road in Marin County. As they put it, about 2 1/2 inches on the map. Their new address is 500 Redwood Blvd., PO Box 6121, Novato, CA 94948. The phone numbers are 415-382-4400 voice, 415-382-4671 fax.

BAD CODE

✓ It seems that an error cropped up in the printing of Dan Barrett's 'UNIX Part II' article in the November '91 edition of .info technical support. The sidebar containing the C program had its last two lines cut off. The full program is printed here as it should have appeared:

```
/* Given a filename as argv[1], print the name of the owner. */
#include <stdio.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <pwd.h>
main(int argc, char *argv[])
{
    struct stat info;      /* A buffer for file information. */
    struct passwd *pw;     /* Pointer to to user information. */
    if (argc != 2)
        fprintf(stderr, "Usage: %s filename", argv[0]);
    else if (stat(argv[1], &info) < 0)
        fprintf(stderr, "File %s does not exist.", argv[1]);
    else if ((pw = getpwuid(info.st_uid)) == NULL)
        fprintf(stderr, "I can't find the owner's name!");
    else
        printf("The owner of file %s is named %s.",
            argv[1], pw->pw_name);
}
```

Cooking, Communicating, and Connecting



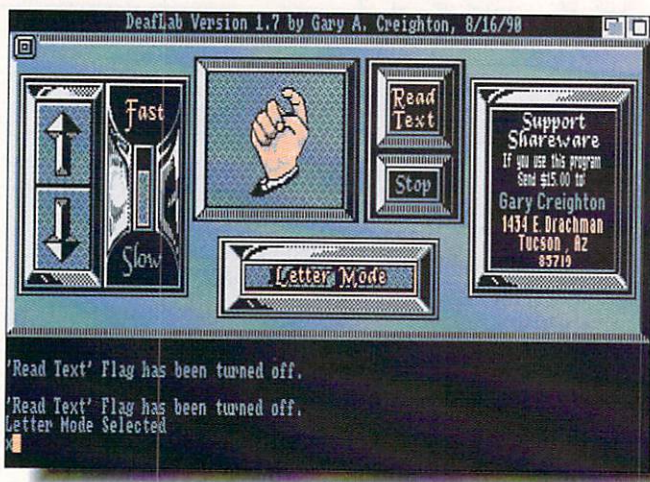
This month we again explore PD/Shareware programs, and remind you that they are available from a variety of suppliers, including disk distributors and online services.

Bon Appetit [GEnie #12483]

Bon Appetit is a recipe program, one virtue of which is the ability to search through a database for dishes using specific ingredients, or by keywords. You can print out your selected recipe, leaving your Amiga in the comparative safety of another room. This program is simple, and it works. As with any database, the drawback is that you must enter the data before you can use it (a great argument for OCR scanning). Or you might do as the author suggests and get involved in the FIDOnet cooking "echo" where you can get recipes from all over the world. Then you could capture them in your buffer and insert into your database. (Let's see, what are they eating these days in Kamloops, British Columbia? Or Bear Paw?) *Bon Appetit* comes with a few dishes entered already, and more are available if you register.

DeafLab 1.7 [Sept91FAUG/Premier]

Last month I began writing about disks assembled by user groups. This time, I'd like to tell you about a special program on the First Amiga User Group (FAUG) disk for Sept. 1991, available nationally from Premier Software. *DeafLab 1.7* (shown) translates English letters into the hand signs used by the hearing impaired. This allows a person who doesn't sign to communicate with a deaf person who does. Surprisingly, author Gary Creighton (who isn't deaf) notes that some deaf people are fluent in sign language, but have trouble with text; thus this program. *DeafLab* can also help you learn to sign. The speed of translation is variable to allow for different "reading" speeds. Later versions will implement the



Gary Creighton's
DeafLab,
on FAUG
Sept. '91

conversion of text files into sign language, with the program "reading" the file to the viewer. Version 1.7 has the file requester for this function, but it isn't implemented yet. As it stands, *DeafLab* is a unique use of the Amiga, and it's a pleasure to write about a program with the potential to put the machine to worthwhile use. Bravo! Also on this disk are *SuperDuper* (a great copier-see .info #42), *Browser* (the "programmer's Workbench - another winner), *NewList* (a replacement for 'list' with many, many enhancements, *Missile Command*, *SuperView 3.1*, and more. This is a really great collection of programs!

Aladdin [GEnie Aladdin RT]

The GEnie online service has long needed a good front end to make using it easier, and now we have it. *Aladdin* is a full-featured communications program dedicated to this service, available to you free in the Aladdin RoundTable, which also includes other files and messages related to the program. You customize *Aladdin* to fit your use of GEnie, including access number and password for automatic logon, navigation to your favorite roundtables, etc. All this takes a little while, but you'll be rewarded with more efficient operation once online. Downloads default to the efficient ZModem batch protocol, and are

effortless. GE Mail is made easier too, a much-needed improvement. *Aladdin* can be configured to automatically check for and retrieve mail if you have any. Other options include checking for new uploads in the libraries of your choice, with automatic saving to disk of descriptions. *Aladdin* keeps track of your last access so it knows what's new to you. Be sure to configure this part of the program. I didn't, and was rewarded with a 500K download of file specifications which I couldn't seem to stop, because the "last access" date defaults to 1980! The 88-page manual is quite complete, and there's a short "Quick Start" version to get you up and running. A hard drive is recommended, though I used three floppies without problems. If you're on GEnie, you'll want to test drive *Aladdin*. And the price is right.

SOURCES

GEnie Online Services. Call 800-638-9636 for signup information.

Premier Software, PO Box 3782, Redwood City CA 94064, 415-593-1207.

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Changing Brains with a Simple Switch



This project started out simply enough when C.A.T.S. announced that a limited number of Kickstart 2.04 ROMs were available to developers. I promptly ordered one only to be completely taken aback when the ROM actually arrived in less than a fortnight. At this point I was faced with the choice of replacing my Kickstart 1.3 ROM and upgrading immediately to AmigaDOS 2.0 or continuing to use the software method of running Kickstart 2.04 from RAM. In view of the inevitable compatibility problems with the new operating system and some old essential software, I was reluctant to make the change permanent.

Since it is against my instincts to leave a functional piece of hardware lying idle, even if it is merely a half megabyte ROM chip, I cast about for an alternate solution. I recollected that several Kickstart ROM switching boards had been kicking about for at about a year or so, although I had not paid too much attention to them. Now that an actual need for the things has finally surfaced, it seemed like a good time to take a close look at these simple devices. Some intensive thumbing through Amiga news media rapidly located two suppliers of the products in question - perfect for a quick comparative review. Unfortunately, only DKB Software actually provided samples of their products for review. On the other hand, DKB Software provided more than enough gadgets to fill this column.

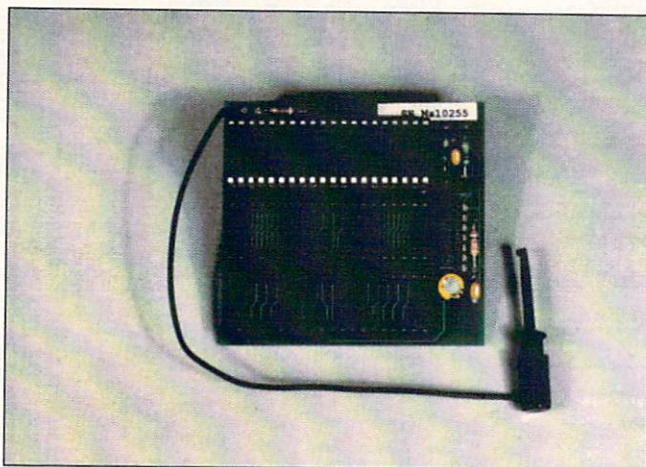
MultiStart II



\$99.95

DKB Software

50240 W. Pontiac Trail
Wixom MI 48393
313-960-8750



MultiStart II
with
Kickstart 2.04
installed.

MultiStart II

Installation of this 2 1/2 inch square circuit board is simple enough; just yank the existing Kickstart ROM from your Amiga 500 or 2000 and plug the board in its place. A short length of wire terminated by a small spring-loaded test clip, is then connected to pin 41 on the Gary chip in the Amiga 2000 or to pin 11 on the Paula chip in the Amiga 500. You also set a jumper on the *MultiStart II* to tell it which computer you have. The ROM chips are then installed in the appropriate sockets, the computer is closed up, and you're back in business. The hardest part of the entire operation is opening up the computer in the first place. In the Amiga 2000 you have to remove the power supply and disk drive assembly to gain access to the ROM. In the Amiga 500 you need a torx screwdriver, or a flat screwdriver with an 1/8th inch blade, to open the case.

MultiStart II is just slightly larger than the combined dimensions of its three 40-pin ROM sockets. A second on-board jumper lets you choose between the ROM in the center socket or one of the two outboard sockets as the default ROM when the computer is powered up. A third jumper determines which of the outboard sockets can be selected from the keyboard. Keyboard selection between the two ROMs is accomplished by holding down the Control-Amiga-Amiga keys for five seconds when

you reboot. This 'soft switch' gives you access only to two of the ROMs. If you need access to the ROM in the third socket, you will have to wire an external single-pole double-throw toggle switch in place of the outboard socket selection jumper. By routing the wires so the switch can be accessed outside of the computer, you will be able to choose which of the two outboard ROMs will soft selected. You will have to provide your own switch.

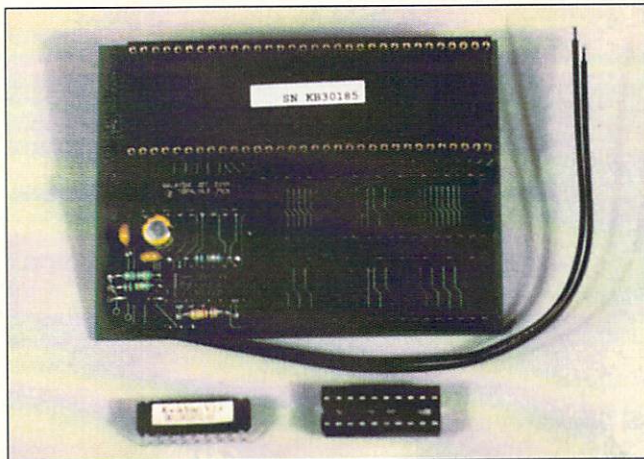
The *MultiStart II* circuit board overlaps the 68000 microprocessor about one-eighth of an inch, which would interfere with the installation of any plug-in products that use the microprocessor socket, such as ICD's *AdSpeed* or a *CSA Mega-Midget* board. If you are only using two ROM chips in your system, the conflict could be resolved by hacksawing away half of the offending socket. A cursory examination of *MultiStart II* indicates that this would work as long as you do not try to access the missing socket. Of course, this activity would tend to violate any warranties.

Selecting the Kickstart ROM is only half the battle; you still have to boot from the corresponding version of AmigaDOS to complete the process. If you are booting from a floppy disk, just insert the appropriate Workbench disk. If you have a hard drive, it is much nicer if the Amiga can make all of the decisions. The following file replaces your startup-sequence in the

boot directory and does the job. It assumes that you have a WB2.0 directory on your boot drive that contains all of the version 2.0 files. The boot drive should also contain the version 1.3 files as before. Note the names I used for the secondary startup-sequence files. Of course, your file names may differ.

```
Version >NIL: →
graphics.library 36
IF NOT WARN
  assign sys: sys:WB2.0
  assign c: sys:c
  assign s: sys:s
  assign l: sys:l
  assign fonts: sys:fonts
  assign devs: sys:devs
  assign libs: sys:libs
  execute →
s:startup-sequence2.0
  endcli
ELSE
  execute →
s:startup-sequence1.3
  endcli
ENDIF
```

MultiStart II certainly does what it was designed to do; however, at \$99.95 it can be considered a bit luxurious. A less sophisticated ROM board with a manual switch, at a fraction of the cost, may be all that you need. If you can spare a half a megabyte of fast RAM, you also have the option of copying Kickstart 2.0 into the computer's memory and rebooting from there. Commodore has been providing two utilities, Kick and Zkick, for this purpose with the AmigaDOS 2.0 disk set.



KwikStart II with replacement PAL and chip socket.

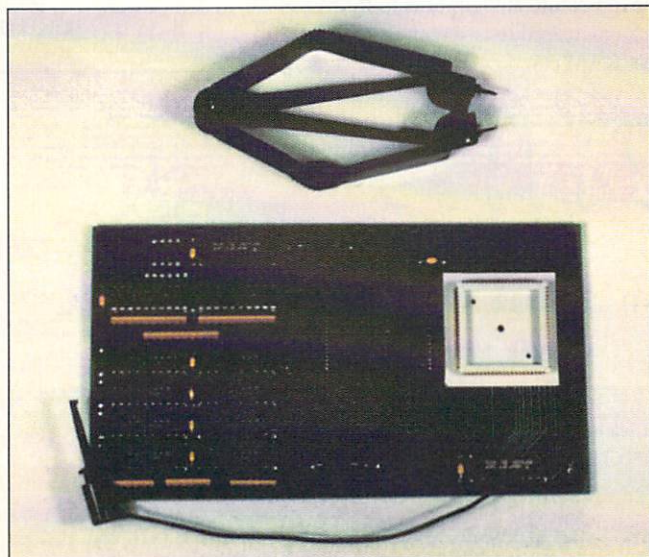
KwikStart II

KwikStart II does for the Amiga 1000 what *MultiStart II* does for the Amiga 500/2000, while also eliminating the need for the Kickstart disk when the computer is first powered up. Installing *KwikStart II* in the Amiga 1000 is a bit more involved than the corresponding installation in the Amiga 2000. The first step requires the extraction of the computer's daughterboard that contains the 256K of RAM into which Kickstart is loaded. A PAL chip on this board has to be unsoldered and replaced with a chip socket. A replacement PAL chip is

installed in the socket and the daughterboard is restored. The floppy drive assembly is the next to go. *KwikStart II* is installed in the 68000 microprocessor socket and the 68000 is plugged into a corresponding socket on *KwikStart II*. A pair of wires from *KwikStart II* are then soldered to the daughterboard. One or two Kickstart ROMs can now be installed on *KwikStart II*.

Based on the setting of an on-board jumper, *KwikStart II* can operate in two modes. In ROM mode, *KwikStart II* will toggle between a pair of Kickstart ROMs when the Control-Amiga-Amiga keys are held down for more than five seconds. In Disk mode, *KwikStart II* will toggle between a ROM-based Kickstart and a disk-based Kickstart. Note that only Kickstart versions 1.3 or below can be loaded from disk on the Amiga 1000. The 512K of Kickstart 2.0 will not fit in the 256K of RAM that is available on the Amiga 1000's daughterboard.

KwikStart II
Unrated
\$99.95
DKB Software

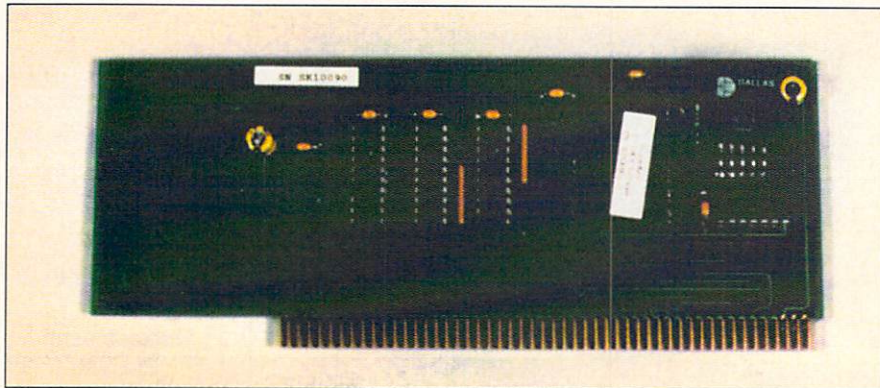


MegAChip 2000 with official Agnus chip puller.

MegAChip 2000

I have said this before and I will probably have the opportunity to say it again; you can never have enough RAM. This goes double as far as Chip RAM is concerned, which is just what *MegAChip 2000* aims to do. Doubling Chip RAM is what Commodore has been doing all along. When you bought an Amiga 1000, it came

MegAChip 2000
 ★★★★★
\$299.95
DKB Software



DKB *SecureKey* card for A2000 / A3000.

with 256K of Chip RAM. The first thing any sensible Amiga 1000 owner did was add the 256K internal RAM cartridge which doubled the system's memory and Chip RAM to 512K. When the Amiga 500 and the Amiga 2000 were first introduced, they had 512K of chip RAM installed. The first update to the Amiga 2000 doubled this to a full megabyte. Although Commodore has never officially sanctioned upgrading the Amiga 500 to a full megabyte of chip RAM, many users have undertaken this minor modification on their own.

When Commodore introduced the Amiga 3000, Chip RAM was doubled once again to a full two megabytes. Although the designers of the Amiga had the vision to provide for two megs of chip RAM in the Amiga's memory map, Commodore did not make any provisions for an actual hardware upgrade to this level when the Amiga 2000 was designed. DKB Software's *MegAChip 2000* provides for a way around that minor oversight.

MegAChip 2000 is a 6 1/2 inch by 3 1/2 inch circuit board that has one meg of RAM permanently installed, an 84-pin chip

socket, and an 84-pin chip socket plug. Installation requires the extraction of the Agnus chip from its socket on the Amiga 2000's circuit board and the insertion of *MegAChip 2000*, with a two megabyte father Agnus chip on board, in its place. To complete the installation, a short wire terminated by a spring loaded test clip is attached to pin 36 on the Gary chip. If you have an older Amiga 2000 that has never been upgraded to one megabyte of chip RAM, two jumpers on the computer's main circuit board will also have to be changed. Depending on the version of your circuit board, the jumper change may require the cutting of a printed circuit trace and a small dab of solder. The most critical installation step is the extraction of your original Agnus chip from its socket. A special extraction tool is required to do this job right.

Once *MegAChip 2000* has been installed and the system has been reassembled, operation of the computer is unchanged. If you run the Avail command you will notice that the maximum amount of chip RAM has been increased to two megabytes. The system RAM can now be expanded to a total

of ten megabytes with the addition of eight megs of fast RAM. The real advantage of the extra Chip RAM is for graphics applications and for multitasking. Even with plenty of Fast RAM installed, it is still possible to run out of memory by using up all of the Chip RAM.

SecureKey

Are you troubled by computer security? Has there been unauthorized access to your data? Have your parents been playing too many games on your Amiga? DKB Software's *SecureKey* may be the solution to your problems. *SecureKey* is a diminutive, 7 x 2 1/2 inch circuit board that installs in any standard A2000/3000 expansion slot. When first powered up, you enter and verify your password. After that, the password must be correctly entered every time the computer is powered up or rebooted or access to the system will be denied. Of course, anyone with a screwdriver can bypass the system by opening the computer and removing *SecureKey*. If you are really concerned about that sort of mayhem, I heartily recommend the Morton Kevelson Amiga 2000 arc welding accessory with 5,000 watt power supply.

Address

DKB Software
50240 W. Pontiac Trail
Wixom MI 48393
313-960-8750

SecureKey

Unrated

\$124.95

DKB Software

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Voyager

by Mark R. Brown

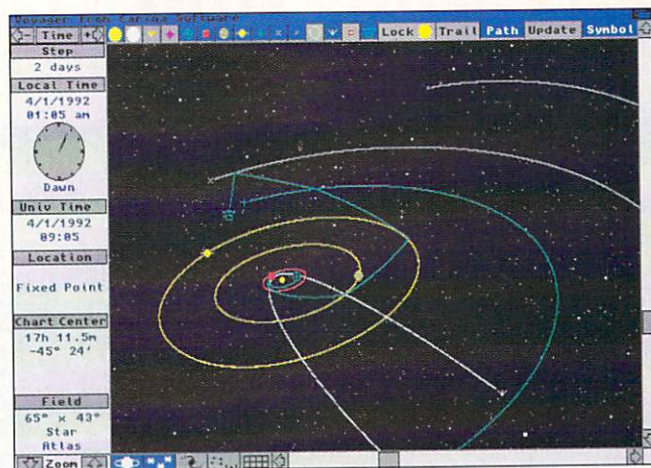
It's always heartening to see a quality product for the Macintosh ported to the Amiga. It means that people 'over there' are taking note of our platform of choice. More, it means they think there might be a few bucks to be made 'over here.' That's encouraging.

But the number of such products is very limited: *Balance of Power*, *Sim City*, *Shanghai*... you can just about count them on the fingers of one hand. But now there's one more. Carina Software's *Voyager* is the most highly-respected astronomy program for the Macintosh, and by the time you read this, it will be available for the Amiga, too.

"So what?" you might say, "We've already got a great astronomy program: *Distant Suns*." And you'd be right. *Distant Suns* IS a great astronomy program. But as in all things, a little competition is likely to result in even better products from both companies. And who wins? The Amiga consumer.

Voyager offers many of the same features as *Distant Suns*: observation from any point on earth (or off); setting of any time and date; configurable display with optional constellation names and outlines, deep sky objects, horizon, etc.; click-on-object popup information windows; variable zoom views; finding celestial objects, including planets; and more.

There are, of course, differences. The interface is decidedly 'Macintosh-ish,' with the clean, crisp look Mac users are used to. The screen displays and gadgets are Mac-like rather than Amiga-like (for example,



The orbital path of Voyager 2 is traced on the stellar background.

there are no 'close' buttons on windows), which only means they're different, not better or worse. It's simply a matter of taste.

The program includes data for 11,000 objects, including the entire 9100-star Yale Bright Star Catalog and 1200 deep sky objects. Expansion disks are available that expand the database by as many as 62,000 more objects! (An accelerated Amiga is recommended at this point, however.)

The version we have is beta, so I won't give this product a rating. But I will pass along a few of the things I like about it so far.

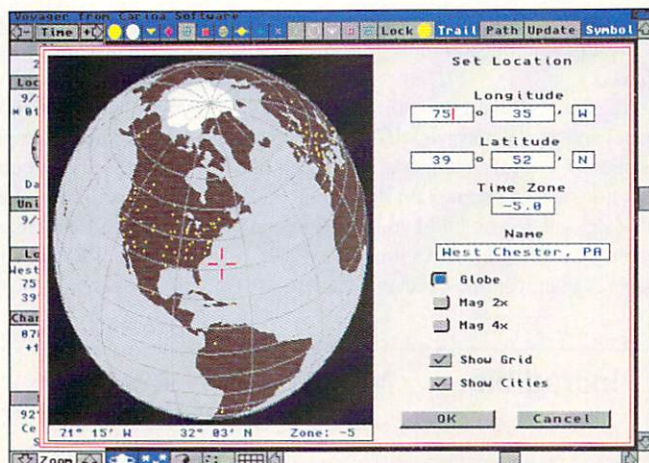
Absolutely on the 'Do Like' list is the viewpoint selection window. It shows you a world globe, and you click on it to select your point of view. You don't have to know your latitude and longitude, as you do in *Distant Suns*. Very nice. I also like the 'Sky

Figures' option, which displays the pictorial figures associated with the constellations. The menu option which displays a three-dimensionally rotatable image of the local group of stars is particularly impressive. The folks at Carina also claim that *Voyager's* planetary calculations are executed 10 to 20 times the speed of competitors." I don't know - I haven't had the chance to time the performance of these two programs head-to-head.

Things I don't like? Well, it's really too early to tell, and *Voyager* is so full of options that I just haven't had the chance to explore them all yet. I do like the 'look and feel' of *Distant Suns* better at this point, though I've got to admit that my bias may be an artifact of lengthy experience with the 'Amiga standard' and with *Distant Suns* itself.

Suffice it to say, if you're an astronomy buff, this program is well worth checking out. And welcome to the Amiga marketplace, Carina!

Picking a point of observation from the world globe display.



Voyager
PREVIEW
\$124.95

Carina Software
820 Williams St.
San Leandro, CA 94577
510-352-7332

The Virtues of Virtual: Creating Your Own Reality



The annual rush to get new games out the door and onto the shelves before Christmas buying season is particularly good news for Amiga gamers this year. Some are out now, others we previewed last issue, and still more are on the way, due to hit the stores after we had to close this issue. Among those still coming are *Black Crypt*, a beautiful new dungeon game from Raven Software and published by Electronic Arts; *Visionary*, an adventure game construction language from Aegis/Oxxi; *Populous II*, also from EA and from what we've seen of it, a likely candidate for Game of the Year for 1992; *Elvira II*, Accolade's follow-up to the surprisingly fine original; *LightQuest*, a wonderfully drawn arcade adventure from UBISoft; and, of course, a whole slew of new games from Psygnosis. We'll be taking a closer look at these and lots more in the coming year, but for now, here are some of the latest to appear on our doorstep:

VIRTUAL REALITY STUDIO



Domark/U.S. Gold/Accolade
550 S. Winchester Blvd.
San Jose, CA 95128
408-246-6607

We've been whining for years around the .info offices about there not being enough good construction set software. That just changed. Domark's *Virtual Reality Studio* can virtual my reality any time. I have never seen such a complete system for creating anything, let alone something as complex as solid-modeled, animated games. Of course, the point to be made about this type of software is that it isn't limited to games, though that's its primary aim. The single disk and manual come with a videotape that shows, among other things, how you could use the system to make a model of your house. It's been said that if a computer is good enough to handle truly fine games,



Domark's *Virtual Reality Studio* is one of the most important entertainment releases of the year. Here's the main object-creation panel. Scenes can be chained together so you could go into the house.



Virtual Reality Studio's tools for editing and moving the objects you've made. The house and space shuttle are included as examples and were imported as complete compound objects.

imagine how well it can do other things. The same can be said of *Virtual Reality Studio*.

The main screen gives you a control panel and a viewport, which can be expanded to a full screen with the touch of a button, with a green plain floating in a blue sky where you build your scenes. You begin by placing graphics primitives: cubes, pyramids, lines, rectangles, pen-

tagons, and triangles. Each of these can be moved around, stretched, shrunk, pulled, and joined to make objects. Moving around your objects and moving the objects themselves is all accomplished by pointing and clicking various buttons and arrows. All of these operations work surprisingly fast and more intuitively than I would have thought possible. *VRS* doesn't even begin to stop a single scene; you can chain locations

Incredible



Very Good



Average



Poor



Drek



together to make whole worlds. I have to note here, too, that this is a WYSIWYG system. You work with the actual pieces you wind up with; unlike 3D modeling, nothing has to be rendered into a final version.

The real heart of *VRS* is its built-in programming language. It uses BASIC-like syntax and has commands for animation, sound, and all the other things you need to make your graphics come to life. It's a relatively simple language, if a little cryptic to get the hang of at first. The key phrase here is 'relatively simple'; *VRS* can be as simple or as complex as you want, depending on the amount of effort you're willing to put into it.

Despite the magnitude of achievement *VRS* represents, there are weaknesses in it. It only uses 16 colors, though they are dithered together to make others. As flexible as the primitives are, I'd like to have many, many more to choose from, including curved shapes and ways to add more detail to existing shapes. As it is, the only way to make curves is to use tiny polygons and group them together; it's a time-consuming and tedious process and the results tend to slow things down unacceptably. However, if you stick to the basics and keep your objects fairly simple, you'll be dazzled by the speed. Animation is currently limited to program control, but would be much better if it had a graphic way of specifying how objects should move, the way *Deluxe Video III* supports a motion path drawn on the screen. I'd also like to see a few special effects added, like haze, automatic shadows, and color-cycling. The program editor is workable but badly needs an overhaul; it lacks even



Gathering clues in U.S. Gold's *Murder!*

basic editing tools - you can't reposition the cursor with the mouse, let alone cut and paste. The manual is comprehensive, but it needs more examples to explain some of the finer points. *VRS* comes on a single disk, and I'd like to have seen an additional disk full of examples and perhaps a library disk of pre-constructed objects. I do have to keep reminding myself that this is the first version of what will certainly be an evolving product. It's been very popular in Europe and I have no doubt that it will be a hit here.

VRS will let you make standalone, runtime versions of your creations so you can share them with people who don't have the program. And I'm sure we'll be seeing a LOT of games and other applications (architectural fly-throughs spring to mind) developed with it. The real wonder of the *Virtual Reality Studio* is that it puts a commercial-grade development system in the hands of consumers. With patience, lots of work, and plenty of imagination, you can

create the equal of any solid-modeled game on the market. And that's high praise indeed.

MURDER!



U.S. Gold/Acolade
550 S. Winchester Blvd.
San Jose, CA 95128
408-246-6607

This is what the computerized version of *Clue* should have been. Since *Clue* was based on the boardgame, it was necessarily constrained by having to consider how many mechanical details could be conveniently handled by humans. *Murder!*, on the other hand, has taken the same basic idea and expanded it into a much more involved, and involving, game. Since the computer takes care of the details, there can be many more suspects, weapons, rooms, and so on. There are around three million possible cases, which are chosen by player-settable variables. Thus, if there's a case you particularly enjoy, you can make note of the settings and replay it (there's no save function, but in this case it isn't necessary). You play on a two-hour time limit.

The graphics are more than adequate (if uninspired), using a quaint black-and-white isometric view of the various rooms of whatever manor house you're sleuthing in; the game aims to re-create the classic mysteries of the Twenties, Thirties, and Forties. There are also some atmospheric sound effects thrown in. Interacting with the game is entirely point and click, with icons and lists for everything you need to track down the killer, including note-taking. The system makes for fast and easy play.

Mystery fans will be delighted with



The two solid object primitives you have to work with in *Virtual Reality Studio*.

They can easily be resized and moved around using just the buttons on the editing panel.

Scouting for enemy planes in the skies over 1972 Vietnam in *Flight of the Intruder*



Murder!, it takes the best of board and computer gaming and combines them into a highly playable entertainment. Agatha Christie would have loved it.

KILLING CLOUD



Konami

900 Deerfield Parkway
Buffalo Grove, IL 60089
708-215-5100

I like the feel of this game, set in the grimy future of San Francisco. The fog that gives the city so much of its atmosphere has become permanent and toxic - it probably just moved up the coast from L.A. :-). It gives everything a red tint that makes even the familiar landmarks look eerie and strange. One of the best things about *Killing Cloud* is that the San Francisco of the game is an accurate representation and makes the game particularly fun if you happen to know the city well. I found it no end of help to be able to run around North Beach, Nob Hill, and the Financial District and know where I was going and where the bad guys were likely to be.

The plot is straight from an Arnold Schwarzenegger movie, with you as the tough-guy cop hunting down a gang of villains who are responsible for the toxic cloud. The solid graphics don't have a lot of detail, but there's enough to recognize a lot of the landmarks. The flight portions (you pilot a skimmer of sorts) of the game are mouse-controlled, and while the control is a little touchier than I like, it's still quite manageable. The documentation takes a tough attitude, too, though it is a little thin in spots. (Be careful about placing your

rocket-powered nets and PODs around the city, apparently only so many can be placed in any one area, but the manual isn't clear about it.)

Increasingly, if a game doesn't have a distinctive atmosphere, it just doesn't make it. *Killing Cloud* has atmosphere and ambiance by the bushel.

FLIGHT OF THE INTRUDER



Spectrum Holobyte

2061 Challenger Drive
Alameda, CA 94501
415-522-1164

I'm beginning to equate flight simulators with fantasy role-playing games. The basics of the genre have standardized over the past few years, leaving plot, scenario, and packaging the only real differences. Based on Stephen Coonts' bestseller, *Flight of the Intruder* is one of the slickest of the past couple of years. Spectrum Holobyte has put

together an extremely detailed re-creation of the book, which is concerned with the air war in Vietnam in 1972. The package includes a 216-page, thoroughly indexed manual containing lots of illustrations, tips, details, and practical information. I wish all manuals were this well done. There's even a copy of the novel in the box, though I'd recommend against trying to read it while you're playing the game.

Flying the game is complicated, and unless you're an old hand at combat flight sims, it will take considerable practice to avoid being shot down immediately. You have your choice of piloting an A-6 Intruder or F-4 Phantom II and you can also have up to seven friendly support planes with you (and you'll need them). There are 13 preset missions and you can also make up your own. The only lack I see in the game is that you can't take the Vietnamese side. Incidentally, *FOTI* runs fine under 2.0, and there's a menu item supporting ICD's *AdSpeed* accelerator to speed up the graphics, a considerate touch I'd like to see more often.

BACK TO THE FUTURE III



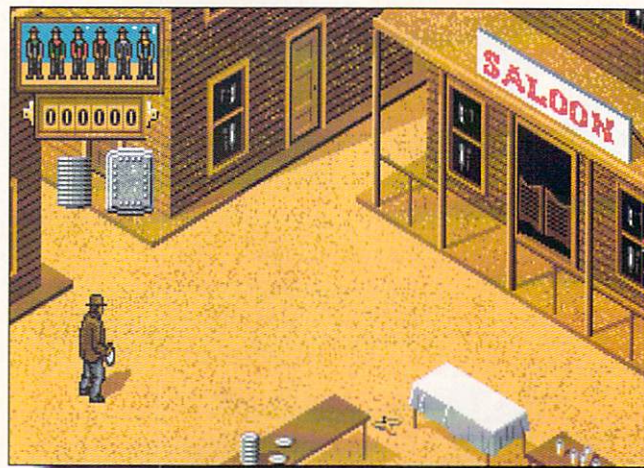
PREDATOR 2



Konami

900 Deerfield Parkway
Buffalo Grove, IL 60089
708-215-5100

Big movies = big bucks, therefore big movie = computer game = some more bucks. I can understand licensing movie titles, but I think we've about come to the end of the fad. Movie knock-offs may sell a



About to throw a few pies in *Back to the Future III*.

few copies, but on the whole, movies don't translate very well into computer games. Actually, I have a couple of other theories on the popularity of these games. The first has to do with parents going to the local software shop to pick up a birthday present for Junior; they see a familiar title and, through lack of knowledge, buy it instead of something better. The other theory is a little more subtle. Americans may not be very popular in Europe, but American culture certainly is, making games based on American movies likely to sell. Theories aside, *Back to the Future III* went one sequel too far, and so has the game. It's innocuous enough, but thoroughly unmemorable. The game is made up of the usual series of arcade sequences, like rescuing the schoolmarm from a runaway buckboard, throwing pies at villains, and visiting a shooting gallery (where the targets are, thankfully, mostly ducks). The graphics and animation are better than I expected, and the play is, with a little practice, just the right difficulty level for kids. They'll probably get a kick out of it, but grownups will probably find it pretty silly.

There's nothing technically wrong with *Predator 2*, but I have a serious aversion to any game that's nothing more than a human shooting gallery. I don't care that the bad guys are gang members and drug dealers; I think it sends a very bad message to have the primary aim of a game to be slaughtering people in the greatest numbers possible. *Predator 2* reminds me of the worst excesses of Taito. The graphics are slightly better than average, and the play is about on a par with standup arcade machines (in other words, deliberately difficult to eat as many quarters as a fast as possible). I didn't



Nicely done isometric view of orbiting a planet in *Hard Nova*.

make it past the first level and I'm not inclined to give it another try. *Predator 2* may have been a successful movie, and the game may succeed in what it aims for, but that doesn't make the bad taste it leaves in my mouth go away.

HARD NOVA



STARFLIGHT 2



Electronic Arts

1450 Fashion Island Blvd.
San Mateo, CA 94404
415-571-7171

Both of these games arrived the same day, and they might as well have been in the same package. Both are interstellar trading games with heavy role-playing elements. The primary distinction is one of attitude. *Hard Nova* has a (sorry...) harder edge to it, while *Starflight 2* is a little more

lighthearted in its approach.

The one thing I like most about *Hard Nova* is that it has a female as the primary character, something we see too rarely. You can also choose to be a male character, but that defeats the idea. There are some nifty isometric views when you're orbiting your spacecraft and flying over the surfaces of planets. The game also has indoor sequences, but they are much less successful, using a top-down view and some of the jerkiest character movement I've ever seen. (Be sure to visit the zero-g roulette table - it's not very well done, but I like it because I won so much loot at it.)

Starflight 2 has a setup process that takes far too long, a starchart-lookup copy protection scheme that is poorly done, and documentation that tells you almost, but not quite, everything you need to know to get going. Once you get past those hurdles, though, the game plays fairly well, with the object being to learn the secrets of the feared Spemin. (At least they aren't evil wizards.) The real aim, though, is exploration and interaction with a weirdly interesting collection of aliens.

Both of these games are obvious IBM ports, and the graphics show it. They're not bad, but particularly in the case of *Hard Nova*, a fully Amiga-tized version would have rated much higher. I should note there, though, that we're reaping the benefits of IBM gamers' discovery of sound boards. The music and sound in both of these titles is exceptionally good. If I had to choose only one of the pair to play, it would be *Hard Nova*, but if you enjoyed the original *Starflight*, you'll certainly like the much enhanced sequel even more.



Communicating with a distant relative of a potato in *Starflight 2*.

Bubbling through the bloodstream in Centaur's *Fantastic Voyage*



FANTASTIC VOYAGE



Centaur Software

PO Box 4400

Redondo Beach, CA 90278

213-542-2226

Movie licenses are usually pretty lame, but Centaur has taken this one and turned it into one of the best arcade games I've played in the last few years. Of course, a trip through the human body in a miniaturized submarine is a natural for an arcade game, and *Fantastic Voyage* takes full advantage of the scenario. The goal of the game is to find your way through the body to the brain to destroy a blood clot and save the patient's life. (If you haven't seen the 1966 Raquel Welch movie, watch for it on cable or go rent it, or read the paperback adaptation by Isaac Asimov.) The graphics are a marvel to look at, with backgrounds that are constantly changing, with beautiful, shifting ranges of colors. Over these backgrounds is laid a slight distortion, giving a perfect illusion of moving through fluid. Overall, the special effects make those in the original movie look hopelessly dated.

Motion is also handled extremely well with fast, responsive joystick control. Starting off in a vein near the heart, you have to fight your way past leukocytes, bacteria, cancer cells, and other fast-moving things that all view the sub as something to be destroyed. Complicating matters is having to find your way through a maze of capillaries and other vessels. The second level takes place on an even smaller scale, with graphics based on the trails left by quarks, muons, and other subatomic particles. Sound effects and music are as well done as the graphics.

Fantastic Voyage is comparable to the best of Psygnosis' arcade games. It's difficult, but not impossible; it's challenging without being overwhelming. Even if you don't like arcade games, *Fantastic Voyage* is well worth looking at just for the effects. And if you do like arcade games, you're in for some of the best shoot-em-up action you've had in a long time. *Fantastic Voyage* certainly is one.

VOLFIED



ReadySoft

30 Wertheim Court, Unit 2

Richmond Hill, ON Canada L4B 1B9

416-731-4175

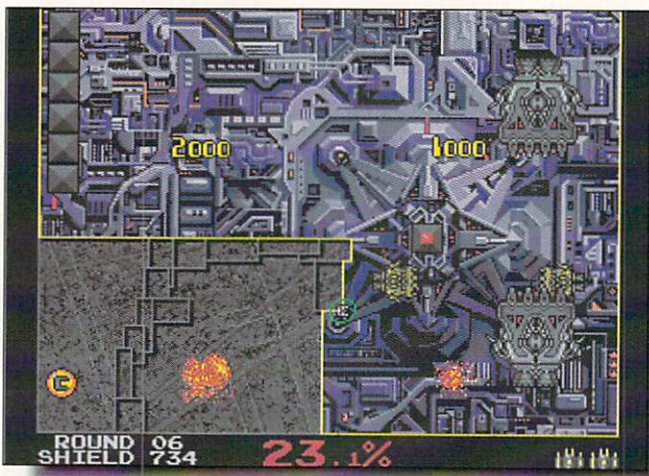
Volfied is to *Qix* what *Arkanoid* was to *Breakout*. It is, in my book, the definitive version. A little background is in order here. *Volfied* was released in the UK by Empire, who licensed it from the Taito coin-op, and Readysoft is handling the NTSC release in North America. A couple

of years ago, Taito released *Qix* on several platforms, including Amiga and C64, but it was a sore disappointment, slow and unbeautiful. They apparently took that lesson to heart and started over with *Volfied*. If you've somehow missed *Qix*, the idea is to rope off sections of the screen with a line while avoiding nasties that are trying to kill you off. These enemies are intelligent and come after you with a vengeance. Once you get a piece of the screen surrounded, the section is filled in. A certain percentage of the screen is required to complete it and move on to the next level.

Volfied's graphics are positively gorgeous, drawn with imagination and skill. Rather than the primitive rays and sparkles of earlier *Qix* incarnations, each level of *Volfied* is populated with strange and wonderful (if deadly) creatures that are as much fun to watch as the game is to play. I was waffling on whether to give the game five stars until I battled my way to a level inhabited by little spiderlike things and saw them move like real wolf spiders, making speedy little dashes, stopping, and then running off again. The effect is brilliant.

The play is just what it should be, relatively easy at the start and becoming progressively more frantic, to the point that if I keep going I'm afraid I may give myself a hernia. But keep going I certainly will. The play isn't quite like the *Qix* you may be used to, but I like it better. For example, a creature merely touching your line won't kill you off immediately; instead, it starts a sparkle that, if you're quick enough, can be outrun. However, you do have to avoid running into creatures directly. It makes for a much more playable game.

Volfied, along with *Arkanoid*, is a requirement for the section reserved for classics on every arcade gamer's shelf.



Ready Soft's *Volfied* is the ultimate QIX

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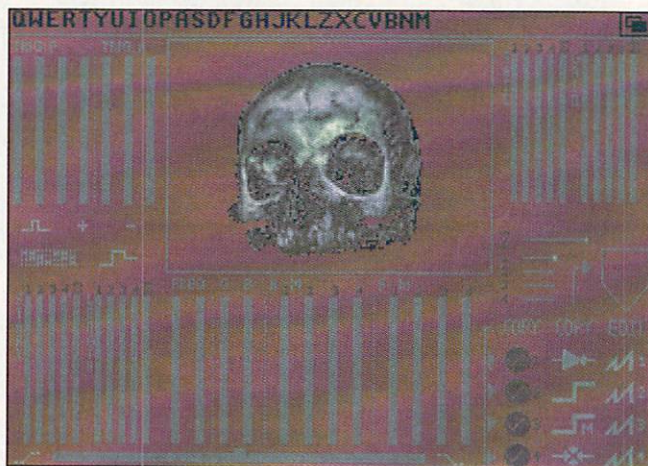
Weirdware

by Tom Malcom

I first heard about Pacific Digital when they exhibited at the Oakland AmiExpo. The descriptions I heard were vague, but enthusiastic, and now I see why. What Pacific Digital has come up with is a new direction in Amiga entertainment software that defies printed description; to really understand what it is, you have to see and hear it.

Pacific Digital calls their products Media Toys, a name as good as any other. What I like most about them is that they are play tools, designed to be fiddled with and explored for their entertainment value. (See 'Computer Thumb-Twiddling' in the November '91 .info.) Pacific Digital has released four titles simultaneously, at a cost of under \$30 apiece: *MultimediaFX*, *StarsFX*, *SpectrumFX*, and *VocoderFX*.

The best of the four is *MultimediaFX*, which is the single strangest piece of software I've ever had the pleasure to boot up. Basically what it does is load a series of graphic screens (or animation frames) and sound samples, and then modulate them in various ways. The effect is that the sound and graphics have an effect on each other, producing some of the strangest, and most compelling, computer music and sound effects you can imagine. It's not like anything I've ever heard before; sometimes it's music and other times it's sound effects. The disk comes with a Halloweenish skull animation, along with several sets of sound samples and presets. These presets are common to all of Pacific Digital's work. Each title uses a main control panel, with sliders and buttons for making changes to what you see and hear. It's a highly interac-



MultimediaFX intertwines graphics and sound into a decidedly different experience.

tive environment, and you can save an unlimited number of current settings as presets. In the case of *MultimediaFX*, various presets can be assigned to keys, so you can actually play the thing with your keyboard. The result can be anything from Max Headroom-ish to nearly symphonic, and all the while, the animation is moving in conjunction with the sound. That sound is, by the way, in glorious stereo and moves from speaker to speaker in almost three-dimensional ways.

StarsFX is a little easier to get a grasp of. Simply put, it's the most sophisticated animated starfield generator I've seen. Once you get the control panel set up or a preset loaded, you can steer yourself through the starfield using your mouse. It's fast-moving and very smooth, with a strong feeling of flight. In fact, there's an included preset to take advantage of a 25Mhz machine and it moves so fast you'll feel like your cheeks

are peeling back from your skull. *StarsFX* includes some game-like aspects like tumbling asteroids and a gun to shoot them with, but I quickly tired of that and went back to straight flying. It's exhilarating.

The other two products, *SpectrumFX* and *VocoderFX* are more oriented to experimenting with sound. *SpectrumFX* is based on realtime Fast Fourier Transform effects and also has a function for graphing what you come up with as a colorful 3D contour map. *VocoderFX* is also for sound experimentation, but it's based around Digital Signal Processing and uses a pipeline metaphor to route the sample through different effects.

All four of the toys have easily accessible online documentation, eliminating the need for printed docs. (All four also share a non-standard and very awkward file requester, though I'm told it's being improved.) If you're looking for something different in entertainment, don't miss these innovative new toys. They're some of the best things I've played with in years.

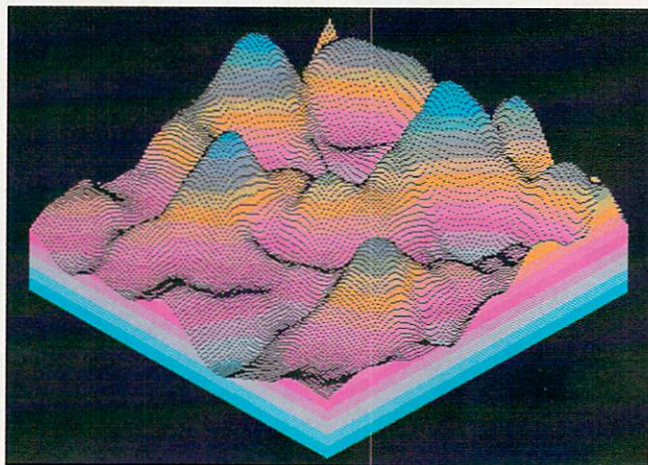


Image produced by graphing a sound file in *SpectrumFX*

MultimediaFX
StarsFX
SpectrumFX
VocoderFX
\$29.95 each

Pacific Digital
6 Stetson Drive
Kentfield, CA 94904
415-457-8448

Pixound

by Tom Malcom

P*ixound* deserves a five-star rating for the concept alone. It's the reason I bought a MIDI keyboard and while I can't play a note, *Pixound* makes some of the most interesting and fascinating music I've ever heard. What *Pixound* does is take any IFF image and translate it into music based on the RGB values it finds in each pixel. One of the things that makes *Pixound* so special is that it can be used on a variety of levels and with differing amounts of interaction. It operates both manually and automatically, though I prefer setting everything up, turning on Autoplay, and sitting back to enjoy it. But then I'm also essentially lazy. It's sophisticated enough that, with some work and creativity, it could be used as a serious composition tool (there's even a function to save standard MIDI files for importation into other music programs). Above all, though, *Pixound* is the best musical toy ever invented. I've been playing with different versions of it for a couple of years. Now it's been revised to version 2.5 and is being distributed by Centaur.

Initial setup is a little daunting at first, but things do get easier as you become more familiar with what's going on and how different functions affect what you hear. Don't be afraid to experiment. While *Pixound* can use both internal and MIDI sound, MIDI is by far the preferable. If you're going to use internal sound, make sure you use good quality ones, such as those from The Other Guys' *EZ FM Synth*. There are default internal sounds, but I find them rather flat and tinny. Groups of sounds can be assigned to any of seven patches, which can then be selected via a keypress, and you can switch between them instantaneously. Rhythm is also configurable, defined by tapping it out on the keyboard. There are additional commands for pitch, harmonics, and scale.

Graphics are handled in two ways. You



Variation on a theme by Leonardo da Vinci: Making music with Mona and *Pixound*.

can load screens you've made with other software or you can use *Pixound's* own routines for generating them. There are example screens included in the package, and it's a kick to not just see the Mona Lisa, but hear it, too. The picture at the top of the page was generated by loading in Mona and then turning on *Pixound's* Neo Geo routine just long enough to make some serious alterations to the way she looks and, thus, the way she sounds. These internal graphic functions are very slick, either generating set patterns on the screen or dynamic ones that keep changing until you hit a key to set them, as I did with Mona. They work something like the Lines, Dots, and Boxes demos on the Amiga Workbench disk, but in color and with more control. Another method lets you paint directly on the screen, hearing what you paint as you go. Screens can also be overlaid, and whatever you come up with can be saved. *Pixound* will accept any screen resolution, but the more colors, the better; you'll hear much more varied music from HAM than from hi-res.

Since *Pixound* operates according to color values, the palette controls are the single most important aspect of the program. They are, accordingly, involved and versatile. In fact, the palette controls are so good that I've used them to generate palettes to use in other programs. Transposing from one key to another involves lightening or darkening the palettes, and the palettes can be tuned, meaning that a particular color can be assigned particular musical characteristics. Color cycling plays a

major role and there are methods of cycling that are unique to *Pixound*. For example, there's one setting that lets two different cycles interact to produce something like counterpoint.

Playing *Pixound* is as easy as moving the mouse pointer around the screen. In Autoplay mode, screens can be played randomly, top to bottom, or in a pattern you define by recording a macro of mouse movements. That means that if you find a melody you like, you can program a macro to play it the same way each time. With some practice, you can create compositions by judiciously placing color on the screen. One of the included examples sounds amazingly like Bach. You can also load different BOBs to play the screen with.

Wonderful as *Pixound* is, there are some things I would change. First, the manual is helpful, but not as extensive as it should be. Because the program is so unlike anything else, a videotape tutorial would be the ideal way of getting users going. I'm also not overly fond of the method of changing sound patches, which involves holding down a mousebutton and moving the mouse around to change numbers; it's a little too touchy, especially if you use a mouse accelerator.

Taken together, all of the controls make *Pixound* an infinitely variable music machine that can be anything you want it to. Like all truly great software, imagination is the key ingredient. Give *Pixound* a listen. You'll hear things you've never dreamed of. ▼

Pixound



\$79.95

Hologramophone/Centaur
PO Box 4400
Redondo Beach, CA 90278

Prepubescent Publishing and Program Packing



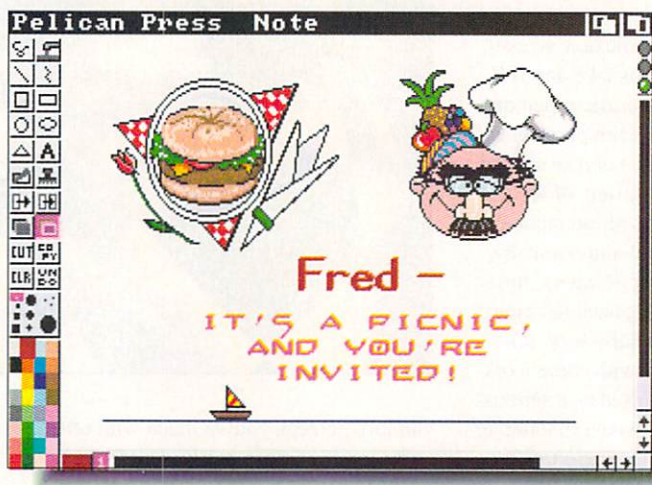
Professional Page, *Saxon*, and *PageStream* are fine programs for the sophisticated adult intent upon creating a slick, professional document, but what about the kids? What if there was something for the younger set, something with ready-made graphics, something for creating colorful cards or posters or even banners? That's the idea behind *Pelican Press*, the "light-hearted publishing program" from Queue, Inc.

Pelican Primer

Pelican Press comes on two disks. It's not copy-protected, is compatible with AmigaDOS 2.0, and has a handy icon for hard drive installation. *Pelican* will run on an unexpanded Amiga, but two drives are recommended, and a megabyte or more of memory will let you get the most out of the program's graphics. *Pelican Press* is limited to low resolution. This could be perceived as an advantage; children are enchanted by color, and the more that are available, the better. *Pelican* uses the standard 32-color palette, not 64-color extra halfbrite mode.

Graphics to Go

When you first run *Pelican Press*, you are given the option of creating a poster, sign, note, calendar, card, or banner. There is not much in the way of visible difference among these formats. Notes are single



A
Pelican Press
picnic poster.

320x200 "panels." The other formats are all multiples of that single panel, arranged in different ways. Posters, for example, consist of three vertically stacked panels. *Pelican*'s drawing area is a rigid window into your creation; there's no sizing gadget. There's no magnify or reduce option, either. Movement within the drawing area is accomplished through the traditional slider gadgets and arrows. If you're working with a multi-page creation like a card, you'll have numbered page gadgets to let you move from page to page.

The drawing portion of *Pelican Press* is rather primitive by Amiga standards. Most of the standard tools are there - with the exception of a curved-line tool - but the action is uncharacteristically slow for an Amiga. A moderately-sized filled ellipse took almost three seconds to take shape; *Deluxe Paint* can render the same shape in an eyeblink. *Pelican*'s method of text-handling is interesting. You don't type directly on the drawing surface. Instead, the characters you type are "attached" to the pointer, using any of the justification methods. When you're done typing, you stamp the text - like a brush - onto the drawing. This approach enables you to quickly build multi-colored, layered text. Any text attributes - color, font, style or justification - can be changed while the text is attached to your pointer.

Pelican Press abounds with ready-made artwork - borders, backgrounds, clip art, frames, and posters. Clip art, frames, and borders can be previewed. If you want to see what a background or poster looks like in color, you'll have to select it. All of *Pelican*'s art is displayed in black-and-white in an accompanying pamphlet. Backgrounds and posters are static. You can choose how to place these graphics when you select them, but once placed, they're glued to the spot. Clip art - including borders and frames - is mobile, and each piece exists as an independent entity. You can place a piece of clipart, move it, bring it to the front, or move it to the back. Each graphic can be deleted or cloned. The available graphics are cute and colorful, and there's a wide variety from which to choose. The mobility of the graphic elements leads to one of the quirks of *Pelican Press*. You can't draw over the graphics, much less even see them while you're drawing, until you "freeze" the background. This fixes all of the clipart elements into the drawing surface. Text, by the way, is treated in the same manner as graphic elements. You can move it and layer it until you freeze the background.

Pelican Picks and Pans

Pelican Press has a few problems. For the most part, it is not a very flexible pro-

Pelican Press



\$99.95

Queue

338 Commerce Drive
Fairfield CT 06430
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203-247-4641

gram. You work with the formats *Pelican* allows, in the only resolution available. Two of the formats - calendar and banner - present you with few options. Calendars are available in single-month format only. Banners are even more restrictive. There are only two fonts available - Helvetica and Serif - and none of the drawing tools are available. All you can do is stamp clipart elements. Much of this program is geared toward children, but some adult supervision (and maybe some help for the adults) is required. The toolbox features a number of tools whose use is not immediately apparent, and the manual - which seems to have been run off in a copier low on toner - has no index.

If your children will be happy with cute, simplistic graphics and few choices, and if you're willing to take the time to guide them through the use of this program, *Pelican Press* can offer them an enjoyable and even productive experience. *Pelican* is kind to Amigas with limited memory - it even has a traffic light to warn you if you run low - and it works with black-and-white printers. A color printer is highly recommended, of course. I'll confess to having judged *Pelican Press* from an adult perspective, but I think the limitations of the program are unwise. A few more features could have given the *Pelican* room to grow, even fly.

PowerPacker Professional

When your hard drive gets down to its last few bytes free, you know it's time for some hard choices. You can either prune your files or peel a few more hard-earned dollars from your bankroll and spring for more storage. If you have a floppy-based system, you don't need me to point out that your Workbench disk has about enough free space for a short letter to your mother. Better make that a note. Before you tear out the last of your hairs, though, you might consider a file cruncher. These tools have been with us for quite a few years, circulating among the bulletin boards of the world as shareware. One of the most popular has always been *PowerPacker*, by Nico Francois.

PowerPacker has been improved from the shareware version, and has emerged as *PowerPacker Professional*, marketed in the U.S. by those friendly folks at Jumpdisk. The claims for *PowerPacker Pro* are impressive: 40-50 times faster at crunching than previous versions, 20% faster at



Setting the decrunch color in *PowerPacker Professional*.

decrunching, and able to crunch programs with overlays. There's more to the package than just the program file cruncher, though. There are three utilities - *PPMore*, *PPShow*, and *PPAnim* - that allow you to read crunched text files, view crunched images, and play crunched ANIM files.

Crunch All You Want...

PowerPacker Pro is exceptionally easy to use. If you do nothing but select Load from the Project menu and specify a file, that file will be fetched and crunched, using the default settings. I didn't verify the speed claims, but I can say that crunching at the "best" setting is considerably faster. I tried using the last shareware version of *PowerPacker* to crunch a 260K file; I'm still waiting for it to finish. (I aborted the operation after a half hour.) *PowerPacker Professional* did the job in less than four minutes. Note that my test file had 80 hunks. *Deluxe Paint III*, at 282K with eleven hunks, took 1 minute, 34 seconds at the "best" setting.

There's More!

PowerPacker Professional does more than crunch files, though. The HunkLab lets you remove any debug or symbol hunks left in the program code, and lets you force program code, data, or uninitialized code to be loaded in chip memory. If you need to perform the same operations repeatedly, you can take advantage of *PowerPacker* scripts. These scripts allow you to "record" a sequence of commands, store them, and execute them at will. If you need to crunch an entire directory - your C: directory, for example - you can quickly set up a script to do this. Just select "Start

Recording" from the menu, set your destination directory, and use the "All" gadget to select all the files in C:. *PowerPacker Pro* will whip through the directory and write its own script. When you execute that script, *PowerPacker* will automatically crunch all the files and write them to the destination you specified. Note that *PowerPacker* will write *only* those files whose crunched size, plus the special "decrunch" header, is smaller than the original. (The header, a small program that decrunches the file it's attached to at runtime, is only 600 bytes long.) My one complaint is that the documentation, available on the disk, is incomplete and in need of editing.

Does *PowerPacker Pro* work? Yes. Is it fast? Absolutely. It's the fastest cruncher I've seen. Is it worth it? Probably. If you're curious, try out v2.3b, the last shareware version of *PowerPacker*, on Fish Disk #253. (While you're at it, you might also want to try *PowerPacker*'s main competition, *Turbo Imploder*, on Fish Disk #422, which also does a great job of crunching executable files.) *PowerPacker* gives you lots of extras, and its performance is flawless.

PowerPacker Professional



\$29.95

Jumpdisk

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Chico CA 95926
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ProVisions

ProVisions Contents

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MULTIMEDIA

by Harv Laser

A *migaVision*, *CanDo*, *HyperBook*, *Director 2*, *Foundation*. Five programs with intriguing names. They've been described as 'multimedia software.' Perhaps. But first, let's try a dictionary definition...

Xiphias' *American Heritage Illustrated Encyclopedic Dictionary* for CDTV defines 'multimedia' in this way:

"MULTIMEDIA - adjective. Including or involving the use of several media of communication, such as motion pictures, still photographs, and records, for the purpose of education or entertainment."

So far, so good. But the guy down at the Community Hall, pushing the button on his slide projector and narrating his South Seas Islands tour while Hula music plays in the back-

ground... he's using multimedia, then, isn't he? Of course he is. As a recent *.info* editorial noted: "Multimedia is whatever you want it to be." But we have to narrow down these definitions and concepts somehow, or we'll be here all day. So let's take a look at the five Amiga programs most folks think of when discussing what our computers can do with multimedia.

AUTHORING SYSTEMS

A lot of Amiga programs can put animations ('motion pictures'), IFF screens and brushes ('still photographs')

and sampled sounds or music files ('records') together into presentations. But our subject programs go a lot further than just having 'multimedia' capabilities. These five packages can be used to write your own software. Besides having the ability to make user group, board-room, dealer, or personal 'presentations,' they are programming *languages* in their own right. People already use these 'authoring systems' to build completely usable, functional programs that have nothing to do with slideshows.

In fact, many developers employ these and other Amiga packages to build their own *commercial* applications, including CDTV titles. Even if they prefer to use C or other development languages for their finished products, these authoring systems can also be used to *prototype* software - to build, with relative speed and varying degrees of ease, a running version of a product they later intend to code 'by hand' in the computer language of their choice.

Don't mistake this month's column to be any kind of all-encompassing comparison and review of these five products. Each of them rightly deserves a complete and detailed exploration on its own, and I'll be doing just that with some of them in the coming months. Instead, take this as more of an extended glance at each package - where it came from, what you can expect to be able to do with it, and a discussion of the strong and weak points I found in each of them.

AMIGAVISION

Whether you like it or not, Commodore has established *AmigaVision* (AV) as the standard of Amiga

||||| ◆ |||||

Multimedia is whatever you want it to be.

||||| ◆ |||||

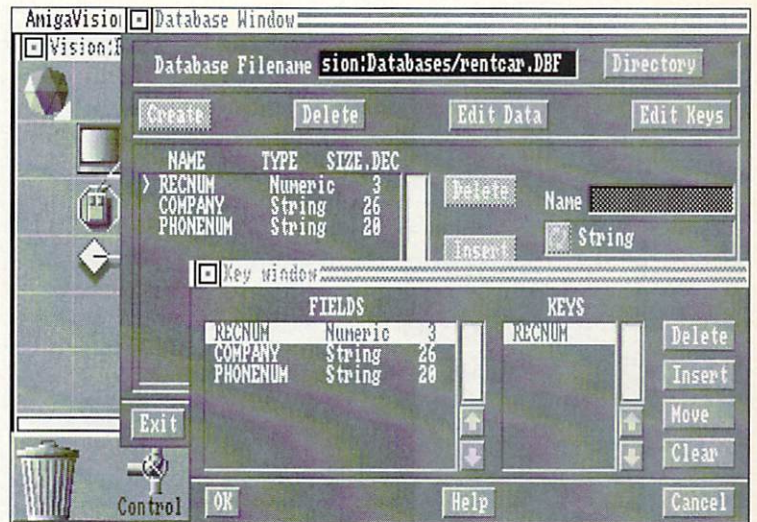
authoring systems. Let's face it, when you bring your new computer home, open up the carton and find a software package inside, you have to admit to yourself that the manufacturer of that computer is endorsing the use of that product. Apple has done this for years, bundling *HyperCard* with every Mac they sell. *ARexx* and *AmigaVision* are Commodore's answer to *HyperCard*, at least in value if not in functionality.

When I first saw *AV* a couple years ago, I found it strange that the program's entire interface was designed to display in shades of gray. Here we have a computer with 4096 colors right out of the box, so what's with this monochromatic interface? The more I thought about this, though, the more it made sense. While you'll certainly want color in the programs you create with *AmigaVision*, having a neutral gray-shaded interface keeps the program itself from getting in your way when working with the components you are putting together. And the muted grays of *AV*'s working screens gives it a kind of classy, professional look.

AmigaVision's interface is great, and very easy to use. The presentations or programs it makes are called 'flows,' since you construct them by building flowcharts with your mouse. It's as simple as dragging little pictograms (icons) that represent your projects' elements: static graphics, animations, texts, sounds, musical scores (SMUS format only), and even frames or sequences from videodiscs, onto the flow construction area. Other icons, representing program control ingredients and events, such as loops, pauses, and interrupts, are then placed alongside the creative elements to give your invention a beginning, an end, and a logical structure in between.

While you work with the interface, *AmigaVision* is building its flow file. You can't read the flow, view it as text, or change it with a text editor. *AmigaVision* only lets you work on your projects through its own iconic screens and requesters, and here's where one of the program's quirks intrudes. Although *AV* allows you to print out a flow, what you get on paper is what you see on the flowchart grid, and nothing more. In other words, as you build your flow, dragging icons about, you often must enter parameters into requesters, such as how to tell *AV* where on your disk drives to find a picture or a sound, or to enter some database parameters or operators. Well, a flow printout doesn't show you *any* of the information you enter into those requesters, which makes the utility of any *AmigaVision* printout suspect, if not completely worthless.

AmigaVision allows a flow author to edit-protect his work. This means the author can give it to anyone else to play only, but when you attempt to load an edit-protected flow back into *AmigaVision*, you are told it is not allowed. (Honesty demands that I advise you that this limitation has been circumvented. Search your public domain resources for a tiny program called *AVEdit*,




Some of *AmigaVision*'s dBase-compatible database functions.


which will de-protect any edit-protected *AV* flow.)

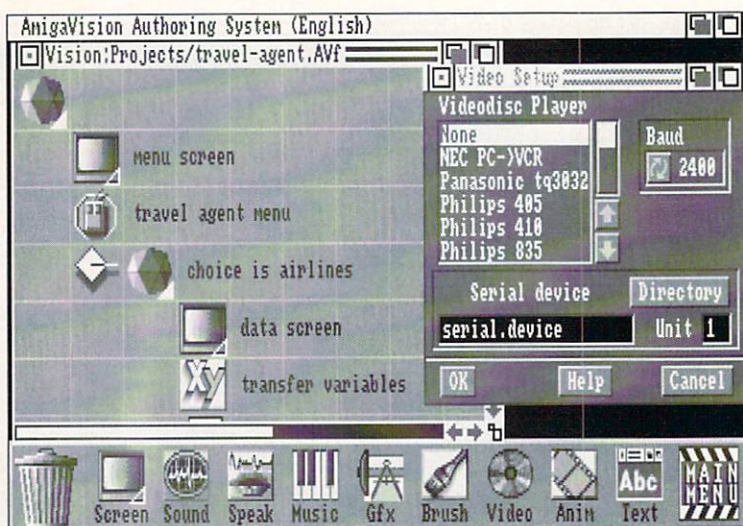
Another major *AmigaVision* drawback, and the one about which I've read the most complaints from owners and users, is that out of all the programs in this article, *AmigaVision* is the *only* one without a freely-redistributable player. You *must* own a copy of *AmigaVision*, and have it installed on your system, in order to run any *AV* flow. Period. In all my travels through the realm of Amiga public domain software, I've never found a user-written *AV* flow player, either. I can only assume that, for now, none exist. This severely limits the audience for any given *AV* flow, since many people are simply not going to spend the bucks for *AmigaVision* just to use it as a \$149 player for flows they acquire. It could, in all likelihood, lead to increased piracy of the product by people who simply want to play flows. Commodore should rectify this situation by releasing a flow player, and do it quickly.

To sum up: Good things about *AmigaVision* - It's easy to use. Installation is straightforward, requiring only the main program and a couple of sub-directories with help file texts. The user interface is very pretty. I'll go so far as to say it's impressive. *AV* is easy to learn and fun to use. Being able to drag icons to create a project makes it fast. *AV* is *ARexx*-capable, but does require some knowledge of database structures if you are going to use the database functions, and math formulas for certain other functions. Presentation of



AmigaVision
1.71D
☆☆☆+
\$149.95
Commodore
1200 Wilson Dr.
West Chester, PA
19380





Selecting a laserdisc controller in Commodore's *AmigaVision*.

graphics and animations is trivial, as is text display. Although animation control is quite basic, you can synchronize sound files with relative ease, and can place an ANIM where you want on the screen. AV has good control over loading or preloading bits and pieces to help with memory management. Laserdisc support is a major plus and is well-integrated, with many drivers included. There are many excellent example flows available for you to download.

Bad things about *AmigaVision* - Although you can create program interfaces with AV, creating buttons is kind of cryptic. There is no stand-alone player, which makes it impossible to show a presentation unless the Amiga on which you play it has AV installed. Commodore's been shipping a 1.3 compatible manual with 2.0 A3000 systems, which confuses the hell out of *AmigaVision* newcomers. The latest AV manual, now a large paperback book, is pretty decent. *AmigaVision* doesn't require you to have programming experience, but it helps for certain functions. Flow printouts, although pretty to look at, are worthless for recreating an entire flow from scratch. Flows are a proprietary format which cannot be

loaded into a text editor. Large flows and those which use hi-resolution screens tend to load slowly, and react slowly to user-interaction.

DIRECTOR V2

Compared head to head, you probably couldn't find two authoring systems with interfaces more different than *AmigaVision* and *Director 2*. Where *AmigaVision* is completely driven by icons, *Director 2* is totally text-based. In fact, the *Director 2* program itself is really a language compiler and player for scripts that you must type in by hand using its accompanying DEdit program. This does not make *Director 2* 'bad' in any way. In fact, as far as flexibility and control go, *Director 2* has it all. The degree with which D2 lets you fine tune your presentations is nothing short of incredible.

However, I'll say it again: *Director 2* is a language. It's a language you're going to have to learn to make any use of at all. It's quite like BASIC. In fact, it reminds me a lot of extended graphics-oriented BASICs I saw back in the old days for the C64. If you already have a good background in writing code, especially BASIC code, you'll love D2.

The original *Director*, which was probably the Amiga's first true multimedia authoring system, forced you to use whatever text editor you already had to create your projects, called 'scripts,' which the *Director* program itself compiled into 'films,' which were later played by the freely-distributor Projector program. Although it follows the same edit-compile-play scheme of its ancestor, *Director 2* includes DEdit, a powerful and customizable editing environment geared specifically towards the creation and modification of D2 scripts. You can use DEdit's bank of pull-down menu selections (which are expandable with your own favorite commands) and keyboard shortcuts, or you can even operate it with 'vi' commands, since it emulates the UNIX editor of the same name.

You type in your script, then run it from inside DEdit by calling the *Director 2* program. As you do this, the .film file is compiled, saved to disk, and played. If there are problems with your script, D2's excellent error-checking will advise you what they are and return you to DEdit with your cursor placed right on the script line that caused the error, where it will wait for you to correct it and try again. You can constantly check the progress of your script by running it as you add each new component or routine.

New to *Director 2* are some helpful utility programs such as BlitUtil and PolyUtil, and external modules for controlling SMUS music and MIDI instruments, all of which are easily called from within DEdit.

Director 2's documentation is superb. A 500-page ring-bound manual gives you everything you need. *Director 2*'s included tutorials fill an entire disk. Some of them are amazing creations in and of themselves.

To sum up: Good things about *Director 2* - Of the programs discussed, D2 has the greatest control of graphics



Director V2

☆☆☆☆+

\$129.95

Right Answers, Inc.

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Torrance, CA

90510

818-840-8021



and animation presentation. If your presentations call for the use of Amiga ANIM files, *Director 2* will let you control an ANIM down to the frame level, with speed changes, backward and forward playing, and syncing sound to particular frames. *D2* can even build an ANIM from separate IFF pictures. It can import a *Deluxe Paint* type looping ANIM and jump out before the looping frames. It has wonderful MIDI and sound capabilities, including support for SMUS scores and instruments.

It's possible to use *D2* to build your own program interfaces, but this can take some time. It works best to create a screen and then define hotspots for use as buttons. *D2* is excellent for prototyping different types of software. One fine example of the use of *D2* for creating a commercial application is Dominion Software & Design's *Advanced Military Systems*. This CDTV title (to be reviewed here in a future issue) contains over a thousand IFF pictures, sampled voice narration, music, and a hot-spot user interface; all of it was assembled and sequenced with *Director 2*.

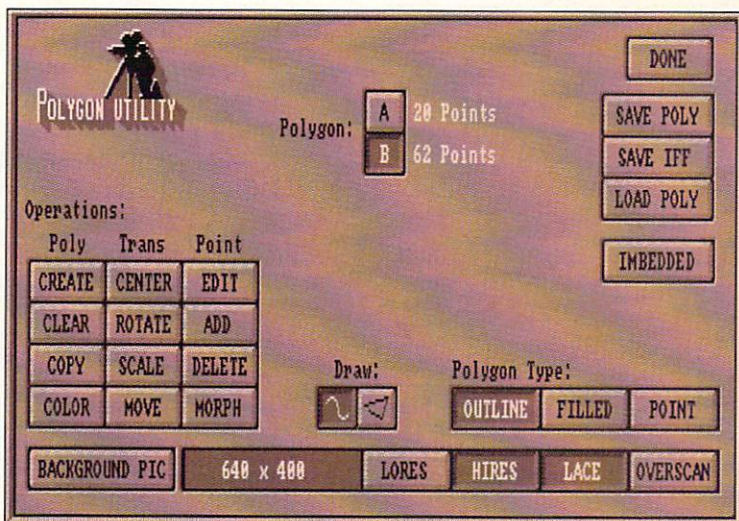
Within a *Director 2* script/film, you can use ARexx both for sending and receiving commands. The DEdit editor is excellent, and quite small so it loads quickly. Documentation is superb and there are plenty of examples. *D2*'s player program, *Projector 2*, is freely redistributable.

Bad things about *Director 2*: You *must* know something about programming to make it truly useful. It would be preferable if button creation automatically created a hot spot, but you must first create your button then create the hot spot. Since this product is essentially a programming language, it can be frustrating when you can't get something to work and you have to keep studying your code to fix it. A stronger Debugger would be nice, although *D2*'s error-trapping is quite good. The editor can shift in and out of *vi* mode (allowing use of UNIX *vi* commands) but sometimes it gets confusing, and you can end up deleting something accidentally. It might have been better to make two versions of the editor so you are either using the *vi* type editor or normal editor, but that's a small nitpick.

CANDO

If the number of freely-distributable programs created with these authoring systems is any indication of their relative popularity, then *CanDo* is probably tops in this group. As a national network Sysop for many years, I've seen thousands of freshly-uploaded programs and files, and I've long since lost count of the number of applications made with *CanDo* that have crossed my screen. Some of them are darned impressive programs in their own right. I use many of them myself.

Although *CanDo* has been around for a couple of years, the long-awaited upgrade *CanDo* 1.5 was released



Director 2's polygon creation utility screen.

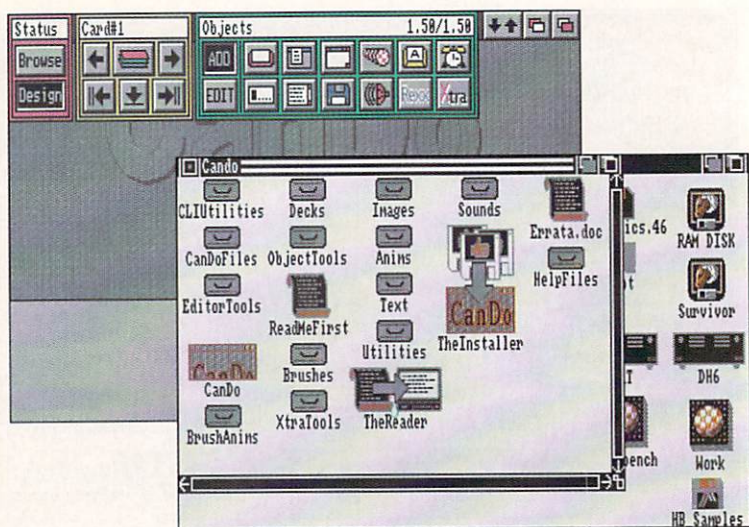
this year after long delays. It adds a number of important features missing from its predecessor, such as database functions, multiple screens and windows, and floating point math. *CanDo* is a professional-looking package. Software installation is handled adroitly by an included program, which was itself written in *CanDo*. (Rumor has it that even *CanDo* was written in *CanDo*!) Among all the programs discussed here, *CanDo* is by far the most modular, and is spread out over more individual files, programs, support aids, libraries, and bits and pieces than any of the others. Installing *CanDo* on your hard disk will create well over a dozen subdirectories filled with hundreds of support files. This scheme is almost 180 degrees opposite to the methodology used by *AmigaVision*, where one large main program contains almost everything. Does it really make a difference either way? Perhaps, perhaps not. I mention it only because recently I had a problem with my hard drive; a few little *CanDo* support files became corrupted and were then deleted while recovering my drive. After that, *CanDo* refused to run when I clicked its icon. I just reinstalled the whole version 1.5 to get everything back in running order, but I was befuddled for a while trying to figure out why it wouldn't run.

CanDo's documentation is excellent. The fat manual gently guides you through the initial installation and tutorials and then on to the software's more complex routines and capabilities. Like all of the programs discussed



CanDo 1.5
 ★★☆☆+
\$149.95
INOVAtronicS
8499 Greenville
Ave. Suite 209B
Dallas, TX 75231
214-340-4991





CanDo's pop-up menu screen, and its many drawers and icons.

here, this can be fairly heady stuff, and it really pays to proceed carefully through your beginner phases, actually *trying* all the tutorials' steps and not just playing with the supplied decks.

CanDo's true forté is as an interface builder for creating or prototyping your own software. If I simply wanted to make slideshows, CanDo wouldn't be my first choice. Although it *can* create slideshows, there are no artsy fades and wipes available here.

CanDo builds its own scripts while you work. You can view these scripts and edit them from inside the program, and its online help facilities are simply outstanding. Once you're satisfied with the deck you've constructed, you can 'bind' it to cando.library and then pass it around to anyone else. They will not need CanDo itself to use your creation. Binding also offers you a way to protect your intellectual property from disassembly. Other CanDo owners can take apart, examine, or modify your work if you give them the 'unbound' CanDo decks instead of a bound version.

To sum up: Good things about CanDo-INOVAtronic offers excellent support. CanDo excels as an interface-building program. INOVAtronic will

even tell you that's its main purpose. Addressing ports is extremely simple. ARexx support is extensive. Creating buttons is easy. CanDo does a great job of keeping track of where it is, and allows creation of lists and variables with ease. Slideshows can be made fairly easily, but there

are no fancy fades or wipes. You can run other programs (such as utilities you keep in your C: directory) from your decks, which makes CanDo useful for building your own set of utilities for customized tasks. For example, you could unpack your downloads by calling Lharc from within a deck that uses a file requester. Freely-distributable decks can be made for non-CanDo owners, who won't even need any kind of player program since the decks can be entirely self-contained. This also offers protection against others taking your work apart and changing it.

Bad things about CanDo- The animation player routines *only* recognize DPaint ANIMs, which tells you right away not to use it for graphics presentation. As mentioned earlier, there are no fancy fades or wipes for presentations. Some programming knowledge is helpful if you want to do more complex projects. If your deck's interface has a *lot* of buttons, screen redraw can get slow, so in these cases it's a lot better to use an image created in a paint program.

HYPERBOOK

Gold Disk describes *HyperBook* as a 'freeform personal information manager.' Of our 'gang of five' programs, *HyperBook* is probably the simplest to use, but at the same time it doesn't offer some of the more esoteric features and capabilities the others boast. Case in point: *HyperBook* has no sound or music facilities at all. What it excels at is organizing IFF pictures, brushes, texts, and lists into pages of presentable material. *HyperBook* is also a new product. It didn't spring forth from something else, and it's still in its first version release.

HyperBook has by far the simplest installation routine: drag the program's icon to the disk of your choice. That's it - no support files, no libraries, no special auxiliary pieces are required at all.

The *HyperBook* manual seems complete and well laid out, and it even has a section for people who don't normally read manuals. The program is actually simple enough for the beginner, and you can build some simple projects right off the bat. The manual is well-indexed, and that plus the program's built-in help system make learning relatively painless.

In addition, the manual has three tutorials, and you get a second disk full of excellent examples. So you can get up and experimenting rather fast. The tutorial and sample projects are easily pulled apart and examined, and you can use bits of them in your own books.

HyperBook has an object oriented interface, which speeds the creation of its projects, called 'books.' Parts of the interface will look familiar to anyone who has used Gold Disks's *PageSetter*, *Professional Page*, or *Professional Draw*. There are pulldown menus across the top of the screen, and a draggable tool box down the right

HyperBook



\$99.95

Gold Disk

P.O. Box 789,

Streetsville

Mississauga, ONT

Canada L5M 2C2

416-602-4000

screen margin. Although *HyperBook's* requesters are very pretty, I didn't care much for the look of their non-standard *TransWrite*-style 'OK' and 'Cancel' buttons. And like so many other Gold Disk products, directory requesters don't sort filenames alphabetically until you press the sort button *after* the directory has been fully read in.

HyperBook does have excellent text-control features, such as character and line spacing control. It offers command over vertical, horizontal, and character baseline. This is useful to make your text fit in a specific screen area or inside a scrolling box. Another good feature is the 'groups' function, which allows you to group a whole set of objects and move, copy, or delete them as though they were a single object. The utility of features like this comes into play once you really get into *HyperBook* and challenge it to let you do the things you want to do. Any item on a page can be made into a button that launches an action, such as showing a picture or displaying additional text. Buttons can also launch AmigaDOS programs, ARexx commands, and ARexx macros, or move you to other pages of the book for more interaction.

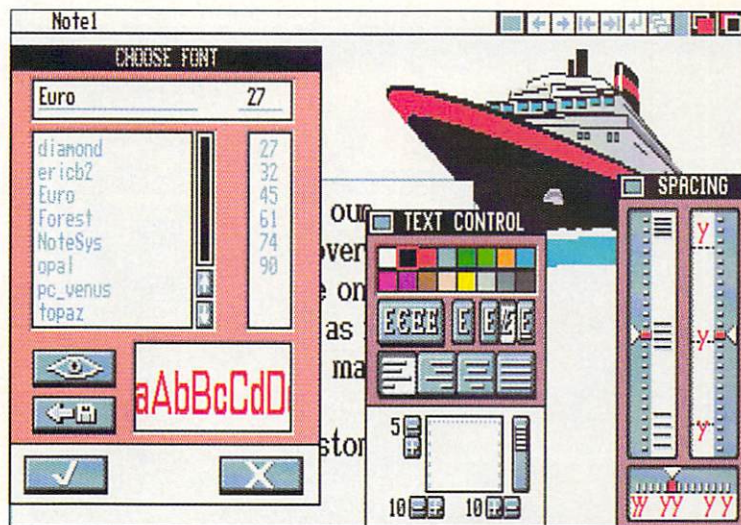
Any graphic, button, list, etc., can be scaled, moved, and changed at any time, so a design is never locked in until you want it to be. Page elements can be combined and/or layered to create complex books.

You can use *HyperBook's* 'bin' feature to put any object (picture, text, list, button, etc.) into a holding area and use it as temporary storage. Once an object is in the bin, you can grab it (each object lives in the bin as an icon) and move it to another page of your book. This makes it easy to quickly move objects from one page to another, or duplicate them on many pages.

HyperBook offers some very pretty effects, wipes, and page transitions. You select the one you want from a list of their names, rather than from a group of pictograms as in so many other programs. I'm still torn as to whether it's easier to choose transitions from lists or from rows of icons. I could find no way to create my own wipes in *HyperBook*.

There's a distinct lack of freely-distributable *HyperBook* books out there for downloading. This is a shame, since the program really is very easy to learn, easy to use, and is relatively inexpensive. Gold Disk has cranked out many example disks, including a beginner's tutorial for *Professional Page* and their own product catalog, using *HyperBook*. I'll probably spend some time with *HyperBook* myself, to make some tutorials to aid telecomm beginners who need to know about file archivers and protocols and such. The *HyperBook* reader/player program is freely distributable, but without *HyperBook* itself no one can modify your books.

One of the true beauties of an easy-to-master authoring system like *HyperBook* is this: instead of debating about it, people will use it.

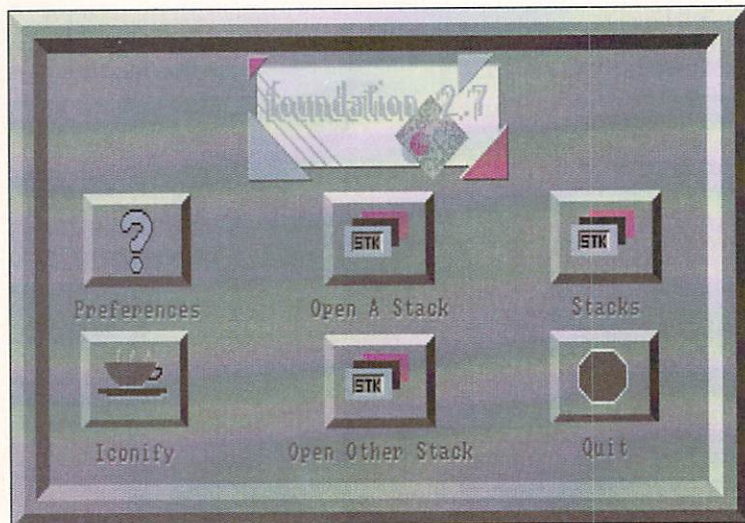


Gold Disk's *HyperBook*, with font, text control, and spacing requesters.

To sum up: Good things about *HyperBook*- The object-oriented interface is attractive and easy to master. It's a feature-laden program, although it can't truly compete with *CanDo* as an interface builder, nor with *Director 2's* amazing graphics control, or some of *Amiga-Vision's* or *Director 2's* wide-ranging control of sound and music, since *HyperBook* has no audio capabilities at all. However, *HyperBook* has many artistic touches, such as its structured drawing tools and the ability to *easily* cut pieces from IFF pictures, remap them to the current page, and scale them to whatever size you need. Via its menus, *HyperBook* can call up your own wordprocessor or paint program. Plenty of good tutorial examples come with this program. Text handling is superior. Documentation is excellent.

Dislikes: The 'OK' & 'Cancel' buttons should be replaced with more conventional ones. There's no hot-key activation of menu commands, or at least they are not shown in the menu itself. This is a standard Amiga feature and *all* software should have it. Power users need to have hot keys, and without them it's difficult to master the software or use it quickly. There's no direct serial port access, and in multimedia this is a necessity! *HyperBook* doesn't have much depth or extra features (i.e. laserdisc control!) and it must rely a *lot* on ARexx support, which means learning the ARexx language to tap into that kind of power. In fact, *HyperBook's* major strength is probably as a graphical user interface for ARexx programmers.

Any item on a page can be made into a button that launches an action.



The main *Foundation* control screen.

FOUNDATION

Let's establish two things about *Foundation* right up front. First, yes, this program is the outgrowth of *Ultra-Card*, previously published by Intuitive Technologies. Secondly, it is a virtual clone of Macintosh *HyperCard*, although it's even more powerful, runs faster, and performs many feats *HyperCard* can only dream about. Folks who have used *HyperCard* will feel right at home using *Foundation*. *Foundation* is also the only Amiga

authoring package that employs a true hypertext system, and, if you persevere, it could turn out to be one of the most powerful pieces of software you have ever used.

As an Amiga owner, tapping into *Foundation's* strengths could be initially difficult. This is not because the software is all that difficult to use, but because the documentation leaves you too much to your own devices. You have to discover on your own many things which could have been more clearly explained in its pages.

I'll cite an example. *Foundation* comes with its own hard disk installation program. The install program itself is a *Foundation* 'stack,' and by launching it you'll see that you're already running and using *Founda-*

tion. Once you've performed the install, and *Foundation's* various directories, subdirectories, modules, and examples are on your drive (and it installs nearly as many files as *CanDo*), you click open your newly-

created *Foundation* drawer and find not one, but three very large icons, representing three programs, each of which is roughly 500K in size. You race to the manual to learn which is which, and why there are three of them, but the information is simply not presented in a lucid format in that book. These three programs all appear functionally similar when run. A call to *Impulse* enlightened me (and thereby you) on what these three programs are:

Foundation itself is the master program wherein you author and review your stacks. *FoundBrowser* appears to let you change and save stacks (something a 'browser' or 'player' program normally does not do), but it actually throws away changes when you move to another frame. (Stacks can be made up of one or many frames). *Found Browser* is for distribution to people who want to view stacks, see how they're constructed in its Modify mode, and play around with changing properties. It's freely-redistributable, so dealers can give out samples to customers, or user groups can pass around their members' creations.

The third program, *FAST.RT*, is the runtime browser, with which you can distribute stand-alone applications. There's a *Foundation* routine called 'Commercialize stack' that locks out user access to the scripts and underlying data of the stack, yet allows a user to save data to the stack like a regular program. In this way you can make a database-type program that can be used to save data back to its stack, yet not allow the user to view or alter the underlying scripts. Stacks that have been 'commercialized' will not run in the 'real' *Foundation* program, only the *FAST.RT* version. They can be password encrypted, and a user would need the password to unencrypt them via the commercialize stack so that the stack could be changed.

Foundation's manual is laid out mainly as a reference. There are several examples of how stacks do things, but there are really no tutorials on how to create an entire application stack from scratch. The manual instructs you to run the function 'Create stack' to make a new stack. It then leads you through some very simple examples of button creation and how to link a button press to a sampled sound, an IFF animation, or picture.

There's a nice bunch of supplied example stacks: a phone book, a calendar, and a huge online-help 'Encyclopedia' stack with hypertext links that references every one of *Foundation's* commands and functions. You are advised by the manual to rip them apart and figure out how they work. This is good strategy for people with some time on their hands.

You can use any part of the example scripts in your own stacks. This helps you get the pieces you need to start stack creation. To aid in creating screen objects, there are macros for various functions such as playing ANIMs and sounds, showing pictures, performing ARExx operations and so on. This should all get easier



Foundation



\$250.00

Impulse

6870 Shingle
Creek Parkway
Minneapolis, MN

55430

800-328-0184



and more transparent as you familiarize yourself with *Foundation* and start making your own macros to perform the little tasks you repeat often. *Foundation*'s unique 'macro recorder' is a godsend and a real time saver, and the manual explains it well.

Foundation has extensive hot key support, and you can redefine keys to your liking. Almost every aspect of *Foundation* can be defined by the user; it's a very open and versatile system. *Foundation* even offers a way to include 'C' programs.

Foundation, like *Director 2*, allows you to configure existing programs such as text editors and paint programs into its menus. These can then be called on demand from inside *Foundation* and their results imported back into your stacks.

Let's not kid around... *Foundation* is an authoring system for power users, and as such it has very few limitations but presents many challenges. It even incorporates CDTV commands, like 'CD.play', 'CD.play.track,' 'CDTV.mouse,' etc. and will even run on CDTV, although you need a very stripped-down CDTV environment, keeping as much RAM free as possible.

One more word on *Foundation*'s past life: it will import existing *UltraCard* stacks! If you follow such matters, you probably heard there were problems in getting after-purchase support for *UltraCard*. Since the program has evolved into *Foundation* and been taken over by Impulse, support is no longer a problem. Steve Gillmor, Impulse's V.P. of Software, provides extensive support for *Foundation* problems, and this fact alone will take *Foundation* farther than *UltraCard* was ever allowed to go.

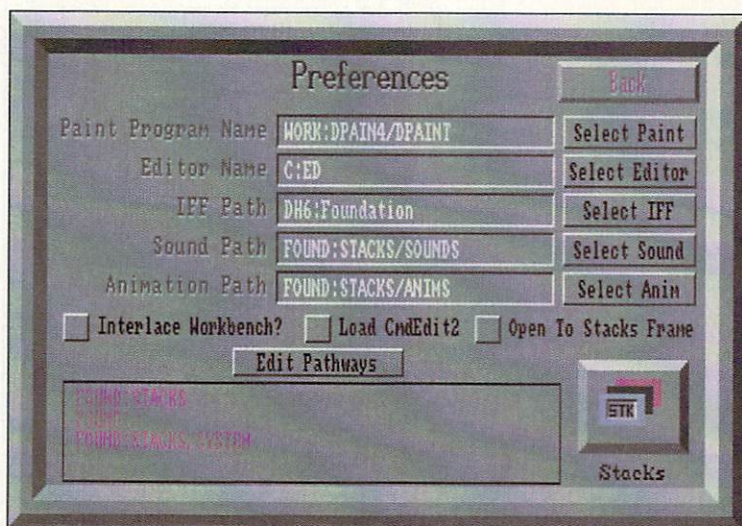
Beta testers have been beating *Foundation* to death the past few months, and those I spoke with are happy with the results. There is an entire Amiga computer lab at the University of Arizona using *Foundation*, and many of the students and professors there, devoted Mac users, have embraced this software immediately; it has turned them on to Amigas like nothing that's come before it.

With a better introduction and orientation section in the manual, and more and deeper tutorials, all of this power could be more easily grasped by *Foundation* novices who have never touched *HyperCard*. And please, Impulse gang, a larger font size and some screen shots to break up those acres of tiny text in your manual would really help ease my aching eyes.

If you purchase *Foundation*, you may even want to pick up a couple of good third-party *HyperCard* books at your local computer store. Honestly, the two programs are similar enough that this isn't as foolish as it sounds.

OTHER TOOLS

While all these products are great for arranging and sequencing Amiga graphics into presentations, you



Setting *Foundation*'s preferences.

really need a good image processing product in your arsenal of tools. I strongly recommend ASDG's *Art Department Professional V2* to anyone who is seriously involved with graphics. With its new muscle, and its ARexx port, it's simply the most useful and valuable tool you can own to massage your graphics files and bring in alien formats. And, of course, purchase the ARexx language, (which is included with the new AmigaDOS Release 2 package). If you don't plan to spend \$100 to upgrade to Release 2, the fifty bucks or less you'll spend on ARexx will reward you a thousand-fold in the increased power and versatility you'll get from these and many other Amiga programs. (ARexx is \$49.95 from Wishful Thinking Development, PO Box 308, Maynard MA 01754.)

From our Just So You'll Know Department: I didn't beta test any of these products before they shipped to the public. I'm not financially involved with any of the companies who publish them. I have no axes to grind, and I don't have any hidden agendas. In a small, competitive market like Amiga software, with so many similar products chasing the same customer dollars, I thought it was important to make these statements. - Harv

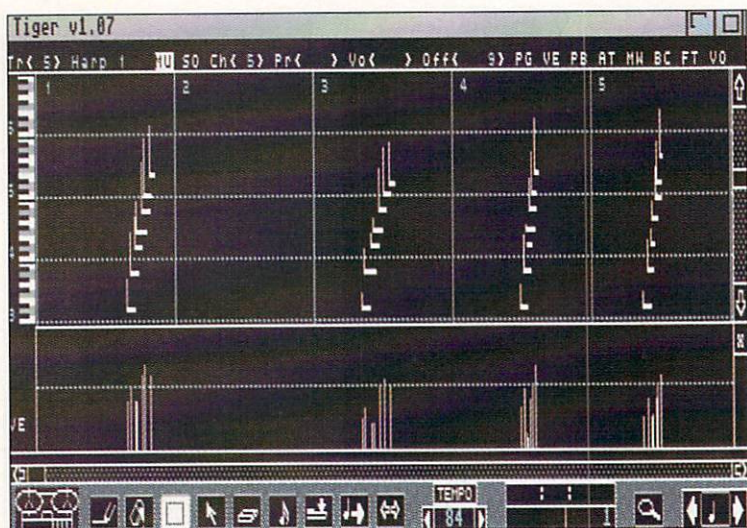
Special thanks to:

Rusty Mills, Phil Roach, and Steve Tibbett.

||||| ◆ |||||

Tapping into
Foundation's
strengths could
be initially
difficult.

||||| ◆ |||||



Note and controller graphic editing in Dr. T's *Tiger* module.

Among a growing number of MIDI sequencers that exploit the glamor of mouse-driven, bitmapped interfaces, Dr. T's *KCS* seems dedicated to the belief that music composition ain't purty. And if you're using *KCS*, it ain't.

Until this latest incarnation, Version 3.5, *KCS* lacked even the graphic editing features that have become industry standard on most other MIDI sequencers. Instead, *KCS* remained faithful to the detailed, yet difficult power of MIDI event list editing. Rather than sketch

gracefully flowing curves in a graphic editor, *KCS* had you at the 10-key pad, punching in MIDI controller numbers like a toe-tapping accountant.

So, when faced with yet another composition project on the usual "We Need It Yesterday" deadline, why do I invariably reach for this ugly duckling? Because Dr.T's has more power, more real world function, and less interface overhead than any other sequencer in the Amiga marketplace. Like Listerine, it may not taste good, but I'll use it twice a day, or more. It works.

THE OLD STUFF

For those who haven't used *KCS*, here's a quick rundown on its approach to MIDI sequencing.

The program consists of three main editing areas: Track Mode, Open Mode and Song Mode.

Track Mode features a drum machine-like pattern-

based recording environment that allows you to record up to 48 tracks.

Those tracks may be combined into up to 126 sequences in Open Mode. Sequences may be played sequentially, simultaneously, or staggered at start times of your choosing. For instance, two sequences may start together, another might begin three measures later, another six measures later, and still another could pick up when all other sequences have finished. Open Mode provides the most flexible composing environment of any Amiga sequencer.

New tracks or sequences may be recorded either in Track or Open Mode. Therefore, if you've combined a group of eight-measure tracks to create a 320-measure complete score in Open Mode, you may remain in Open Mode and record a new 320-measure sequence. Or you may record entire scores exclusively in Track or Open Mode, depending upon which environment you prefer.

In Song Mode, sequences are ordered end to end (with transposition and tempo alteration options) for playback in up to 16 different songs.

And that fabled but, admittedly, sometimes befuddling MIDI event list editing is available in both Track and Open mode, allowing you to fine tune every detail of your composition.

THE NEW STUFF

The major addition to *KCS* 3.5 is the *Tiger* graphic editor. *Tiger* is a separate module that provides multi-tasking and interprocess communication when loaded from within Dr.T's proprietary Multi Program Environment (MPE). With MPE, music recorded in *KCS* automatically appears in *Tiger* when it is summoned from the MPE pulldown menu. Edits effected in either program show up in the other. So you may move freely between the two, interchangeably event editing and graphically editing data.

Tiger uses a hybrid note symbol/piano roll display that shows pitch and duration with parallel horizontal lines and velocity with vertical "flagpoles." Controller messages show up in windows underneath the note display. Controller data such as pitch bend and velocity are edited by "sketching" curves with the Amiga mouse.

Though *Tiger* only displays data from one track at a time, the ability to visually edit any MIDI parameter provides an additional level of flexibility for *KCS* users. And while *Tiger* isn't as pretty as some other graphic MIDI editors, I found it to be fast, efficient, and especially convenient when editing velocity.

MORE NEW STUFF

For the first time in v.3.5, *KCS* is no longer copy-protected. No more key disk. No more crashing with data

|||||●|||||

Dr. T's KCS V3.5
\$400.00
☆☆☆☆
Dr. T's Music Software
100 Crescent Road, Suite 1B
Needham MA 02194
617-455-1454

|||||●|||||

caching enabled on an '030 machine. Thanks, Dr.T.

KCS v.3.5 also includes a beta version of *AutoMix* v.2.0, along with the earlier release version. The latest (slightly buggy) version of Dr. T's on-screen MIDI mixer includes support for Russ Jones' "Niche" MIDI mixer (if you don't have it, don't worry about it...) and the ability to link up to four groups of faders for simultaneous volume level and pan changes on several channels.

Also tucked into the package are *The Phantom*, a module that adds compatibility with Dr.T's SMPTE read/stripe hardware; *Quickscore*, a notation utility that permits you to display and print (but not edit) MIDI files in standard musical manuscript, score or parts; and *KCS v.3.5 Level II*, which includes the Programmable Variations Generator (PVG) and Master Editor (ME).

MASTERING PROGRAMMABLE VARIATIONS

PVG allows you to perform a number of algorithmic operations on MIDI data to create new variations on existing tracks and sequences. At its best, it produces mind-stimulating fresh looks at old scores. At its worst, it just munges up the works.

Similarly, the ME performs intelligent global editing functions such as selectively combining data in two tracks, deflaming and arpeggiating chords, and thinning controller messages.

The combined power of PVG and ME is overwhelming; unfortunately, so is the interface. Both of these utilities, which are implemented as additional screens in *KCS Level II*, consist of multiple data tables with hard-to-identify relationships with one another. You'll eventually discover the awesome muscle behind these tools, but expect to invest hours and hours exploring their complexities. I recommend starting by using PVG's built-in macros to add some variety to your rhythm tracks.

NOTHING'S PERFECT

Bad points? No ability to edit directly to SMPTE time code. No ARexx port for use with *AmigaVision*. Some limitations reading old *KCS* .ALL-format files. Minor problems with importing standard MIDI scores (Hint: check track one to be sure it's long enough to play the sequence). A few buggy commands (I had uneven success with "All Tracks To Sequence"). A tendency to "pile up" keystrokes in *Tiger*. However, most are annoyances and not fatal, though I encountered an infrequent guru when running several modules under MPE. By and large, though, the code is stable and reliable.

With this release, you can count *KCS* among the Amiga MIDI programs that work best with an accelerated Amiga. *Tiger* and *Quickscore*, in particular, benefit from the use of an Amiga 3000 or the addition of a



The QuickScore module in *Dr. T's Keyboard Controlled Sequencer*.

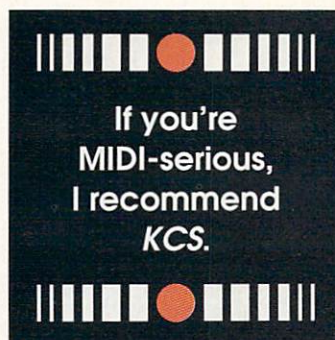
68020- or 68030-based accelerator in an A500/2000.

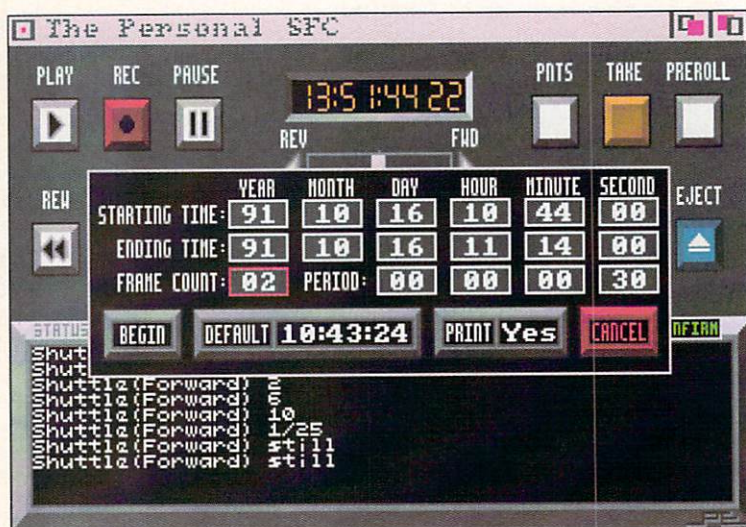
As far as ease of use is concerned, the bottom line of Dr.T's *KCS* is that it hasn't been gussied up for the hoi polloi. Dr.T's interface doesn't pander to the MIDI unwashed, nor has it been optimized for a quick learning curve. So newcomers find it hard to use and hard to learn.

The graphic editing of *Tiger* does shorten the learning curve. It's a significant addition to the *KCS* arsenal that greatly simplifies editing controller messages and makes v.3.5 well worth the upgrade. Yet, it still won't be regarded as 'pretty' by Amiga users who have grown accustomed to facelift sequencers from other publishers.

But if you're more interested in writing music than preening a pretty interface, if you can't abide mice and icons standing in the way of creative spontaneity, if you're MIDI-serious, I recommend *KCS*.

The honest truth is that Dr. T's *KCS* is tuned for the expert. Yes, the interface *is* hard to learn. But once you develop facility with *KCS*'s homely delights (and improve your skills at MIDI event editing), the interface enables fast, intuitive composition sessions. The hybrid track/sequencer/song approach to composition encompasses a wide variety of personal composing styles, and the PVG/Master Editor screens, though excessively difficult to master, blast open new horizons of musical invention and manipulation.





The main control screen for the *Personal Single Frame Controller*.

Video animation, whether it be timelapse, stop-motion, or single-frame style, is beyond the reach of most of us. Animation usually means spending large sums of money to purchase a VCR capable of single-frame edit accuracy, controllers capable of repetitive and accurate editing, and computer animation software that can drive the controller hardware and VCR. Well, now you can say 'goodbye' to most of these expensive requirements, because the *Personal Single Frame Controller* from Nucleus Electronics offers a low-cost solution to this expensive problem. For \$425 the *PSFC* gives you connecting cables and software that allow your Amiga to replace the expensive external edit controller in animation setups.

RS-422 REQUIRED

The *PSFC* is based on software that multitasks on your Amiga. The only hardware needed is the connecting cable that's included in the package. Hooking up your recorder to the computer is simple, providing you have a VCR with an RS-422 interface. What's that, you ask? Simple: RS-422 is a serial data communications protocol similar to (but not quite the same

as) RS-232, which is what computers use to talk to each other. There are data differences, and some slight electrical differences as well. (Hooking up a RS-232 device to an RS-422 device could result in smoke - don't do it!)

The connecting cable furnished by Nucleus converts the signals so your computer can talk to your VCR.

That is, if your recorder has an RS-422 interface. Until recently, most editing recorders were controlled via connectors with as many as 34 pins, known as "parallel" interfaces (again, not the same as your computer's parallel port). Today, professional editing VCRs and other video devices are being supplied with the RS-422 interface. With all video equipment using the same communications protocol, eventually all of our video equipment will be able to talk to each other. It's already not uncommon for an edit controller to command several VCRs and also an S.E.G., all of different brands and models. Unfortunately, not all recorders have serial control yet, but it's an option on some and other pro decks can be used with a third-party parallel-serial converter (sold for about \$1000). With your computer controlling your VCR directly, there's no need for the expensive hardware box that used to act as a go-between.

SMPT TIME CODE TOO!

The *Personal SFC* can make dead-accurate 'insert' edits because it uses (and requires) SMPTE timecode on your videotape. SMPTE timecode is simply a data track that gives a unique number to every individual frame of video (i.e. 22:13:02:29 = hrs:mins:sec:frames). Most professional recorders feature this or have it available as an option. The timecode number is used by the software to find and catalog where every edit point should occur. The editor performs an edit *only* at the specified point on the tape. The edit process is aborted if that frame is never found. SMPTE timecode therefore gives you repeatable, accurate accessibility to every point on your tape.

The *PSFC* is as simple to use as it is affordable. Upon starting, it quizzes your VCR to find out what model and brand it is. With that information, it sets up standard defaults for that recorder. Any of these default settings can be altered and saved as a new default file. Exiting this screen takes you to the control screen, where you find all the necessary VCR transport controls, complete with a shuttle/jog control and a SMPTE timecode read-out. A window at the bottom displays text confirming your actions and telling you what the program is doing. Error messages are also displayed here. Several buttons allow access to the various features of the program, such as setting edit points, time-lapse animation, single-frame animation, edit pre-roll, and one feature not found on even very expensive editors, a Tape Eject button.

SINGLE-FRAME CONTROL

The program's Animation button takes you to a screen where you build a sequence of images or animations to be edited together. You determine how many frames each

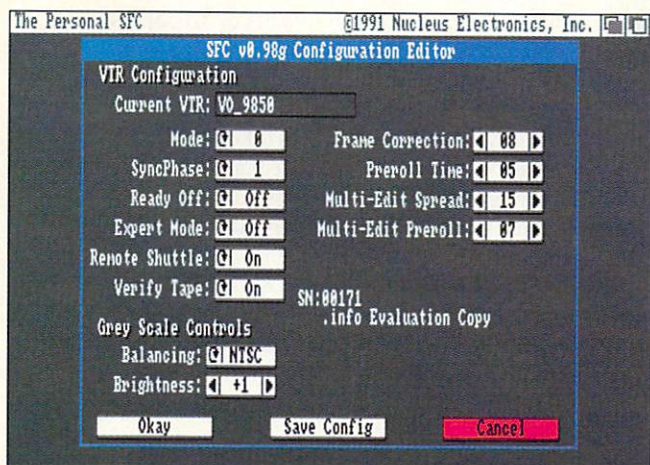
Personal Single Frame Controller

☆☆☆☆

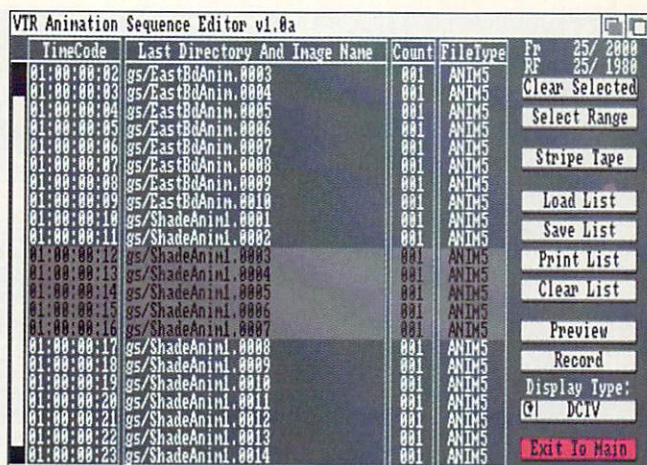
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Editing the VCR configuration file in *PSFC*.



Editing an animation sequence.

image will occupy, as well as the point on the tape at which it will be recorded. The type of images that may be displayed and edited include Amiga IFF files (of course), IFF ANIM files (which it disassembles into separate frames), *HAM-E*, *DCTV*, *Firecracker 24* files, and *Video Toaster* frames. A fascinating feature of the program is its ability to take the entire list of images and put them together into a grayscale animation you can preview, allowing you to double check your work before actually laying it down to tape. A range of frames can be looped or repeated; sequence lists of images can be saved to disk, thereby saving work to recreate sequences. If an image appears more than once in the edit list, the *PSFC* will record that image onto the tape in one pass, making multiple insert edits on the fly. This can save time as well as wear and tear on the VCR. If your ANIM contains a bad image, you can easily specify to have just that one frame redone - there's no need to redo the entire sequence. The *Personal SFC* also works quite well with NewTek's *Video Toaster*, either displaying already rendered frames and single-framing them from the hard drive via *Toaster Paint*, or rendering them in *LightWave* and shooting them out one at a time as they finish.

TIME-LAPSE ANIMATION

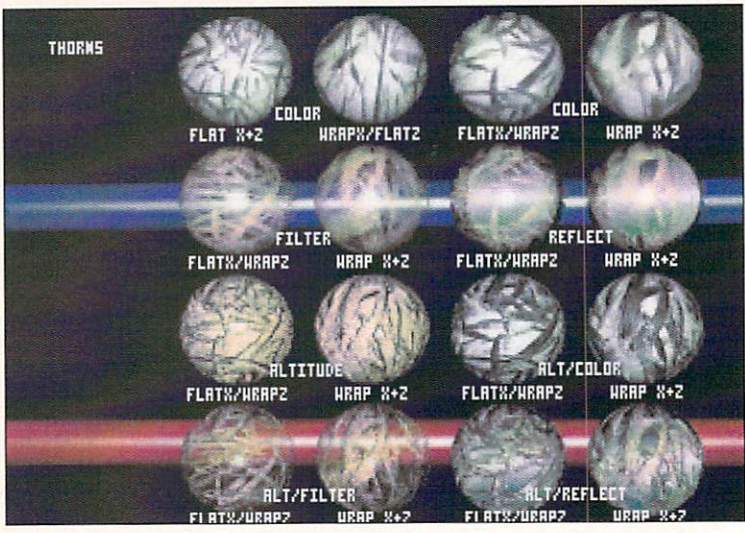
One of my favorite animation effects is time-lapse animation, where the clouds seem to boil across the sky and buildings take shape before your eyes. It's just a matter of recording a frame every so often instead of every 30th of a second. The *PSFC* automates this process quite well. After calling up the time-lapse requester, you can enter the day and time when the time-lapse should start, when it should end, how many frames to record in each edit, and how often to record it. Due to preroll and edit timing, it's not feasible to record any more often

than every 30 secs; but you'll find that a bit too short for most applications, anyway. The sweet part of this is that the *PSFC* reads your Amiga's clock to determine what date and time of day it is. Your recording will start without you even being in attendance, and could finish up without you as well. It's really neat to record a time-lapse of the sunrise while still snoozing away in a comfy bed.

The *Personal SFC* is the answer for many wishing to get into video animation. Although its requirements for SMPTE time code and RS-422 ports may mean buying a fairly expensive professional VCR, you'll be ahead in the long run. Meanwhile, the *Personal SFC* will provide truly professional control of the single-frame process. It's very well thought-out and full-featured. The program can easily be operated without looking at the manual, but read it anyway since it's clear and concise.

I used the *PSFC* with a Sony VO-9850 3/4" U-Matic SP editing recorder with no problems save one. Since my studio Amiga was too far away from the VCR for the supplied 6' cable to reach, I used a 9-pin Radio Shack joystick extension cable to make up the distance. Bad move; that also made for misread timecode and edit commands, since the unshielded cable leaked data like a sieve. Call Nucleus for a cable extender to do it right. My last word on the *PSFC* is this: my studio's RS-422/SMPTE-based edit controller cost \$11,000 and doesn't offer any of the features found in the *Personal SFC*. Maybe I should ask for a refund...

The *Personal SFC* is the answer for many wishing to get into video animation.



All these surface attributes and image maps are from *Surface Master* and *Map Master* except for the cloudy sky in the backdrop. Some algorithmic textures were also used.

images are applied to the surfaces of 3D objects). Arguably, the two most popular rendering packages at the moment are Impulse's *Imagine* and NewTek's *LightWave*. Each of these offers several surface attributes, including algorithmic textures (like wood and bricks), and image mapping (used for color, transparency, reflectivity, and bump mapping).

Thanks to Computer Imagery, users of both *LightWave* and *Imagine* also have some important technical expertise to draw on. Louis Markoya, certainly one of the most accomplished artists to lay hand on a mouse, has prepared a couple of products which aid the artist in understanding and using these powerful features.

SURFACE MASTER

The *Surface Master* package consists of an attractive manual and a single disk. The disk has an interactive presentation illustrating all the surface attributes in *Imagine*, including the important ways in which attribute settings interrelate. For reasons of disk and memory space, these examples are given as low-resolution HAM images; as we'll see, if you're using a display enhancer it's an easy matter to get a look at them in higher resolutions and greater depth of color.

The examples give a good overview of the Attribute parameters and all of *Imagine*'s algorithmic textures. (These are textures that *Imagine* can map to the surface of an object without the use of 2D imagery.) *Surface Master* explores many of the possibilities of using these parameters, but be warned that the total possible number of combinations are astronomical in their variety. The best that a tutorial can hope to do is to demonstrate the major types of surfaces available, to guide your own experiments along similar lines. This *Surface Master* does quite well.

Another directory on the disk contains all the objects used to create the presentation. With these, a user can re-render the examples either in interlaced HAM or, if a 24-bit display is available, in true color. This is recommended, since the effects are much clearer and more beautiful in higher resolution.

Also included is a collection of Attribute files that the user may load onto objects. These include metals, gemstones, crystal and glass, and many more. Beginning users will find these Attribute files alone worth the cost of admission.

While brief, the *Surface Master* manual is packed with valuable information. *Imagine*'s own manual doesn't do justice to the Attribute and Texture parameters, so here we can benefit from Mr. Markoya's experience. Particularly important are the ways in which some parameters (like the index of refraction) affect others. Despite using *Imagine* on a daily basis since its release, there were a few eye-openers in the *Surface Master* manual for me.

So you want to be a 3D rendering artist. You've chosen your tools, you've learned the ins and outs of your modeling and rendering software, and you sit down with great anticipation to lay out and render your first real image. When it appears in all its glory on your monitor, you lean back, admire the checkered ground stretching out to a virtual horizon, and gaze in wonderment at the distorted reflections of the ground and sky in your shimmering chrome spheres.

What's wrong with this picture? It's been done. Man, has it been done. Done, overdone, redone, and done to death.

Obviously you can only do so much with spheres, no matter how artfully they refract and reflect light. Creating a realistic scene will mean that you'll have to learn how to model any object you can imagine. Having done that much, you may find that your work still has the shiny, perfect look that says 'computer graphics.' While this is appropriate in some scenes, it is certainly not all you need for a 'real,' convincing world. So beyond the problem of building objects is the

question of how their surfaces should look.

Well, you're in luck there. All of the current rendering software for the Amiga offers some choices of surface properties and image mapping (a process in which 2D


SURFACE MASTER
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 ★★★★★
\$39.95
MAP MASTER FOR
IMAGINE
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This apparently modest product is an invaluable aid for *Imagine* users. You will find it useful to re-render the objects in as high a resolution and depth of color as you can, but even in their low resolution the examples are very informative: and for the rest, the manual and example objects and Attributes are priceless.

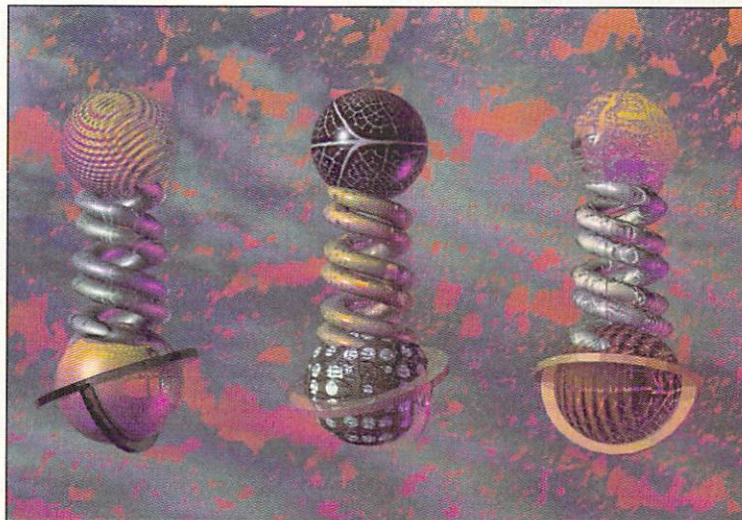
MAP MASTER

Two versions of *Map Master* (for *Imagine* and *LightWave*) take up where *Surface Master* leaves off. This three disk set concerns itself with image mapping and its uses. Both versions include the same set of fourteen greyscale scans of natural surfaces, which range from microscopic views of tree cells to reptile skin and leaf veins. Although they use the same image data, the two versions then diverge, since the object formats and techniques in *Imagine* and *LightWave* vary.

Map Master for LightWave comes with a looseleaf manual that can be slipped into the *Video Toaster* binder. Like *Surface Master*, its first part is an interactive tutorial. Again the examples are in low-resolution HAM format, but all the object data is included, and the manual describes how any of the examples can be easily re-rendered with *LightWave* in 24-bit color. First the basic wrapping options are shown, illustrating how planar, cylindrical, and spherical mapping affect the appearance of an image map; next is a series of pictures that show how the same image can be used as either diffuse or specular, reflect, bump, or transparency maps. Also shown are some combinations of these main options. A picture of this type is provided for each of the fourteen image maps. With this presentation as a guide, the user can then re-render a desired example within *LightWave*, and rotate and zoom in on the objects, to examine them in greater detail. All that's needed is to install the image and object files in *LightWave's* default directories.

The manual for *Map Master for LightWave* is brief. It consists of a description of wrapping options presented in a readable, conversational manner with some useful insights. This, along with the instructions for re-rendering the examples, is really all that's required. The true value of this product is in the image maps themselves, and the user will learn most of the material by loading the scenes into *LightWave* and experimenting with them.

Map Master for Imagine takes a very similar approach, though the techniques for applying image maps are different. *Imagine v1.1* (the most recent version at the time of writing) is required. The same two disks of image maps are included, but the program disk contains a set of rendering projects for *Imagine*. The interactive presentation illustrates all mapping options and the use of those options with the supplied image maps. In this respect the two *Map Masters* are nearly identical,



This sample from the *Map Master for Imagine* presentation shows that many different effects can be created with a single image map.

although the data that produces the examples is necessarily different. Again, for best results it's advised that the user re-render the examples in the highest resolution and depth of color available.

Because Altitude mapping in *Imagine* requires much more memory than Bump mapping in *LightWave*, rendering some of the examples will be impossible on some systems. For the most part, the examples require only two and a half to four megabytes, but one requires seven megabytes.

The manual for *Map Master for Imagine* is the same half-page size as the *Imagine* manual. Its description of mapping techniques is more detailed than the *LightWave* version, which is helpful since the *Imagine* manual itself is not clear on the subject. As with *Surface Master*, this manual is very useful for both beginning and experienced users - it's not often one gets to pick as accomplished a brain as this.

In all other respects the two versions are basically the same.

Whether you've chosen *Imagine* or *LightWave* (or both) for your own work, you'll find much valuable information, not to mention some fascinating image maps, in these products. They're very useful additions to any 3D artist's shelf, and they've been welcome guests on mine.



MAP MASTER FOR LIGHTWAVE



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Chris Zamara shares his insights into Amiga fonts.

Many Happy Return Codes

by Jim Butterfield

When you start an Amiga program, it usually rolls up its sleeves and goes to work. But sometimes - it doesn't. You might get a screen flash, or a cryptic message, or even a "template" telling you how to use the program. You might get nothing; not even a hint as to why the program refuses to do the job.

Programs can leave an error trail. "Return Codes" are intended to give you (or your script) a hint as to the nature of the problem.

Error Messages

You may have noticed that an error message sometimes appears across the top of the Workbench screen. No,

I'm not referring to the dreaded Guru, just to text that appears in the top line. The information is often cryptic, saying something like "Error While Opening ZaxFest: 205".

Code 205 is one of my favorites. Look it up in your AmigaDos manual, and it will translate to "object not found", which in turn means that the computer couldn't find file ZaxFest. Or an easier way is to go the CLI/Shell and type the command FAULT 205, which will give you the translation right away. Table 1 shows a few "popular" error codes.

The CLI/Shell is likely to give you an intelligent message rather than a number, since the FAULT command will automatically be called in. If you have deleted FAULT from your C library for some reason, you'll get the code numbers. Maybe you like code numbers.

You may also use the command WHY to ask a CLI/Shell window why the last program failed. But that program wasn't run from the same window (the same "process"), command WHY will produce the response, "The last command did not set a return code". No help. Even worse: after I tried commanding *MORE RAM:ZAXFEST*, which generated a program response of "Can't open file", command WHY gave me a ridiculous number.

The DOS Error numbers - as outlined in your AmigaDOS Manual or translated by command FAULT - are supplied as a *Return Code*. This information is technically called *Return Code 2*. That's because there's also - sometimes - another return code, called *Return Code*. No, it's not called *Return Code 1*.

The "Return Code"

When a CLI program terminates, it supplies a Return Code - a number which says how things went. Workbench-started programs do not, but that's OK: the Return Code is intended for use with scripts. You can read hard details in the AmigaDos User's Manual (look under IF and FAILAT). My personal interpretation of what the program says:

Return Code (RC) 0: I'm cool.

RC 1 to 4: Trivial trouble, I breezed through.

RC 5 to 9 (WARN): I did the job, despite ditzy bits.

RC 10 to 19 (ERROR): I struggled through, with heavy hiccups.

RC 20 or more (FAIL): Major pain, no gain.

There's a "secret" Return Code of -1. If a program delivers this one, it says "We're strangers. Forget that we ever knew each other". A Return Code plan should be part of a program. Assembly language programmers create a Return Code value by putting it into register D0 just before terminating the program. In C, you would use function Exit(*n*), where *n* is the Return Code value.

A script may test the Return Code left by a program by using the IF command. More programs should leave meaningful Return Codes, and more scripts should test them. But there's a problem: multiple tests don't work.

One Shot

Here's the trouble: All CLI commands produce a Return Code. IF is a command. Use IF, and it will leave behind a Return Code that will destroy the earlier value.

If you wanted to test IF WARN, and then IF ERROR, and then IF FAIL, forget it. The first one will work, and the others will test how the previous IF behaved. By the way, it's quite possible to code commands to "pass through" the Return Code - the RC programs described later do just that. But the standard C command IF (and ELSE, and ENDIF) don't work that way; the Return Code value is wiped forever.

What To Do

Mostly, you have to live with it, although DOS 2.0 has some new features that make it possible to capture the Return Code. Alternatively, I've donated a couple of Return Code programs to the Amiga Freely Distributable Library (Fish) 502. *LogRC* and *GetRC* will help you capture and hold a Return Code, and do further testing if you wish.

With DOS 2.0, you have "local variables" to help you. You may take

.info technical support

the return code value from variable \$RC. In particular, the command `SET MyRC $RC` will copy the Return Code value to a variable of your choice; after that, do your testing on the copy. In the example, you could test `IF $MyRC EQ 0...` By the way: you can catch either the Return Code, local variable \$RC, or Return Code 2, local variable \$Result2; but as far as I know, there's no way of grabbing both. The command that copies either destroys both.

It's worth mentioning that programs can be quite expressive in explaining their problems. Requesters, alerts, or messages to the output window can deliver much more information than a simple numeric Return Code. But the Return Code has this special merit; since its value can be tested by a script, it can cause the Amiga to undertake a whole sequence of scripted actions when needed. That's in CLI only, of course.

GetRC and LogRC

These tiny programs can run on any Amiga system. `LogRC` will not be useful on systems prior to 1.3, since the ENV: environment was not implemented before then.

`LogRC` puts the current Return Code into the environment area. If you're working in CLI/Shell number 1, `LogRC` will put a string showing the error level into an environment variable called \$Return1. Your script may then test it repeatedly with syntax such as:

```
IF $Return<$$> EQ "WARN" ...
IF $Return<$$> EQ "ERROR" ...
```

The value in that environment variable won't change until you call `LogRC` again. Thus, you may repeatedly test for as many error levels as you wish.

If you'd just like to read (or display) the error level string, use the command `'GetEnv Return1'`. `GetEnv` is the proper way to read environment variables, although they can be reached as files contained within ENV:.

`GetRC` may be used in either two ways. `'GetRC'`, by itself, causes the current Return Code value to be displayed. `'GetRC <number>'` sets the Return Code to the (decimal) number supplied.

Thus, `'GetRC 0'` followed by `'GetRC'`

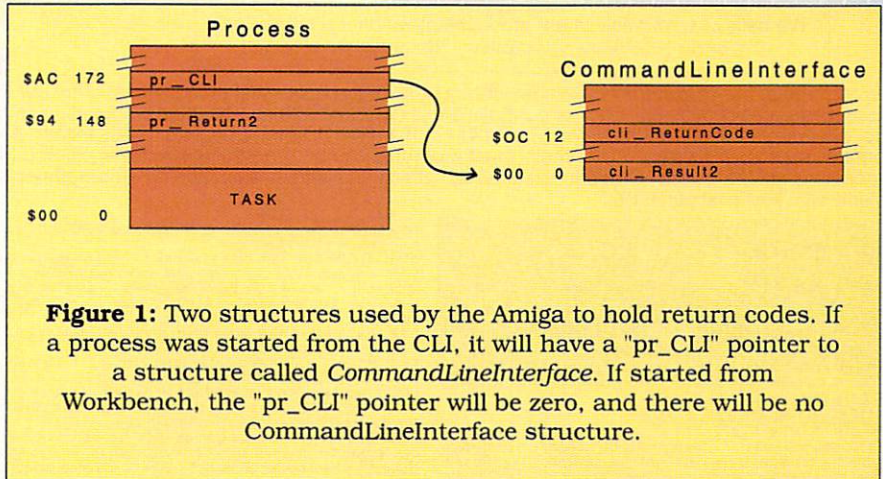


Figure 1: Two structures used by the Amiga to hold return codes. If a process was started from the CLI, it will have a "pr_CLI" pointer to a structure called *CommandLineInterface*. If started from Workbench, the "pr_CLI" pointer will be zero, and there will be no *CommandLineInterface* structure.

Table 1.

Some Common Dos Error ("Return2") Codes.

A complete list may be found in Bantam's "The AmigaDos Manual". Alternatively, the command `'FAULT <number>'` will give a translation of the error. Since most of the error notices I see are associated with file operations, I'll give a few of the more common values:

202 Object is in use. You want to write to a file that somebody/something else is reading, or vice versa.

203 Object already exists. You're trying to rename a file, and there's already a file carrying that name.

204-205 Directory or Object (program) not found. Most often, you've moved a project to a new disk. The newly-sited project, via its default tool, is looking for a directory or program that's no longer there. Call up the icon's INFO and see what it says. Another possibility: you have somehow gotten an icon ('.info' file) that doesn't have an associated drawer or program.

210 Object name invalid. You're trying to invent a weird file name. Cut the funny characters out and try again.

212 Object not of required type. You're trying to 'execute' a project, or a drawer, or a disk. Look at your project's Default Tool.

213 Disk Not Validated. Either you're being too hasty, or you have a bad disk.

214 Disk is write-protected. Yup, you did it again.

216 Directory not empty. So delete its contents if you want to delete the directory.

221 Disk is full. Clear some space or buy a new disk. If you get this on your hard disk, curse loudly.

222-224 Disk protected. Whatever you're trying to do is blocked by the file's protection bits.

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FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

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WB99: Lifestyles - Includes AGene-family tree program that tracks up to 600 people/marriages/etc. Landscape is a backyard CAD program to create gardens/landscapes. Loom simulates an 8 harness loom; experiment with pattern design in an instant feedback environment.

WB98: Business - Includes BBasell a nice, powerful database; BizCalc--a personal or mortgage loan calculator with amortization capabilities. Loop--a flowchart maker, Formmaker - design professional looking forms on your Epson LQ-2500 compatible printer.

WB96: Dupers - Contains XcopyIII and NB which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

WB95: Checkbook Accountant 2.1 This program is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MacHill (screen blaster, hotkey, mouse accel., macro, clock utility), GOMF (a grubster)and PrintStudio.

DD82: Unix - Contains a working demo of Minix - a Unix workalike. Minix is system call compatible with V7 of Unix, supports multitasking and multiple users and many more features too numerous to list here.

DD81: AREXX Tutorial - Includes several sample AREXX scripts and sample programs. Also includes APig, a library that gives you access to intuition from within AREXX scripts.

DD80: VFont System - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!

Other Great Disks

FD5: Tactical Games - BullRun - a Civil war battle game, Metro you play the role of a city planner. Build wisely and your system will

be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.

FD9: Moria - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

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

FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One, VideoPoker and more.

FD12A, FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranooids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.

FD17: Educational Games - This disk includes several games for



the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26: Arcade Games - Marble_slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams, excellent playability and entertainment, Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoid type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Freddy a mario brothers type game, Gerblis a target practice game, Pipeline a German interpretation of Pipe Dreams, Tron a light cycles version, and wetroids a wonderful version of asteroids with a hilarious twist.

FD35 Omega (v.1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better than all previous versions. Play time several weeks or months.

FD37a & b: Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puz - a slide piece puzzle game and construction set.

FD39a & b: Star Trek, The New Generation - This is a, completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Excellent!!! Counts as two disks. Requires 512k memory.

FD44: Game - Mechfight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...

FD49: Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psychoblast new creation idea game.

FD56: Arcade - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.

FD57: Arcade Games - Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychedelic trip through several different worlds--each distinctly different.

FD58: GAMES! - Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum - Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD59: Game Potpourri Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatible printer.

FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferer; a great Dr. Mario clone. Enigma; is it a game or a puzzle?

FD61: Games - Solitaire; great graphics, plays two versions. Kluge; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artificial Intelligence. Genesis; create realistic 3d fractal worlds.

WB4: Telecommunication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols. Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga. Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

WB5 - Fonts #1 - Several fonts (35) for the Amiga, also included are five PageStream fonts, and ShowFont - a font display program.

WB6: Video Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDOS system fonts (many up to 56pts).

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WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

WB14: Video - on this disk are several utilities for the video enthusiast. We have included multiple slates, video titling, Bars and Tone, Gray Scale, Screen fades and swipes, Interlace toggles, and SMPTE Calculators. Also on this disk is a full featured video cataloging program.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors. Includes, TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, TextED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map if image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP.

WB25: Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, LabelPrinter - Disk label printer with very powerful features.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumpToIFF - create 3d animations preserves pallet, and World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!

WB35: 3d Graphics Cont. - World3d - a demo program of a front end for use with DKBRender.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one!

the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio - a well implemented all-purpose printer utility with a very comfortable graphic interface and many advanced features. Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55: Application - XCopyIII - a full featured disk copier, make backups of write protected disks, RoadRoute - find the quickest route from one city to another, highway description included, Diary - a diary program like "Dougy Howard M.D.", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

WB57: Animation - This disk has several "Demo" style animations, including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.

WB59: Business - contains a great, very full featured stock market technical analysis and tracking program, also an appointment calendar, and more.

WB61: Intermediate Utilities - Includes programs to help to drastically decrease flicker in interlace and hires modes (antiflick), an Atari-st emulator, an eprom programmer, turn your amiga into an eight channel digital data analyzer or oscilloscope, and more.

WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timbase, display midi info, file sequence player, and a few scores.

WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, disk track recovery, and forced DISK VALIDATION of corrupt disks.

WB66: Icons #2 - Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.

WB68: Music Utilities - several good utilities for the Amiga music enthusiast, includes, Noisetracker - a great music creation program, Sonix2MOD - converts sonix to .mod files which then can be used by noisetracker, soundtraker, and MED, SpeakerSim - a speaker design tool demo, Wondersound is an additive harmonic instrument design tool with a separate envelope design window and 16 relative harmonic strength and phase angle controls.

WB69: Music - This disk has over 90 minutes of classical and modern electronic music for you Amiga.

WB70: Desk Top Pub - Atcp - transfer Macintosh screen fonts, Mac or IBM format, AFM metric files, to Amiga screen fonts and PPage .metric files. With this program open door to the libraries of Adobe and PostScript type1, Calendar - month templates in PS form, Post - a full featured post script file display and print utility.

WB71: C64 Emulation - The A64 Package is a complete, very powerful, Commodore 64 emulator.

WB75: Music - over 100 instruments files (.inst) and sample sound files (.sfx) for your music programs.

WB76: Applications - This disk contains Stichey - a often requested knitting design program, Lotto - a rather complete lottery tracking and prediction utility, SSS - this screen capture program can grab almost any screen including games, Today - a personal calendar, Tarot - fortune teller, and Grammar - grammar checker.

WB78: AV - On this disk are two Amiga Vision programs (bubbler, sync) written by Lou Wallace, chief technical editor of Amiga World. These programs are marvelous examples of how too's with AV.

WB79: Home & Business Accounting - Includes Ckbact - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worktime - find out what time it is in up to 50 global cities.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.

WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, and Mechanix. Two disk set, counts as one!

WB83: Computer Art - This disk has some of the best Amiga generated computer art that we have collected in the past 5 years.

WB85: Graphics - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice Iff image processing package.

WB86: Amiga Vision - Contains the Centurion Press, An Amiga newspaper by Lou Wallace.

WB88abc: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament. Great search utilities. Three disk set, counts as three.

WB90: Rippers, Strippers and Beats - For the Amiga music enthusiast, this disk contains many programs designed strip music



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from your favorite games and programs. Music can then be played with your favorite Pd Music program. Also contains Drums, a very nice drum machine. This disk can require moderate knowledge of the CLI.

DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples, PopCLI4 - The latest of a must have utility.

DD47: Pascal - This disk contains everything needed to program in Pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.

DD50: ARexx #2 - a must have set of tutorials on ARexx and several useful examples and utilities for ARexx development.

DD51: Circuit Analysis - Aspic (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.

DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFCrunch an excellent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide. ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa. Also several utilities that improve your startup-sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, basic and ttext - several wonderful routines to help in basic programmers, and Xscheme - an interpreted object oriented language.

DD64 Amiga Programmers Manual - The fully comprehensive Amiga programming manual with source code examples and easy to understand tutorials!

DD65 C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes, Sound implementation, Arca game design and implementation, Double Buffering, and others. A must have for Amiga Programmers.

DD66 Programming Toolbox - Many programs to help in your development efforts (most for C some for basic) includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!

DD69: Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrug but greatly improved, Selector - put menu on your workbench screen, and more.

DD71: C Compiler - This disk contains: Dice, Matthew Dillon's full featured, powerful C compiler and environment system.

DD72: VT Emulators - Contains three powerful full featured VT emulators, with many advanced features including Kermit, Xmodem and Tektronix protocols. VaxTerm, VLT, and more.

DD77: Fortran - Contains a full featured FORTRAN77 environment development system. Also contains EzAsm a strongly macro dependent 68000 assembler.

DD78: Menu & System Enhancements - Several neat programs to aid in launching programs from special icons (Next computer style), adding WorkBench menus and more. Also contains many useful programs to determine operation system configuration, memory usage, load and many other important utilizations.

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WB39: Music - Intutracker is a German offering of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.

WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program.

WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!

WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads, ...), people, and transportation.

WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.

WB49abc: Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (colobry, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrllight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunrise, thrsdemo, night, waves, and woor.

WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings, and surreal images often consisting of highly polished spheres and objects. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

WB54: Printing - This disk contains several routines to help with

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would cause value zero to be displayed. You might like to try command 'GetRC -1' to see the curious result of this Return Code.

'GetRC' can be quite handy for testing a script file to see its behavior under error conditions. For example: 'GetRC 5', slipped into a selected location within a script, would fake a WARN level so that you could see how the script reacted.

As indicated earlier, 'GetRC' alone is a handy way of reading the actual Return Code value. It's good as a direct command, and makes no use of the Environment variable system. So if your system is earlier than Workbench 1.3, you can still use GetRC; even so, shame on you ... it's time to upgrade.

The Mechanics

For those who are interested in probing return codes further, Figure 1 shows the two structures of interest. Every program you run is a process, and has a *Process* structure. Part of this is shown in Figure 1; a detailed definition will be found in the include file 'libraries/dosextens.h'. You'll see a long-word called *Result2*; that's where your DOS Error code will be found.

The *Process* structure also contains a pointer (the dreaded BPTR!) to another structure called *Command-LineInterface*. That structure is partially shown in Figure 1; the detailed definition is also in 'dosextens.h'. If a process was started from Workbench, the pointer will be zero and there is no "CLI" structure. If the process was cranked up from CLI/Shell, the pointer will be non-zero and the *Command-LineInterface* structure will be active.

The CLI structure contains two items of interest to us here: *Result2*, usually holding the same value as the corresponding *Process* structure field, and *ReturnCode*. Note that the Return Code exists only in a CLI/Shell-driven program; a program started from Workbench will have no "CLI" structure and thus no place to hold a Return Code.

For another approach to technical insights, you may read the Assembly Language source files that accompany these two programs on Fish 502.

Conclusion

Those of us who write perfect programs, who have flawless files, and whose disks never fail, may not need to know about Return Codes. The rest of us can make use of this Amiga feature.

Reading RAW: console input in ARexx

In which a dangerous experiment yields a useful discovery . . .

by Nick Sullivan

If you've done any programming in ARexx, you probably know how to read input from the keyboard, using PARSE PULL (or just PULL if you don't mind the conversion to upper case):

```
parse pull line
```

Because PULL uses the default input channel, known in ARexx by the file identifier 'STDIN', the input line is read from the console window in which your script was launched. When you type into such a window you get all the normal conveniences of the standard console device, such as line editing and history. More to the point of this article, you also get the normal drawbacks of the console device, among them:

- You must read a whole line, even if you want just a single character.
- Many keys cannot be detected.

These are the arrow (cursor) keys, the function keys, the Help key, and most CTRL key combinations.

Reading from CON

Another way to get input in ARexx is to open your own console window and read from it using the READLN or READCH functions. Here's a tiny script to do that:

```
/* Read from CON: window */
name='con:0/0/300/100/Test'
iw = 'input_win'
if open(iw,name) then do
  s = readln(iw)
  call close(iw)
  say s
end
```

Type this script into a text editor and save it as "ram:test.rexx". When you try it (with the CLI command **rx ram:test**), you'll discover that, although it works perfectly well, it really gains us nothing. Using READLN in a custom CON: window is essentially the same operation as using PULL in the default console. In particular, we still can't read the special keys, and we can't read individual characters.

You might suppose that the READCH function would provide an answer. With READCH, after all, you can specify how many characters from the file you want to read. Suppose we replace the READLN call in the previous script with:

```
s = readch(iw, 1)
```

By the way, in this case the second argument is optional - 1 character is the default read size.

What happens when you try the new script? Well, as expected, the READCH call returns a single character. Unfortunately, it still waits until Return has been pressed before passing back the first input character, and still does not hear the special keys.

Before we move on to another approach, try one more version of the script, this time using the READCH call:

```
s = readch(iw, 1000)
```

What happens now? Do you have to type a thousand characters before the function returns? In fact you do not - one (plus Return) will suffice. The console device handles a read request by returning whatever characters happen to be available at the moment, even if there are less than asked for. At least one character must be available, however, and - in a CON: window - no characters at all are available until Return has been pressed.

The two major 'limitations' of CON: windows that I have been complaining about exist for good reasons. The line editing facility that lets us go back and correct a typo on a CLI command line, for instance, would not be possible if delivery of the line to the CLI were not postponed by the console device until Return is pressed.

The arrow keys are used in the line editing and history facilities of the standard console, so it is not surprising that they cannot ordinarily be read. What about the function keys and the Help key? These are excluded from ordinary

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console input because they are not characters in the normal sense. As a matter of fact, these keys are encoded as *sequences* of multiple characters, rather than as single characters. It would certainly create problems, not solve them, if these sequences could occur in ordinary console input, so they are filtered out.

WARNING: RAW: is intended for the advanced user. Do not use RAW: experimentally.

This stern advice, given in a box of its own for extra emphasis, appears early in the official AmigaDOS manual published by Bantam Books. *Do not use RAW: experimentally.* Sounds dangerous! Is this forbidden knowledge worth the awful risk?

The hazard is somewhat overstated. In actuality, even pregnant women, small children and senior citizens can perform RAW: console input in relative safety. To begin with, opening a RAW: window is exactly like opening a CON: window except that the 'file name' begins with "RAW:" instead of with "CON:". For instance:

```
/* Read from RAW: window */
name='raw:0/0/300/100/Test'
iw  ='input_win'
if open(iw,name) then do
/* and so on... */
```

If you want to try a quick experiment, continue the script like this:

```
do until c = 'q'
  c = readch(iw,40)
  call writeln(iw,c2x(c))
end
end
```

Now try pressing a few keys. In this example, each keypress is translated into hexadecimal (by the C2X function call). This makes the output a bit more difficult to read, but has the advantage of telling us *exactly* what is happening. If you type the word "Raw", you will see this output:

```
52
61
77
```

If you understand hexadecimal and the organization of the ASCII character set, you will be able to figure out the

numbers yourself: they are simply the normal numeric equivalents of the three letters in "Raw". In fact, if you were to read the input string "Raw" in a "CON:" window, and printed the characters in hex, you would get exactly the same values. The big difference so far is that now we can read individual characters, without having to press Return.

Notice that each time we ask for input we request 40 characters. As with the CON: window, the input is satisfied by even a single character - 40 is simply the *maximum* number of characters

that will be returned if they happen to be available.

Into the unknown...

Try pressing a few more keys now, including some that are a bit more exotic: Tab, Del, Backspace, alt-w. As before, the hex numbers you will see are normal ASCII values, even though some are "control" characters:

```
09
7F
08
B0
```

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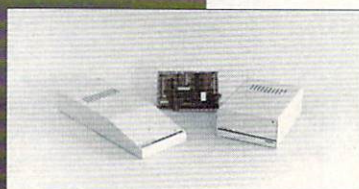
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It is in the next phase of the experiment that we start to see interesting results. Press the cursor up key, just once, and you will see this:

```
9B
41
```

The single keypress has yielded a two-character sequence, in two bursts of one character each. The second character, 41, is familiar: it is the hex equivalent of the character "A". The first character, though, is one you'll normally see only when working with the console. It is called CSI, for Control Sequence Introducer, and it precedes all the multi-character sequences a RAW console produces. In standard Amiga documentation, the cursor-up sequence would be written like this:

```
<CSI>A
```

Try the other cursor keys, and you'll see that the sequences they generate are very similar:

```
9B 42 <CSI>B  cursor down
9B 43 <CSI>C  cursor right
9B 44 <CSI>D  cursor left
```

The function keys generate sequences of three characters, again beginning with the CSI. The "f1" key, for instance, produces:

```
9B
307E
```

Like all the CSI sequences, this one comes in two bursts: first the CSI alone, then the remaining characters. You would write out this sequence as:

```
<CSI>0~
```

Substituting the other digits for the "0" in this sequence gives the sequences for the other unshifted function keys, "f2" through "f10". The shifted function keys yield a four-character sequence, which is identical to the unshifted sequences except for the insertion of the character "1" (hex 31) immediately after the CSI. If you try the shifted "f5" key, for example, the display will reveal:

```
9B
31347E
which is equivalent to:
<CSI>14~
```

The shifted cursor keys, the Help key, and the shifted Tab key are the other keys that produce multicharacter CSI sequences.

```
/* RawRead.rexx - reading input from a RAW: window.
   This demonstration script is a file requester, letting the
   user select a name from either the CD or a specified directory.*/

call addlib('rexxsupport.library', 0, -30)
call InitRRC()

if arg() > 0 then
  dir = arg(1)
else
  dir = pragma('d')

INVERS = 7
NORMAL = 0
iw = 'input_win'
title = substr(dir, lastpos('/', dir) + 1)

if ~open(iw, 'raw:0/10/262/190/'title) then exit

maxvis = word(ReadBounds(iw), 2)
files = translate(space(showdir(dir, 'f', '0a'x), 1, 'a0'x), '0a'x)
itmcnt = words(files)
curitm = 1
topitm = 1

call CursorOff()
call RefreshList()
call DisplayCurrent(INVERS)

do until c = 'lf' | c = 'cr' /* wait for return or enter */
  c = ReadRawChar(iw)
  n = find('DOWN UP F1', upper(c))

  if n > 0 then do
    call DisplayCurrent(NORMAL)

    if n = 1 then
      botitm = min(topitm + maxvis - 1, itmcnt)

    select
      when c = 'up' then do
        if curitm > topitm then
          curitm = curitm - 1
        else if curitm > 1 then do
          call ScrollDown()
          topitm = topitm - 1
          curitm = topitm
        end
      end
      when c = 'down' then do
        if curitm < botitm & curitm < itmcnt then
          curitm = curitm + 1
        else if curitm < itmcnt then do
          call ScrollUp()
          topitm = topitm + 1
          curitm = curitm + 1
        end
      end
      when c = 'UP' then do
        if curitm = topitm & curitm > 1 then do
          topitm = 1
          call RefreshList()
        end
      end
    end
    curitm = topitm
```

continued ...

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Processing CSI sequences

If this welter of details about CSI sequences seems too much to absorb and too fussy to be worth bothering with, don't let it trouble you. All we really need is an ARexx function that will wait for a keypress in the RAW window, and convert any special codes to some palatably cooked form that the rest of the script can enjoy. Once we have encoded those fussy details into such a function, we can ignore them ever after.

Since the CSI sequences fall into fairly regular patterns, they are easy to parse on a character by character basis. In ARexx, however, it is far more efficient to "cook" the sequences by simply looking them up in a table, implemented as a compound variable. The method is this:

- 1) Read a single character
- 2) If it's not a CSI, process it in some way not covered here
- 3) Since we have read a CSI, a second burst will now follow containing the

```
end
when c = 'DOWN' then do
  if curitm = botitm & curitm < itmcnt then do
    curitm = itmcnt
    topitm = itmcnt-maxvis+1
    call RefreshList()
  end
else
  curitm = botitm
end
otherwise /* c = 'fl' */
maxvis = word(ReadBounds(iw), 2)
botitm = min(topitm + maxvis - 1, itmcnt)
curitm = min(curitm, botitm)
call RefreshList()
end /* select */

call DisplayCurrent(INVERS)
end /* if n > 0 */
end /* do until */

say translate(word(files, curitm),, 'a0'x) /* The selected name */
exit

/* Clear list, then redraw from topitem */
RefreshList:
return
writech(iw, '0c'x| |space(subword(files, topitm, maxvis), 1, '0a'x))
```

continued...

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balance of the sequence. Try to read a large number of characters, say 40.

4) We now have a group of characters beginning with the second burst of the CSI sequence, which can be no more than three characters long. Characters beyond that are almost certainly other CSI sequences, probably resulting from automatically-repeating cursor keys that we aren't processing quickly enough. That's okay - we'll just throw them away, by searching for the first CSI and discarding it and any characters to its right. We can do this very tidily with ARexx's PARSE instruction:

```
parse value readch(iw,40) →
with s '9b'x
```

This one line will gather any queued input and store it in "s", throwing away excess CSI sequences if any occur.

Now we can use "s" as an index into a table of equivalences that we have previously set up. Let's suppose we've pressed "f1", so "s" contains the characters "0~". If we have initialized our table with this line:

```
k="0~"; table.k = "f1"
```

then all we need to do to "cook" the raw input sequence "s" is this:

```
return table.s
```

The Listing

As a demonstration of one way to use a RAW window, the accompanying listing implements a scrolling ARexx file requester, in which the cursor up and down keys are used to move through the list, and the Return key selects a file. The shifted cursor up and down keys are also recognized and interpreted in a standard way (go to top/bottom of window, thence to top/bottom of list).

The function ReadRawChar translates raw CSI sequences to string equivalents. It also translates some common control sequences, like Carriage Return and Backspace, from the normal ASCII set. Ordinary printing characters, of course, are returned unchanged; unrecognized characters and sequences are returned as hex strings. These details can be easily modified if required.

The function that sets up the table used by ReadRawChar is InitRRC. Observe that this function must be called before ReadRawChar can work.

```
/* Output current list item */
DisplayCurrent:
  dcSU = '9b'x || arg(1)'m' || '9b'x || curitm-topitm+1'H'
  return writech(iw, dcSU || word(files, curitm))

/***** Miscellaneous console output commands *****/

ScrollUp : return writech(iw, '9b'x || 'S')
ScrollDown: return writech(iw, '9b'x || 'T')
CursorOff : return writech(iw, '9b'x || '0 p')

/***** Console input routines *****/

/* Set up rrc. compound variable for RAW: input */
InitRRC: procedure expose rrc.
  Code = "A B C D T S Z",
        "0~ 1~ 2~ 3~ 4~ 5~ 6~ 7~ 8~ 9~ ?~ *A *@",
        "10~ 11~ 12~ 13~ 14~ 15~ 16~ 17~ 18~ 19~"
  Key = "up down right left UP DOWN TAB",
        "f1 f2 f3 f4 f5 f6 f7 f8 f9 f10 help LEFT RIGHT",
        "F1 F2 F3 F4 F5 F6 F7 F8 F9 F10"
  rrc. = ''

  do i=1 to words(code)
    w = translate(word(code,i),,'*')
    rrc.w = word(key,i)
  end
  return

/* Read and decode one sequence from RAW input */
ReadRawChar:
  rrC1 = readch(iw)

  if rrC1 = '9b'x then do
    parse value readch(iw, 40) with rrC2 '9b'x
    rrC1 = rrc.rrC2

    if rrC1 = '' then /* Unrecognized sequence? */
      rrC1 = '$'c2x(rrC2) /* Return as hex string */
    end
  else do
    rrN = pos(rrC1, '08090a0d1b7f'x)

    if rrN > 0 then
      rrC1 = word("bs tab lf cr esc del", rrN)
    else if bitclr(rrC1, 7) < ' ' then
      rrC1 = '$'c2x(c)
    end

  return rrC1

/* Obtain edit area bounds as a string: "<width> <height>" */
ReadBounds:
  call writech(iw, '9b302071'x)
  do while readch(iw) ~= '9b'x; end
  parse value readch(iw,40) with ';' ';' 'rbHt ';' 'rbWid ' r'
  return rbWid rbHt

/* Obtain cursor position as a string: "<col> <row>" */
ReadPos:
  call writech(iw, '9b366e'x)
  do while readch(iw) ~= '9b'x; end
  parse value readch(iw,40) with rpRow ';' rpCol 'R'
  return rpCol rpRow
```

end

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The listing includes two other functions, ReadBounds and ReadPos, that draw on further capabilities of RAW consoles that we have not discussed. Briefly, they allow a program to determine the size of the editing area and the position of the cursor. In both cases, a command is sent to the console which causes a special CSI sequence, containing the requested information, to be inserted into the read stream.

In the file requester script, ReadBounds is used to determine how many file names can be displayed in the window. This value will change if the user resizes the window; unfortunately, there is no good way, even in a RAW window, to detect the resizing operation automatically from the script. The script therefore allows the user to force re-evaluation of the window boundaries by pressing the "f1" key after resizing. ■

Fonts - On The Screen And On Paper

by Chris Zamara

Font n. 1. the set of characters in a typeface. **2.** the data used to define these characters.

That may not be the definition of "font" in typesetting terms, where it refers to a typeface (text character style) in a specific size, as in "Helvetica 12." When dealing with text and computers, however, "font" is used to refer to a typeface as it appears on the screen or in a printed document, or it can refer to the disk file that stores the description of characters in a typeface.

When you use your Amiga to display or output text, different kinds of fonts are used in different ways. By default, the built-in Amiga font "Topaz 8" is used for the text in window title bars and on

the Workbench window. Other standard-format Amiga fonts can be loaded from disk and used in paint programs, wordprocessors or other applications that let you select a font. But what happens when you actually print a document? How do printer fonts, standard Amiga fonts, and fonts used in desktop publishing fit together? This subject can be confusing to anyone getting started in advanced wordprocessing or DTP.

Amiga Fonts

The Amiga's operating system allows the use of internal or disk-loaded fonts that can be used for displaying text on the screen. The Font files stored on disk or in memory are simply pixel-by-pixel descriptions of each character in the font, along with character spacing and other geometric information.

Text and graphics applications that allow font selection will display the available fonts, which are stored in the "Fonts:" directory. Each font style (type-

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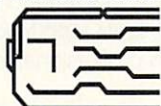


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face) is available in one or more sizes - the application's font requester lets you choose from those available. System fonts give the size of a font based on the maximum character height in screen pixels. This height includes the space taken up by descenders on characters like "g", so although no single character in "Topaz 8" may be eight pixels tall, eight pixels are required for the "character cell" that could hold an upper case letter like "A" along with a lower case letter with a descender. The width of the characters is not fixed with most fonts, but as in real typography each character has its own width.

This system restricts you to those sizes that have been predefined. If you want to use the Helvetica typeface at size 28 when the largest available font is size 24, you're out of luck. Nearly out of luck, anyway: AmigaDOS V2 will do font scaling for you, choosing the closest available size and scaling it as best it can to the size you specified. As you might imagine, scaling a relatively small bitmap like a font character produces less than perfect results (see diagram). For situations where the size is crucial, however, a scaled system font may be better than using the wrong size altogether.

Adding new Amiga Fonts

A font consists of a ".font" description file and a directory containing the font definitions for each size available in that typeface. When you obtain a new font from a commercial disk or by downloading a public-domain font from an online service, you can add it to the available system fonts by copying the relevant files to "Fonts:". For example, to install a font called "Script" from a floppy disk in drive df0:, you could use these commands in a command shell:


```
Copy df0:Script Fonts:Script
all
```

```
Copy df0:Script.font Fonts:
```

The first Copy creates the "Script" directory and copies all the font definitions into it, and the second Copy copies the ".font" description file.

Fonts on Other Disks

Some display fonts are very large and use a great deal of memory; you may not have enough space on your



Helvetica 18
Helvetica 24
Helvetica 28
Helvetica 36

The Helvetica font in four different sizes under AmigaDOS V2. Sizes 18 and 24 are perfectly formed, since they are available in font files on disk. Sizes 28 and 36 are produced by scaling up from size 24, producing some distortions in the character bitmaps. Such distortions are inevitable with bitmap-based fonts, and can only be avoided by using sophisticated outline-based font software.

SYS: disk to put these fonts. If you are using the font in a paint program, you only need to access the font temporarily - once the characters are 'stamped down' on your drawing, the font need no longer be accessed. In these cases, you can temporarily reassign "Fonts:" to another disk or directory, then assign it back again to restore the use of your standard fonts.

For example, if you had a disk full of fonts in drive df0:, you could access them after issuing the following commands from a Shell or CLI window:

```
Assign Fonts: df0:
```

After using the new fonts, you can reassign to the old directory with this command:

```
Assign Fonts: SYS:Fonts
```

This assumes your usual font directory is in the standard place; you may keep your fonts elsewhere, depending on the way your system is configured.

As you can imagine, reassigning directories every time you wish to switch from a standard font to a font on another disk can be a major inconvenience. In AmigaDOS 2.0, you can use fonts from multiple directories or disks without reassigning or copying them into a single "Fonts:" directory. The new version of the Assign command lets you make an assign like "Fonts:" work for a number of directories. To add the fonts in df0: to your fonts "path", you could use this command:

```
Assign Fonts: df0: ADD
```

Now your standard fonts as well as the fonts in drive df0: will all be

available for use at the same time. Moreover, the new fonts will only be accessed if the font disk is in the drive; you won't get a volume-mount requester every time fonts are accessed. This means you can assign *all* your font disks to the font path and just mount whichever disk you need at any moment. The REMOVE keyword can be used to remove the new fonts from the font path.

Printer Fonts

The most efficient way to print a simple text-only document is to simply send the text directly to a dot-matrix or other printer. This is the method used when you print with a wordprocessor like *TransWrite* or with *ProWrite* using the "Draft" or "NLQ" (Letter quality) printing modes. The printer uses one of its own internal fonts (you can usually choose from a few) and prints text at the best resolution the printer is capable of in the selected mode.

Using printer fonts results in high-speed, good-quality documents but suffers from a few drawbacks. For one, you are limited to the fonts available in the printer itself, and the printer font doesn't necessarily match the one on the screen. Also, printer fonts are typically "fixed width", where each character is the same width, so that the wordprocessor can calculate how much text will fit on each line. Documents printed with fixed width fonts tend to look typewritten rather than professionally typeset.

.info technical support

Printing System Fonts

Wordprocessors that let you print using any system font cannot rely on the printer's built-in fonts. Programs like *ProWrite* (in "Normal" print mode) that can use and print standard Amiga fonts must send the document to the printer as graphics. This is slower than sending text directly to the printer, and is also limited to the resolution of the system font. In many cases, this will look more "chunky" than a built-in printer font in NLQ mode, and will certainly look worse than text printed using a laser-printer's built-in font. The advantage to printing system fonts as graphics is that you get true WYSIWYG editing: the printed document will look exactly as it appears on the screen, fonts and all.

PostScript Fonts

PostScript is a page-description language understood by some laser printers, phototypesetters, and other output devices. PostScript provides many sophisticated capabilities, among them the ability to scale text to any size with no degradation in quality. Desktop publishing programs can produce professional typeset-quality documents by relying on PostScript output devices, since the text is always printed at the maximum resolution of the device. This means a draft copy of a document can be printed on a 300 DPI (Dot-Per-Inch) PostScript laser printer, and that same document can be printed with a PostScript phototypesetter at resolutions up to 2540 DPI (though for text, resolutions greater than about 1700 DPI are rarely required).

To allow proper on-screen formatting of text, a PostScript-based desktop publishing program like *Professional Page* (Gold Disk) needs not only a corresponding Amiga font, but needs to precisely know the relative widths of all the characters in a particular font. This information is supplied in "metric files" that go along with a font. That's why simply having a font available on a particular PostScript output device is not enough to use that font in DTP: your software will need a corresponding Amiga font and metric file as well.

Scalable "Outline" Fonts

In the newest generation of Amiga DTP software, the same software technology used to scale fonts to any size in PostScript has been applied to screen fonts. *Professional Page 2.0*, for example, uses Compugraphic outline fonts and special software to provide accurate on-screen scaling of fonts to any size. As in PostScript, outline fonts allow this feat by storing mathematical descriptions of each character rather than simple bitmaps as in Amiga system fonts; the characters can be recreated from this description using any desired number of pixels. This also allows high-quality printing to dot-matrix and non-PostScript laser printers, since optimum bitmaps can be generated and sent to the printer. In effect, outline fonts and the associated software running in the Amiga do the font scaling normally done by an external PostScript device.

Outline fonts are supplied as special files that come with the desktop publishing package, and additional fonts can be purchased separately. One advantage to using outline fonts instead of Amiga fonts (and metric files) with DTP is a much better-looking and more readable text display; another is the ability to print high-quality documents on non-PostScript printers. Drawbacks are slower screen updates and printing, and increased memory requirements.

Downloadable Fonts

PostScript printers usually have one or more standard fonts built in, but new fonts can be "downloaded" to the printer and added to its repertoire. PostScript fonts are usually downloaded with a special utility, or by the DTP software before a document is printed. *Professional Page 2.0* will automatically download PostScript fonts that are provided for any on-screen outline font. Gold Disk also supplies a utility to create PostScript downloadable font files from an outline font file. Downloadable fonts are only required when your PostScript printer does not have a font that you need; your printer will no doubt alert you to such a problem when you try to print a

document containing an unknown font.

The Future of Fonts

Just a few years ago, the ability to edit perfectly-formed WYSIWYG text on-screen and print out documents with text scaled to any size was well beyond the abilities of any Amiga software. Scalable fonts are now an essential part of DTP, and as processors and hard disks get faster and memory gets cheaper, this technology will no doubt "trickle down" to more and more text-based applications. The bitmap scaling of Amiga fonts in 2.0 is a step in the right direction, and AGFA outline font technology (sure to be the subject of a future *.its* article) has also finally found its way into the Amiga's operating system.

As with most maturing technologies, perhaps the most obvious change in future advances in fonts will be in the way the technology hides itself. Future font applications may use sophisticated outline scaling techniques along with a host of new ones, but the user won't know or care about what kind of fonts are being used or what files are being accessed. Document editing and creation will just work, using whatever techniques are required to get the job done. But until that happens, you'll still need articles like this one to guide you through the maze. ■

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A T P R E S S T I M E

confirmed the rumor: WordPerfect Corp. has, indeed, halted work on *WordPerfect 5.0* for the Amiga, and has dropped all plans for further Amiga product development of any kind.

According to Chris Wilford, beta coordinator for Amiga development at WordPerfect Corp., "We encountered several technical difficulties in the product's development which would have delayed release until late next summer." He added, "It is a large program, and would have required extra RAM and possibly even a faster machine, like an Amiga 3000, to run. We looked at the installed percentage of Amiga 3000 machines in the market and felt that there just wouldn't be enough of a base to allow us to recoup our investment."

"We simply overestimated the potential when we started on this project," Wilford said. "While we feel it would be really nice to have an upgrade for the Amiga, it just boils down to economics. We just don't feel that the market is there."

We asked if this meant the end of all Amiga development for WordPerfect Corp., and Wilford's answer was an unwavering "Yes."

"However," he added, "*WordPerfect* v4.1 will still be available and is still actively supported. We hope that *WordPerfect* will continue to be beneficial to Amiga users."

Though Commodore has come under fire in the past for blowing opportunities with prestigious developers, Wilford emphasized that "WordPerfect Corp.'s working relationship with Commodore has always been good. This is simply an economic decision."

Taking Command of Color

Review by Tom Malcom

Let's say you have a graphic that you absolutely love, but the colors are all wrong. You could pull it into a paint program, but then you're not too fond of the palette control in that, either. Enter *Doug's Color Commander*. This little 36K program can easily live in your C or Utility directory, where you can call it up when you need it. Once invoked, *DCC* pops up a menu bar containing basic items for loading and saving screens, grabbing a screen, and a couple of other configuration-type things. The best thing about the menus, though, is that they're intelligent. When you choose 'Change Colors in Screen...', the menu shows which programs currently running have screens that can be worked on. Once you pick one, it's instantly popped to the front and *DCC*'s draggable palette gadget is placed on it.

Doug's Color Commander is the most sensible and usable palette controller I've ever used. It is very simple to learn and provides methods for changing color based on RGB and HSV values, with provision for spreads, copying from one spot to another, and shifting up, down, and sideways.

I was astonished that *DCC* worked with *DPaint IV*, including HAM mode (though, of course, it will only change the 16 base colors in HAM). So far, I haven't found any non-HAM software

Doug's Color Commander 2.0

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DCC won't work with. Not offering complete HAM support, of course, is the main limitation of *DCC*, but it works great for everything else. IMHO*, it should be licensed by software developers as the standard Amiga palette requester. There are a couple of little things that I don't like about *DCC*, like the file requester always going to the bottom of the list and the lack of a multiple Undo (there is a one-step Undo function), but these are minor things. *Doug's Color Commander* is one of those too-infrequent utilities that you didn't know you couldn't live without. I know I can't.

* "In My Humble Opinion" - an acronym often used online -Ed.]

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We here at *.info* have learned that Newer Technologies, Inc., a prominent manufacturer of hardware expansion products for the Apple Macintosh, will announce a new laptop computer based on the Amiga chipset just days before this issue hits the newsstands. The *Model 10* will be shown to the public for the first time at the World of Commodore Show in Toronto during the first week in December.

Newer Technologies will be developing not one but *two* basic models of the Amiga laptop, with a plethora of options. The *Model 10* is similar to the Amiga 500, though both models will have completely redesigned motherboards. It will feature a Motorola 68000 cpu running at 7.18 MHz, either 1.3 or 2.0 Kickstart in ROM, a single 880K floppy disk drive, two megs of RAM (one meg chip and one meg fast, expandable to eight megs total via an internal add-on board), a standard Amiga 86-pin expansion buss, and a flip-up backlit monochrome 10.4" diagonal 640x480 LCD display. Standard connectors include mouse and joystick ports, parallel printer port, RGB and color composite ports, and an Amiga-standard disk drive connector. The unit is 2" tall, 11.7" wide, and 8.3" deep when closed, and weighs between three and six pounds, depending on options.

Details are sketchy on the more powerful *Model 30*, but it will be a 68030-based machine with an optional 68882 math coprocessor.

Available options for the Amiga laptops will include a color LCD screen, an internal SCSI interface with standard 25-pin connector, a 40 MB external hard drive, a 20 MB internal hard drive, a high-speed SCSI II Dart RAM drive (expensive but fast, available in 4K and up), a serial port con-



Model 10 an Amiga laptop by Newer Technologies

connector, a battery charger, and a 'PC hardware upgrade' (which amounts to compatibility with the *ATonce* PC emulator). Also planned are a CD-ROM drive, an external tape drive, and a sound output interface (there are no sound connectors on the standard laptop).

Retail prices were not available at presstime, but will be announced at the

World of Commodore Show. If all goes as planned, the first units will be available to dealers by mid-December.

If production goes as scheduled, *.info* will feature a hands-on review of the *Model 10* in our next issue.

For more information, contact: Newer Technologies, 7803 E. Osie St., Wichita KS 67207, 800-678-3726.

WORDPERFECT DROPS AMIGA DEVELOPMENT

We first reported the rumor that WordPerfect Corp. might drop Amiga development in the Aug/Sep issue of *.info*. However, we were quickly assured by well-connected Amiga users, Commodore staffers, and WordPerfect spokespersons alike that WordPerfect Corp. not only had

no intention of dropping Amiga development, but that we would be "very pleased by upcoming developments." A bit of fishing around revealed that WordPerfect Corp. was lining up beta testers for a "5.0 equivalent" version of *WordPerfect!* Needless to say, we were both relieved and excited.

But how quickly things change. Once again this month, the rumor mill spit out the grist that WordPerfect Corp. was giving up Amiga development for good. But this time, a quick check with the company

continued on page 65 . . .

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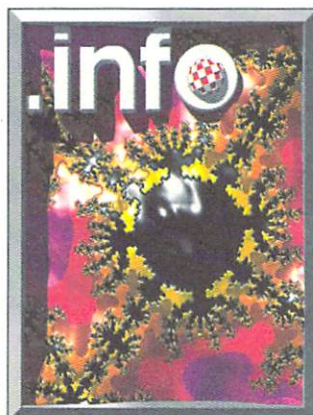
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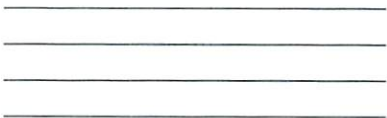
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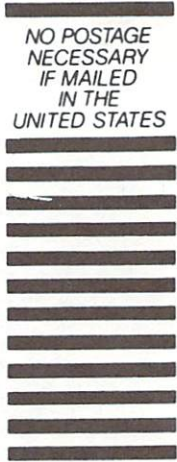


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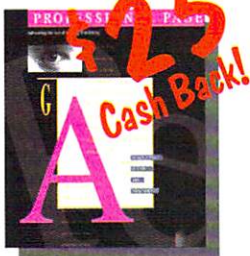
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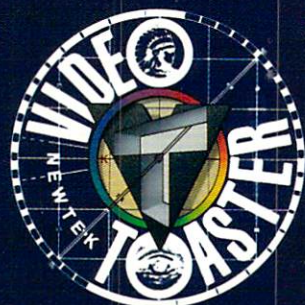
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