

AMIGA

COMPUTING

New 3D Giant!

Imagine 3.0 – is this the
Amiga's best ever graphics
package? See page 33

PLUS: Commodore cash
crisis – death or rebirth?

Product reviews

Bars&Pipes 2.5 - The best gets even better
MusicX 2 - Old dog learns new tricks for the 90's
Photoworx - PhotoCD on the Amiga at last
Digitisers - All the best tested and compared
Wordworth 3 - Bug fixes and even more features

◆ **SYSTEM** ◆

Concise and critical
Amiga game reviews



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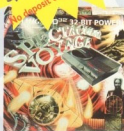
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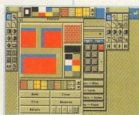
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BASIC Instant

...have you got it?

HiSoft BASIC 2

at last!



HiSoft BASIC 2 shows off its AGA support

The Compiler

HiSoft BASIC 2 is a compiler that feels like an interpreter when you use it from within the integrated environment. It takes source code either directly or via the `include` statement and produces fast, efficient 68000 code; it is also possible to pre-tokenise your source code to obtain maximum speed of compilation. The syntax is highly compatible with other implementations including Microsoft QuickBASIC™ (PC), AmigaBASIC etc. allowing modern, structured programming with a high degree of portability between different machines. The graphics commands built into HiSoft BASIC let you take advantage of the AGA chip set.

You can link with assembly language and SAS/Lattice C programs and compile to memory for testing or compile to disk to produce your final, standalone masterpiece.

The Debugger

There are times when your program does not behave in the way that you planned. On these occasions, you can use TRON/TROFF statements to trace execution by line number, or you can invoke the HiSoft BASIC debugger.

This is a medium-code-level debugger, which displays the source code and object code of your program at the same time. You have access to all your BASIC sub-program and function names and you can step through the BASIC source code by line, setting breakpoints as appropriate.

The Libraries

HiSoft BASIC 2 comes with libraries that let you access the features of all versions of the Amiga operating system from Workbench 1.3 up to Workbench 3.1. The standard Amiga names are used, as described in the ROM Kernel manuals, making it easy to translate examples from C. There are examples of using and displaying IFF files, Datatypes, Gadtools gadgets & menus, Tasks, Sound etc.

The Package

HiSoft BASIC 2 is supplied with a comprehensive, 640-page manual which, in addition to user and reference sections, also contains an extensive tutorial on using the package.

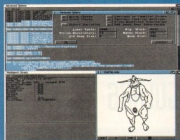
The system works on all Amiga computers with 1Mb or more of memory, at least one floppy drive, keyboard and mouse, in all 80 column screen resolutions. We recommend 2Mb of memory and a hard disk if you intend to work on larger programs or to take full advantage of the new operating system features.

Registered users of HiSoft BASIC version 1 can upgrade by telephone - please call for information

HiSoft BASIC 2 is a complete development system which is ideal for both the professional and the casual programmer.

Your programs can be written with the integrated, multi-window editor where there is a complete range of features that allow you to create, edit and run your BASIC programs without ever leaving the comfortable interactive environment: block marking with the mouse, cut, copy and paste, bookmarks for quick reference, fast, case-sensitive search and replace, flexible organisation of your text windows, compilation at the touch of a key and much more.

The editor takes full advantage of the new features of Workbench 2 and Workbench 3 and there is a version of the editor that emulates many of the advanced features of Workbench 2 under Workbench 1.3.



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Investment talks go on as Commodore crash

COMMODORE International and their subsidiary Commodore Electronics have been put into voluntary liquidation following a year of heavy losses.

CIL - parent to CBM UK - filed for liquidation in the Bahamian courts, although they claim to be in the final stages of talks with a potential investor.

Despite having their headquarters in the US, Commodore are registered offshore and therefore unable to enter the Chapter 11 bankruptcy system.

But the Bahamas equivalent is similar to Chapter 11 in that it enables bankrupt companies to trade while they reorganise, and with protection from creditors.

Commodore UK's financial director, Colin Proudfoot, said the liquidation can be reversed and that the move meant no creditor could "rock the boat" during investment talks.

Some offices around the world have closed but many of the manufacturer's key

sales divisions continue in business, including the UK, Germany, Italy and Scandinavia.

The Philippines-based Amiga assembly plant has stopped making the computer, although Proudfoot is confident there is enough supply to meet demand for the next few months.

He would not comment on speculation that the potential buyer is from the Far East, or on their plans for the Amiga range if the take-over is completed.

Commodore started in business 40 years ago as a typewriter repair company, eventually moving into the personal computer market during the mid-1970s.

Offices in several countries were closed last year during a period of reorganisation aimed at slashing costs.

This was achieved but the company were then hit by recession across Europe and a downturn in the games console market which led to disappointing CD32 sales.

What does it mean for you?

Commodore's problems shouldn't make too much difference to you and your Amiga.

With about 1.5 million Amigas in Britain - and millions more across Europe - software,

hardware and repair support will be needed for several years to come. Developers around the world promise to continue their commitment to the Amiga.

Blue Ribbon SoundWorks boss, Melissa Jordan Grey, said Commodore's liquidation does not diminish the outstanding technology which has evolved since the Amiga's inception.

"In fact, Commodore's demise may actually spur additional growth of the Amiga market as new contributors and technology licensees emerge," she said.

"We at the Blue Ribbon SoundWorks remain 100 per cent committed to our worldwide Amiga customer base."

And Amiga owners who have bought computers or consoles with an ICL warranty have been assured that the home service guarantee will continue to be honoured.

A spokeswoman for ICL's customer services said the firm have a strategic partnership with Commodore and as far as was concerned business would continue as usual.

Small dealers given the Amiga edge

ANOTHER bundle based on the A1200 is now available from Britain's small computer dealers.

It was put together by distributor ZCL, who aim to give retailers an edge over High Street multiples which have been discounting to a level which independents are unable to match.

Frontier Innovations contains Frontier Elite II, Batman Returns, Total Carnage, Brian the Lion and Zool 2 and programs Wordworth AGA, Print Manager, Personal Paint and Day by Day.

"In our opinion this new pack contains the best utility and games software around," said ZCL boss Don Carter. "It offers excellent value for money."

Price, around £349.



Frontier Innovations: Value for buyers



Amiga: Commodore seek buyer for Amiga range

NEWS BRIEFS

First go online

LEEDS-based dealer First Computer Centre have launched a bulletin board for their customers. It will provide technical support, details of the firm's product range and news.

Public domain, shareware and driver programs will be available for downloading. Modem users should dial 0532 637968 and those wanting to talk to the firm can telephone 0532 319444.

Cheaper comms

US Robotics (0753 811180) have cut the price of their Sportster 14,400 fax modem from £299 to £199 in a bid to increase their market share for high speed modems.

"The price is low enough to make people think twice before they buy an illegal unapproved modem," said the firm's marketing manager Lucy Brown.

Simple PD search

EVER been faced with the daunting job of trying to find the right piece of public domain software for your needs?

PD Search (061-445 5809) is a new Manchester-based library that, when told of their customers' needs, digs out a suitable program from their collection of disks.

If they don't have the software themselves, the library say they will find it from another company at no extra cost to the buyer.

Video help

AMIGA novices can learn how to get to grips with Workbench 3 by watching a new video from Bruce Smith Books (0923 893493).

The one-hour tape uses the Amiga's graphics and step-by-step examples to demonstrate all aspects of the computer, from formatting disks to using the Preferences tools.

Amiga Workbench 3 Basics Tutorial costs £14.99 and will be followed by a second volume within the next few weeks.

Graphics control

TABBY is the name of a graphics tablet which has just been made compatible with Amigas.

The £49.99 device has a resolution of 2,048 x 1,536 elements and is claimed by First Computer Centre (0532 319444) to be ideal for system control and freehand drawing.

Amiga enters a virtual world

AMIGA users can enter the world of virtual reality in their own homes by using a new system from California-based developer Megagem.

AmiVR is believed to be the first proper VR product for any personal computer – although at the moment it is limited to American machines.

The package consists of software and an interface to connect two unexpanded AGA Amigas – used to generate separate images for the left and right eyes.

Software synchronises the left and right graphics and a headset – bought separately – plugs into the interface to display the images.

All types of software can be used



AmiVR: First proper VR system for Amigas

with AmiVR, although only specially-written games and applications will appear three-dimensional.

According to the system's developers, other games and software will be shown larger than usual – as if they were being played on a cinema screen.

Megagem boss Dan Wolf said AmiVR is aimed at people wanting a low-cost virtual reality system, although it could also be used in medical and military applications.

AmiVR costs \$999 and the headset \$2,500 from Megagem (010 1 805 349 1104).

● To find out about recent developments in virtual reality turn to our special feature starting on page 70.



Silica: High Street shop for all types of buyer

High Street help for Amiga novices



Microvitec 1438: One of two alternative Amiga screens

SILICA Systems hope to bring an end to criticism that High Street retailers don't cater for computer novices with the opening of 20 shopping areas nationwide.

The Kent-based dealer has joined forces with Debenhams to come up with stores aimed at all types of shopper, from beginner to expert.

Each has specially designed areas where customers can test the latest games, productivity software and hardware – including a large range of Amiga products.

Ten stores are already open and the rest will be up and running within the next few months. They include Bristol, Glasgow, London's Oxford Street, Manchester and Sheffield.

"We have placed special emphasis on enlarging the market by introducing new people to home computing," commented Silica's retail controller Ken Browning.

"By taking our reputation for service and after-sale support to the High Street, we are aiming to become the consumer's primary focus point for the complete computing package."

A Debenhams' spokesperson added: "Computers are rapidly becoming an accepted part of the home, so it was logical to include them in Debenhams and to have Silica establish the outlets."

"Silica were chosen as it was crucial that the outlets could cater for our broad range of existing customers, many of whom will be new to computers, as well as attracting new customers."

Silica can be contacted on 081-309 1111.

Dealers end monitor shortage crisis

WITH Commodore still unable to supply their 1942 and 1084S colour monitors, several dealers have started selling two alternative Amiga screens.

Users tired of using their family televisions are targeted for the Sharp 14in TV. It features remote control, 40 channels, an on/off timer and RGB Scart socket.

A Scart cable is claimed to make the display much crisper than when the screen is used with normal television cables. Price, around £169.

Meanwhile, high-end users needing a full range of

Amiga resolutions can use the Microvitec 1438 which automatically configures to the full span of modes between 15kHz and 38kHz.

It has a 14in screen, and Sidcup-based Silica Systems (081-309 1111) are supplying it with a pair of two watt speakers, Amiga adaptor and a disk of utility software for £299.

Most shops and dealers have been unable to supply Commodore screens since before Christmas and it seems unlikely that any will be built in the near future.

Viper 68030 Turbo

Amiga 1200 accelerator board

£159

Standard (no FPU)



The amazing Viper 030 board is a feature packed accelerator card which outclasses the equivalent competitors 030 boards at a fraction of the cost.

The Viper will give an amazing 440% overall speed improvement over your Amiga 1200, making it even faster than an Amiga 4000/030! Some processor operations have speed increases in excess of fifteen times.

Some floating point operations are an incredible sixty seven times quicker, faster than an Amiga 4000/040!

Viper Features

- Full 030 with MMU running at 28Mhz
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Viper 2MB (no FPU)

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Power Drive is the most impressive disk drive of its kind on the market. This award winning drive has the backing of the 'Commodore Quality Seal of Approval' to ensure complete compatibility with Commodore computers.

The drive includes a strong aluminium casing, an anti-click device, virus blocker, Cyclone compatible chip and the latest built-in backup hardware which allows X-Copy to copy and verify.

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Beware! Flickering LED's on your disk drive mean that the drive has not been modified by Sony for 100% Amiga compatibility.

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Disk drive modification by Sony to stop flickering LED	•	•



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Crime unit searches for software thieves

A CRIME unit has just been set up by the computer and video games trade body ELSPA to protect Britain's £960 million electronic entertainment industry from software pirates.

Its activities were to be carried out by the Federation Against Software Theft and the new unit will work with police and Trading Standards officials to recover pirated programs.

It is headed by John Loader, who in the last 18 months at FAST helped discover more than £500,000 in illegal software and prosecuted several offenders.

Loader says the unit is mainly involved in investigating

illegal copying but will also tell authorities of the existence of pornographic and obscene images.



"Electronic bulletin boards are often used not only to pirate software but also to access illegal pornographic material," Loader claimed.

"As such, the Crime Unit has an important role to play in restricting the flow of obscene materials and, when found, turning them over to the relevant authorities."

The unit's current focus is on pirated compact disc software and illegal bulletin boards and can be telephoned on 0386 830642.

Upgrade boosts sound card

THE Blue Ribbon SoundWorks, the US-based maker of Amiga music products, have announced the Triple Play Plus upgrade for their One-Stop Music Shop sound card.

The One-Stop Music Shop is a 16-bit stereo multi-timbral system for Zorro-based Amigas, providing 32-voice polyphony based on E-Mu Systems' SoundEngine daughterboard.

The upgrade's combination of software and hardware is claimed to enable owners of the card to have 48 simultaneously-addressable Midi channels.

And by using the original Triple Play Plus Midi interface with the OSMS/TPP upgrade, users are able to access 96 simultaneously-addressable Midi channels at a time.

The upgrade includes a microchip, custom Midi cables and software to allow the product to be integrated with the firm's sequencer Bars and Pipes Professional.

Blue Ribbon's products are sold in Britain by Premier Vision (071-721 7050) and Meridian Distribution (081-543 3500).

Star send printer prices tumbling

PRINTER manufacturer Star have announced price cuts across their range of dot-matrix, laser and colour thermal models.

The move brings the recommended retail prices of many machines down by £50, and others printers will their prices tumble by as much as £150.

Star's marketing manager Annette Tarlton said: "These aggressive prices emphasise further Star's long standing reputation for value for money printers."

CD32 dominates software chart

THE compact disc software chart has been taken over by the CD32, with the format now accounting for more than half of all CD games sold.

A recent Gallup chart showed software for the console taking 55.6 per cent of the market share – up an impressive 9.1 per cent on the week before.

This compares to 24.2 per cent for PC CD-ROM, 18.3 per cent for Mega CD, 1.1 per cent for CD-I and 0.9 per cent for Apple Mac CD-ROM.

The CD32 took market leadership in February, and its rise has been helped by new releases such as Frontier Elite II, Microcosm, The Chaos Engine and Liberation.

Commodore says that after a sluggish start to its life, the CD32 now has 80 titles available for it and more than 200 in development.

"Of all the platforms out there, only the Amiga CD32 can deliver advanced CD gaming now," claimed Commodore's Kieron Sumner.

"Its chart performance is hard proof of its unstoppable progress."



CD32: Success continues as software dominates CD market

New peripherals and 84000 prices fall

NEW Amiga peripherals and price cuts on high-end computers have just been announced by Kent-based dealer Silicon Systems (081-309 1111).

Great Valley Products' latest G-Ford accelerator gives the A3000 and A4000 a 40MHz 68040 processor with built-in 68882 maths co-processor.

It comes with 4Mb of memory – expandable to 32Mb on board or 128Mb with an extra module – and is claimed to make A4000/030s run 12 times faster than standard.

The American peripheral giant's TBC Plus multi-function graphics card is available for professional quality processing of video signals.

It gives a real-time frame grabber and 16.7 million colour frame buffer, a full SMPTE/EBU time code receiver and generator, and a three-channel video input switcher in composite and Y/C.

Up to £200 has been cut from the price of A4000s. A model fitted with 4Mb of memory and a 214Mb hard drive can be bought for £999, and a 540Mb hard drive version for £1,299.

Both machines come with Wordworth, Print Manager, DPaint IV and a bundle of four games – Chaos Engine, Syndicate, Pinball Fantasies and Nick Faldo's Golf.

Music program gets tuned up

ALMOST 50 new features and enhancements have just been added to the Blue Ribbon SoundWorks' Bars and Pipes Professional music program.

Additions contained in version 2.5 include the ability to loop any number of measures on all tracks simultaneously, and to split one track into several containing just one pitch.

It can also control the number of measures per line and staves per page when printing notation.

Blue Ribbon's Todor Fay said: "We're demonstrating our commitment to the program's user base by

continuing, not only to support our products, but to consistently improve them over time."

The Atlanta-based company sell their software in Britain through Premier Vision (071-721 7050) and Meridian Distribution (081-543 3500).

* A telephone advice line has opened for anyone in need of information regarding Amiga music products or technical help with Blue Ribbon SoundWorks software.

It operates between 11am and 4pm between Tuesday and Thursday. Dial 081-332 6959.

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More pledges of support

Denny Atkin reports on how the US Amiga market is rallying to the machine despite Commodore's woes



As I write this column, the networks are abuzz with reactions to Commodore's liquidation announcement. Rumors, both factual and fantastic, are flying about companies that may purchase the Amiga technology.

So many Amiga users on the Internet, denying that the Amiga could possibly die, have inspired the following joke: Q: How many Amiga users does it take to screw in a lightbulb? A: One hundred. One to change the bulb, and 99 to deny there's anything wrong with the original bulb.

Over the weekend following Commodore's announcement, a few of the company's former

employees apparently had a little fun "remodeling" the West Chester headquarters.

Commodore's infamous speed bumps (the ones that caused many early A500s to work intermittently because the Agnus chips were loosening from their sockets as the delivery trucks ran over them) now had the names of prominent Commodore executives painted on them.

An unpopular security executive found his personal parking spot repainted with a "handicapped parking only" logo, and a realtor's For Sale sign hung from the front office door. Finally, a sign was posted proclaiming "Speed Limit: 25 MHz." As Amiga users

argued over whether the company was going to be purchased by Samsung or Kellogg's, ASDG (ADPro Nova Design (ImageFX), Digital Creation (Brilliance), Amiga World, Soft-Logix (PageStream) Centaur (OpalVision), Prolific (ProBoard), Intangible Assets Manufacturing (Envoy), Diemer Development (Sequel), and Blue Ribbon SoundWorks (Bars Pipes Professional) were quick to inform users and the press that they remain committed to supporting and improving their Amiga products no matter what happens to Commodore as a company.

DICE keeps rolling

DICE, the popular shareware C language compiler for the Amiga, has been upgraded to version 3.0 and reissued as a commercial program. The overhauled version, DICE 3.0, is the brainchild of some of the biggest names in the Amiga development community.

These include Matt Dillon, creator of the DME editor and other shareware programs; John Toebes, of the Software Distillery and one of the architects of the Lattice/SAS C compiler; Bryce Nesbitt, former Commodore software engineer and one of the driving forces behind AmigaDOS 2.04; and Andy Finkel, a Commodore alumnus responsible for projects ranging from creating Omega Race for the VIC-20 to managing the release of AmigaDOS 2.

The shareware version of DICE has always been a high-quality C compiler, but the commercial version is a fully-integrated development environment.

The program includes two editors (advanced versions of Dillon's DME and Finkel's AME MicroEMACS), as well as macros for popular editors such as TurboText and CynusED Pro.

The VMake visual Make utility



DICE 3.0 - easy compiling

makes project management a snap - and it can be reconfigured to suit your own needs, or even to manage other programs.

All the tools you'd expect, such as a source-level debugger, profiler, assembler, and even a revision control system are included. Libraries provide ANSI C, UNIX, SAS/C, and general Amiga compatibility.

Include files are shipped for AmigaDOS 1.3 through to 3.0. Many examples are included for novice programmers. There is source code for many of the utilities, and an excellent section in the manual for helping beginners get started.

On-line help, including a C language reference, will assist those new to DICE or C in general. Thanks to a compression utility that squashes the include

files to take up only half a floppy, the compiler can even be run fairly well from disk, a capability other compilers have lost over the years.

The 450 page manual isn't the biggest I've seen for a C compiler, but it's one of the best. It's filled with programming tips and solutions to common problems, it's also fun to read, with little quips ("This is a test of the emergency page blanking system" instead of "this page intentionally left blank") and cute cartoons between chapters.

The package is reasonably priced, at \$150 for new purchasers, \$85 for students, and \$95 for SAS/C owners (add \$5 for overseas shipping). Special prices are available for registered users of the shareware version of DICE as well.

If you're struggling along with a public domain C compiler, this excellent low-cost package can save you lots of headaches. Highly recommended.

For more information, contact Obvious Implementations Corp., P.O. Box 4487, Cary, NC 27519-4487 USA; phone (919) 859-7407. You can also e-mail info@oic.com for any more information.

My modem talks to me

Yes, my modem was talking to me. No, I haven't spent too much time hanging out on on-line networks and completely lost my mind. Rather, I've installed Advanced Voice Mail (AVM).

This incredible software package supports Zyxel, Dolphin, LineLink, and Rockwell chip-set-based modems. (The LineLink 14.4 faxmodem is available from U.S. mail order houses such as MicroWarehouse for only \$99!)

The program turns your voice-capable modem into a multi-mailbox answering machine. You can archive messages on disk for later playback, and even record your voice conversations.

AVM lets you receive voice messages, faxes (using GPFax or TrapFax), and data calls all on one line.

If you're on the road, you can retrieve your messages remotely, and even change your mailbox greetings. Pre-recorded voice files are available, or you can digitize your own using your phone or an

AI Villalria can be reached via e-mail at villalria@cat.syr.edu; via regular mail at 408 Arnold Ave., Syracuse, NY 13210, USA; or via fax at (315) 471-4043.



Comms upgrade using AVM

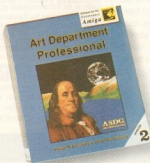
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ADPro's comprehensive ARExx
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even while you're not there.

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120 hours in the week) means that
projects can be done on time,



which otherwise couldn't be
done at all.

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processing features, ability to
read and write many image
file formats, and control
different types of color input
and output devices, can be
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have to.



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The following names are trademarked by the indicated companies: Art Department Professional: ASDG Incorporated. ARExx: Wishful Thinking Development Corp.

It is about time someone spoke out about the disgraceful condition in which many games are released these days. Only recently I wrote a letter to another magazine in which I raised the very points brought up by Mr White in his 'Bug in the system' article (May 1994 - Ed). I consider this to be a major issue and one which has received precious little coverage in the press.

As an Amiga 4000/030 owner I too have had to put up with disappearing golfers, vanishing Heinkels, B17s that refuse to fly, and all manner of other insults. Like Mr White, I have on occasion vented my dissatisfaction at the publishers of these abominations, only to be met with a stony silence.

They just do not care. Once they have your money they want nothing further to do with you or their program. After-sales service is just not a term in their vocabulary.

There is a distinct lack of integrity and pride shown by many in the industry, their attitude is irresponsible and unprofessional and, frankly, it stinks.

An excuse often used, after that of piracy, for the poor standard of software released is that there are too many different Amiga formats to write for. What a load of tosh!

How can firms claim this when they are fully supporting the PC with its abundance of different formats: 386, 486, VGA, SVGA, RAM caches, video caches, local bus, different sound and video cards, different mice, expanded memory, enhanced memory, and a myriad of other variables.

It is not only the bugs that concern me, but also software that I consider to be faulty in design, and the seemingly plain stupid things done by some firms. Forcing me to write to a game disk I cannot back up is a common problem and quite unacceptable behaviour in my opinion.

Constant in-game music that cannot be switched off, long boring intro and idiotic protection systems are also guaranteed to rub me up the wrong way. Where do intelligent, talented people get such ludicrous ideas from?

There is nothing more irritating than a game which has a magnificent and pointless intro followed by a program which is bloody awful and bugged! Why can't software houses spend more time on the game itself, correcting the faults and using their talents to improve the program?

I also hate games with a heap of superfluous

The public speaks out



Amiga Computing reader, David Glynn, was incensed enough about bugged software, and wrote so well on the subject, that we just had to print his comments

Editor's note

The System games section will be reporting all major bugs found in games reviewed each month. We can't hope to find as many as readers who play a game for weeks on end, however, so if you find a bug in a new game, write to us at the usual address.

ous bunn in the box, which I find quite insulting. I do not buy software because of a pretty box or a free reproduction of a World War II newspaper - only good manuals, keyboard guides, and maps are required, all in a convenient and sensibly sized box. I am not a child or a halfwit!

Manual protection should be standard throughout the industry. The professional pirate is going to break any system eventually anyway, and password protection defeats the guy with the latest hardware back-up device, while leaving the game hard drive installable.

If sensibly implemented, manual protection really is no inconvenience at all and is a very small price to pay for the benefits it brings.

The best way forward is for magazines to be more critical in their reviewing of bugged software and perhaps even go as far as scoring games on the number of bugs they contain, so that it is obvious to anyone even just glancing at the page. The buyer at least then knows what he's letting himself in for.

We readers could even advise you of all faults we find and a section of the magazine could be set aside to report these. How about

a league table of bugged games to see if we can embarrass these people into doing the right thing?

In the end, people will always buy defective games rather than no games at all. No stickers on the box or a league table of bugs is going to alter that, and maybe even if we did vote with our wallets and stop buying bugged software the firms would just stop developing for the Amiga. All we can do is to keep complaining and hope that eventually decency will prevail.

Steve White's article constitutes the same two pages of text I have read in a very long while. I hope that the people it is aimed at recognise themselves in it and are ashamed into cleaning up their act.

Let's see games released in better shape in future, no more rushed-looking programs. We can wait!

I would rather have a finished product tomorrow than a faulty one today, and hope about some patches released into the public domain for those defective programs already on sale?

David Glynn, South Gosford

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Our word processors go beyond simply producing normal letters and documents, at which they naturally excel, and progress into a world where "how the whole document looks" is just as important as "what it says". Admittedly, this can be achieved with Desk Top Publishers - but they're not so easily used as word processors, especially when a good looking

letter needs creating quickly - they're far too cumbersome. Final Copy II offers the perfect balance between the two requirements. Ease and speed of use, combined with total control over the perfect final printed presentation.

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cropped) with no loss of printing quality. Text can also be printed over graphics! It's features like these that explain why some professional magazines, with 200+ pages, are produced effortlessly with Final Copy II! Publishers, and many others, have quickly discovered... No other Amiga Word Processor has all the capabilities Final Copy II users have always taken for granted!

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NEW Final Writer Release 2

Final Writer was launched last year with the power user in mind. It is the Amiga's only Hard Drive compulsory word processor - neither performance nor features have been compromised to maintain compatibility with floppy systems. As well as having a unique list of features for the author of longer documents and publications - automatic indexing, table of illustrations, table of contents and bibliography generation - Final Writer with its **TextBlocks™** was the first word processor to put a character (or group of characters) anywhere on the page, at any size and any angle. It offers its users a virtually unlimited ability for effects with graphics and text. Just like Final Copy II.

Final Writer also includes **PerfectPrint™** and has tools to create structured graphics with new **Fast Draw Plus™** (now with additional functionality including new options like rotation). And... you can also access features unique to SoftWood with both **TouchTools™** and **PowerUser Bar™** "one-touch" technologies. By simply "clicking" a button,

you can define, change and save such things as the 'Paragraph Styles' (ie. Font, Font Size, Text Position, Bold, Italic, Underline etc.) and 'Layout Options' (left, right, centre or justified, bullets, line spacing, indents etc.). The options you have through single button selections are nothing less than remarkable! Indeed, a magazine heralded these as "the closest thing to Microsoft Word to appear on the Amiga!". Also uniquely, Final Writer can import, scale, crop, view on screen and output structured PostScript/EPS clip-art images (we supply a hundred free with the package) on any printer (>2mb required). And... if you own a PostScript printer Final Writer is the only word processor with scaling, thumbnails, crop marks and halftoning. Combine features like **Allexx/Macros** and **Text Clips™**, with others new to Final Writer Release 2, including floating tool palettes and UNDO/REDO (on text, formatting and graphics actions) - and we have...

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1990

De-archiving applications - Workbench 2.0 and above

Always boot from your CoverDisk when de-archiving applications. The installer programs can be located via the install icon with the appropriate name in the WB_2&3_Only drawer.

The de-archiving procedure has been much improved and now combines the power of the official Commodore installer program with that of Workbench 2.0 and 3.0.

The installer program is designed to be powerful yet simple for the beginner and features a user-friendly interface allowing you to de-archive programs with a minimum amount of fuss. The installer programs for Workbench 2 and 3 users can be located via the icons named:

Install[program name]

eg:

Install[PM]

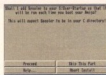
To run, simply double click on the icon which will load up the installer program.

Using the installer

Ignore the buttons that appear when the installer program boots up and simply click on the Proceed button. The program will then copy the necessary files to RAM.

Once this has finished it will inform you that it is about to format a disk in DF0. Click

Don't forget to insert a blank disk at the prompt and before pressing Proceed



Any commands that need to be added to your User-Startup can be done with the press of a button

on Proceed, at which point you will be told to insert a blank disk ready for formatting.

Once you have clicked on Proceed, the installer will indicate that it is formatting the disk in DF0. When this has finished, click on Proceed again to start the de-archiving procedure. When the application has been de-archived you will be told where the de-archived files are. Click once again on Proceed to finish.

If at any time you are unsure as to whether you want to continue installing, you can click on the Abort Install button.

Occasionally, utilities may need to add instructions to your User-Startup file located in the S directory so that they will function correctly. If you want to add the instructions, click on Proceed when prompted.



The Workbench 2.0 and 3.0 installer icon

De-archiving applications - Workbench 1.3

Don't worry about the installer options. Simply click on the Proceed button

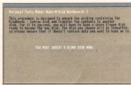
Always boot from your CoverDisk when de-archiving applications. The installer programs can be located via the install icon with the appropriate name in the WB_1.3_Only drawer.

Install[program name_1.3]

eg:

Install[PM_1.3]

When you load up the 1.3 installer the program will first prepare itself ready to de-archive the program to a



After inserting a blank disk press y to continue or "n" to abort

blank disk(s). You will then be asked to insert a disk to be formatted into DF0 and either press y to continue or n to abort.

Provided you answer y, the disk you insert will be formatted and the application de-archived.

Installing utilities

You should first run the MakeUtilitiesDisk_1.3 to format a blank disk called ACUtilities which will be used to store any utilities you eventually install.

This disk can be used with future CoverDisk utilities until it becomes full. The MakeUtilitiesDisk1.3 program will be a permanent feature of the CoverDisk.

To install any utilities, boot your machine with your CoverDisk inserted in DF0. Utilities can be installed by clicking on their install icon found in the appropriate drawer in the WB_1.3_Only drawer. You cannot specify their destination and any additions to the Startup-Sequence must be done manually.

When installed the utilities are copied to a drawer called ACUtils in the ACUtilities disk.

getting started

The Amiga Computing CoverDisk is designed to be as simple to use as possible. Follow these instructions and you'll be up and running in no time!

We have now managed to fix the problem with AmigaDOS displaying a "disk is write protected" requester when a write-enabled disk is inserted. Just make sure you insert a blank disk when the installer programs tell you to - and not before or after.

Installing utilities

The procedure for installing utilities is much the same as installing applications, except that you can boot from your hard drive or Workbench disk. As utilities don't need to be de-archived, you are asked to specify a directory on your hard drive or Workbench disk where you would like to install them.

If you don't want to install to the default directory you can change it by clicking on Change Destination. The Show Drives button will allow you to select a new device and directory. You can create a new drawer for your utility to go in by clicking on the Make New Drawer button and typing in the name.

You can also make a utilities disk by running the MakeUtilitiesDisk1.3 program located in the WB_1.3_Only drawer and installing your utilities to here. At times you may be asked if you want to install a utility's documentation. A tick box indicates that the documentation is selected for inclusion, but you can click on the box to ignore it or simply click on the Skip This Part button.

The utility installer programs can be found in the appropriate program drawer in the WB_2&3_Only drawer.

You can easily install documents and create new drawer thanks to the installer's user-friendly interface



Phonelt is very small in size, around 30K, and features a user-friendly button interface which allows you to store names and numbers with the minimum amount of fuss.

On loading Phonelt you will be presented with the Sewer Vision logo button. Click on this button to enter the main Phonelt display.

The main window is made up of a series of buttons which you can click in order to perform certain tasks. Inside the gadgets are the Name and Phone strings which allow you to enter data.

You will notice that you begin on card 1 of a total of 1. You can add more cards by clicking on the Add button or pressing A and can have up to 200 cards in a single Phonelt file.

To enter some text you should click in the appropriate gadget or press the Return key. You must have no more than 30 characters in the Name string and no more than 16 in the Phone string. You must also make sure that you press Return once you have finished entering data, otherwise Phonelt will not store it.

Below is a list of all the buttons, their keyboard short-cuts and their functions:

● Name - Return

This gadget allows you to enter a name string. Only 30 characters can be entered and you must press Return so that Phonelt will store your entry.

● Phone - Return

Like Name, this is a string gadget. Only 16 characters can be entered and you must press Return so that Phonelt will store your entry.

● Help - Help

The Help button will bring up the Phonelt information, who it is registered to (in this case Unknown) and special thanks messages. Click on the More button and you will be presented with a list of all the keyboard short-cuts that Phonelt employs.

● Add - A

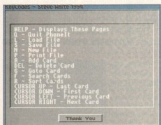
This will increase the amount of cards you have, up to a total of 200.

● Delete - Del

Delete will erase the current file and shift all cards after it down by one position.

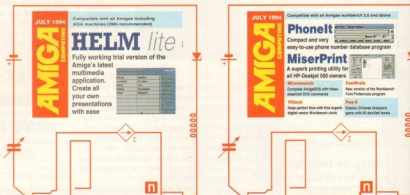
● New - N

New will erase any files presently in memory and create a clean one, starting at card one with a total of one. If you have unsaved



You can find out all of Phonelt's keyboard short-cuts by clicking on the Help button

The Cover



Personal Organisation

If your names and addresses need re-shuffling look no further than Phonelt, a user-friendly database system

changes you will be asked to confirm the New option.

● Load - L

Load will allow you to load a previously saved Phonelt file. All Phonelt files are preceded with .pi to distinguish them from other files. The default directory is S:

● Save - S

The Save button will allow you to save the file presently in memory. The file will be saved with an extension .pi.

● Print - P

Print will output the presently loaded file to

PRT:. The printout will look like the diagram below:

Phonelt

Name01
Name02
Name03

Registered name

Phone01
Phone02
Phone03 etc.

● Quit - Q

Quit will exit Phonelt. If you have unsaved changes you will be asked to confirm this option.

● Goto - G

Goto will bring up a requester, allowing you to enter the number of a specific card. If the

Disks

Vclock

Author: Tobias Ferber

Vclock is a digital vector clock that will tell the correct time if you have a battery-backed clock in your Amiga.

Vclock can easily be personalised to your own tastes by editing the Tool Type entries that can be found by clicking on the Vclock icon once and selecting information from the Icons menu on Workbench.

Below is a list of all the many keywords and values that can be added to the icon Tool Types:

X/N,Y/N,WIDTH/N,HEIGHT/N,SETPEN/N,UNSETPEN/N,OUTLINE/N,BACKFILL/N,BLANK/N

X or -x	opening position; left edge (default 0)
Y or -y	op edge (default 0)
WIDTH or -w	initial window size; width (default 350)
HEIGHT or -h	height (default 55)
SETPEN or -s	pen used for set segments (default 2)
UNSETPEN or -u	or unset segments (default 3)
OUTLINE or -o	for segment's outline (default 0)
BACKFILL or -b	to fill the background (default 3)
BLANK or -t	open screen and show clock w/ given colour table

You can view this list by simply starting Vclock with a '?' as an argument.

The trailing /N in AmigaDOS options indicates the need for a [N]numerical argument to a keyword. This parameter is considered a decimal number. If an invalid number is specified an error will be returned. The /N must not be typed in the command-line with the keyword.

-x [xpos] -	set the left edge of the Vclock window to [xpos].
[xpos] -	therefore must be a numerical argument >= 0.
-y [ypos] -	set the top edge of the Vclock window to [ypos].
[ypos] -	therefore must be a numerical argument >= 0.

The specified (x/y) position is moved towards (0/0) if your width or height value is greater than the dimensions of the Workbench screen.

-w [width] -	set the width of the Vclock window to [width].
[width] -	therefore must be a numerical argument >= 0.
-h [height] -	set the height of the Vclock window to [height].
[height] -	therefore must be a numerical argument >= 0.

If your width or height values are beyond the dimensions of the Workbench. Screen Vclock will adjust your window towards the top left corner of the screen.

Only when they are still too large is the window shrunk.

-s [pen] - specify the pen used for set segments of the lcd digits.

The number of available pens is limited by the depth of your Workbench Screen. There are 2^n pens available where n is the number of bitplanes in your Workbench Screen.

- u [pen] - specify the pen used for unset segments of the lcd digits.
- o [pen] - set the outline pen of all lcd segments whether they're set or not. Set this value to either setpen, or unsetpen to hide unset segments.
- b [pen] - set the background colour. See -s [pen].
- t [map] - this option is a by-product of a screen blanker. It should be the only option in the command line.



Keep perfect time with this neat little digital vector clock. Now you need never miss that appointment

Amiga Computing
JULY 1994

FontPrefs

Author: M. Stengle

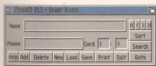
FontPrefs replaces the Font program in the Prefs drawer of your Workbench. Apart from a superior interface, FontPrefs allows you to see the font you have selected in the Look at Fonts window without having to Use first.

There is no documentation for FontPrefs as the program follows the same guidelines as the Workbench Font program.

We recommend that when you come to install the FontPrefs program you do so on your Workbench disk. You can then delete the original Font program or back it up.

Get
Blitzed!

Phonelt is a handy name and phone database which utilises a very user-friendly button interface



If you haven't already noticed, Phonelt was written using Blitz Basic 2 from Acid Software.

Blitz Basic 2 is a very powerful Basic programming language, in many ways better than Amos Professional, and is capable of creating fully Workbench compatible applications and lightning fast games.

Blitz Basic 2 makes it possible for Amiga users who have shied away from the complexities of assembly language to produce very professional programs with the minimum amount of fuss.

As this language is becoming more and more popular Amiga Computing is considering a tutorial for those who would like to become adept at programming the Amiga using this language.

If you feel that you would like to see a tutorial on Blitz Basic 2 please write in to the following address:

ESP Blitzed
Amiga Computing Magazine
Europress Enterprise Ltd
Europa House
Adlington Park
Macclesfield
SK10 4NP

card exists it will be displayed in the main Phonelt display.

Search - F

The Search button will allow you to search for specific criteria in the Name and Phone gadgets. Type in the data you wish to search for and then on the appropriate field button. The search looks from the beginning of each field. You can also scroll the files with the buttons.

Sort - R

This button will sort all the Name fields into alphabetical order and then rearrange them into the correct order. The Sort takes only the first letter of each entry.

> - Cursor down

This will take you to the first card.

> - Cursor left

This will take you to the previous card.

< - Cursor right

This will take you to the next card.

< - Cursor up

This will take you to the last card.

McCommands

Author: Michael Letowski

McCommands adds four essential AmigaDOS commands, each of which can be used for a variety of tasks. When you install McCommands from the CoverDisk it is recommended that you copy them to the C: directory of your Workbench disk.

What follows is an in-depth look at each command including syntax:

Name - ClickStart

Enables (or disables) some features of AmigaDOS.

Command - ClickStart [CLICK] [NOCCLICK] [STAR] [NOSTAR] [PIPE/K] [NOPIPE/S] [NOMULTI] [ALERT=AlertDisplayTime] [QUIET]

Template - ClickStart CLICK/S, NOCLICK/S, STAR/S, NOSTAR/S, PIPE/K, NOPIPE/S, MULTIV/K, NOMULTI/S, ALERT/K/N, QUIET/S

Description - ClickStart allows you to customize AmigaDOS to suit your preferences. Possible changes are:

- Disk drives clicking.
- Star wildcard.
- Unix style pipes.
- Execution of several commands at once.
- Alert display time.

Options:

CLICK - enables drive clicking.

Peg-it



Author: Paul Burke

Peg-it is very similar to Chinese checkers but has been given a humorous face lift. In case you're not familiar with the game the basic idea is to leapfrog counters, or in this case Peg-its, therefore removing them from the board.

Peg-it is a little harder though, as you not only have a time limit to beat but also a set amount of moves, invariably only enough to complete each level.

On loading you will be asked to play or enter a password (passwords are displayed every time you finish a

level). The game screen is mostly made up of the board which is divided into small squares. The Peg-its then enter the board and take up their positions. To the right is the time limit and available moves and to the left is the present level indicator and Peg-its remaining on the board.

Using the mouse you must select a Peg-it and then select a destination for it to travel. Diagonal movement is not allowed and you have to jump two spaces, leapfrogging other Peg-its to push them off the board.

It's a good idea to plan your strategy before you move, although you will have to make a compromise



Rather than start at the beginning, Peg-it allows you to enter a password and start anywhere you like

NOCCLICK - disables drive clicking.

STAR - enables use of * as a replacement for #7.

NOCCLICK - disables use of * as a replacement for #7.

PIPE=PipeChar - sets character to be recognized by Shell as pipe. Only one char is used. If you supply an empty string, the default character is assumed (pipe).

NOPIPE - disables piping.

MULTI=MultiCommandChar - sets charac-

ter to be recognized by Shell as multiple commands character. Only one character is used. If you supply an empty string, the default character is assumed (backslash).

NOMULTI - disables multiple execution. ALERT=AlertDisplayTime - sets length of alert display time. The time is given in display frames (there are 50 frames/second in PAL, 60 frames/second in NTSC). 0 means no alert.

MiserPrint

Author: Heinz-Gunter Boettger

MiserPrint is a print utility that puts up to 8 normal pages of text on one sheet of paper using the HP-Deskjet 500 series of printers. MiserPrint uses the small built-in fonts (Courier and Letter Gothic) of the HP-Deskjet printers.

When the program starts up, the default values are set and the MiserPrint prefs file is read. After that, the command line arguments or the Tool Types are evaluated and the main window is opened.

The prefs file does not exist on the CoverDisk version of MiserPrint but you can create one and save it for future use.

To start MiserPrint from CLI simply type its name and the parameters you need. You can use '?' to get the template. The program uses the defaults and the command line options override them.

Template

FILE=USLEGAL/S,USLETTER/S,BLOCK/K,N,COURIER/L,P/K,N, PFF=PERMITFF/S,PESC=PERMITESC/S,DRAFT/S,LOB=LOBOLD/S, DOUBLE/K,HEADER/K,FOOTER/K,SEPARATE/K,BN=BLOCKNUMBER/K, TAB/K,N,TO/K,PREFS/K

FILE - The file that you want to print.

BLOCK [n] - n must be 1, 2 or 4.

LPI [n] - n must be a number between 8 and 16.

DOUBLE (ON/OFF)

HEADER (ON/OFF)

FOOTER (ON/OFF)

SEPARATE (ON/OFF)

BLOCKNUMBER (ON/OFF)

These flags must be set to ON or OFF. The format of the header and the footer can be changed in the string gadget of the GUI.

TAB [n] - n must be a number between 1 and 10.

TO [filename] - The filename must be a valid AmigaDOS one.

PREFS [filename] - The filename must include the full path.

The Workbench Tool Types for MiserPrint are:

USLEGAL, USLETTER, BLOCK=[n], COURIER, LPI=[n], PERMITFF, PERMITESC, DRAFT, LQOLD, DOUBLE=(ON/OFF), HEADER=(ON/OFF), FOOTER=(ON/OFF), SEPARATE=(ON/OFF), BLOCKNUMBER=(ON/OFF), TAB=[n], TO=[filename], PREFS=[filename]

Loading MiserPrint

To load MiserPrint from the Workbench or CoverDisk simply double-click on the icon with the mouse. Once it has loaded you will be presented with a button-style interface. What follows is an adequate explanation of the most important buttons:

Paperize - With this gadget you can select the papersize that is used (DIN A4 is the default, because it is the standard size in Germany where MiserPrint was written).

Block - You can choose between three text arrangements:

1x1: one big block

1x2: two blocks, which are formatted in two columns

2x2: four little blocks, normally four normal pages on one sheet

Font - The HP-Deskjet 500 has two built-in non-proportional fonts:

between strategy and time remaining.

If your strategy pays off and you manage to complete the level you will be given a password for the next one. As you progress the difficulty increases and game objects begin to appear.

There are five game objects in this version of Peg-It and while some will prove helpful, others make completion extremely difficult. Below is a list of all the objects and their effects:

- Blocker** – You cannot jump or land on these. If you do you will lose a life.
- Trampoline** – This allows you to leapfrog more than one Peg-It.
- Directional arrows** – The arrows will bounce you off in the indicated direction.
- Springboards** – These will catapult your Peg-It.
- Teleports** – Land on one of these and your Peg-It will be transferred to the other side of the board.

Description – Examines types of specified files using DataTypes. By default (no files supplied) it examines the current directory.

You can use it to search for specified types of files (e.g. pictures or 8SVX sounds) by specifying GROUPID or TYPEID. These should be no longer than four letters and are case-sensitive. Sub-directories can be scanned as well by using the ALL option.

Options:

- FULL – print full path of examined file.
- ID – print group ID and type ID that the file belongs to.
- ALL – scan sub-directories as well.

Name – For

Allows execution of a command for multiple arguments.

Command – For [ALL] FilePattern [Command]

Template – For "FILE/A,COMMAND /F,ALL/S"

Description – For runs specified as commands for multiple arguments. Two special patterns are recognized in command: %S is replaced with file's name, %P is replaced with full path and name. If no COMMAND is supplied, then simple execution is assumed (%S).

ALL forces scanning sub-directories as well; however, the command is not run for directories – it is run only for files.

Options:

- ALL – scan sub-directories as well.



Name – Touch

Change date of last modification for files.

Command – Touch [Files] [ONDATE] [ALL] [QUIET]

Template – Touch "FILE/M,ONDATE/S,ALL/S,QUIET/S"

Description – Touch changes date and time of last modification to current system date for specified files. With ALL sub-directories will be affected as well.

Normally, the current date is used for each file (therefore files Touch'd with one command can have different dates). ONDATE forces same date and time for all files. This version differs from the Unix one in that it doesn't create empty files or directories.

Options

- ONDATE – use one date for all files.
- ALL – scan sub-directories as well.
- QUIET – don't print any messages.

QUIET – suppresses informational messages.

Name – Examine

Determines type of file using DataTypes.

Command – Examine [Files] [GROUPID=Group] [TYPEID=Type] [FULL] [ID] [ALL]

Template – Examine FILE/M,GROUPID=G/K,TYPEID=T/K,FULL/S,ID/S,ALL/S

Courier (6 point, 20 cpi)
LetterGothic (6 point, 24 cpi)

LPI – A slider gadget allows you to select the lines per inch between eight and 16.

The two text gadgets 'Lines' and 'Cols' show the dimensions of one block.

Select Pages – After a file scan you are able to select the first and last page that you want to print. The text gadget below shows the first and last page (you can't see the last digit if you want to print the pages 1000 - 9999).

Formfeed – If this option is enabled, the text after a formfeed is printed on a new block.

ESC – With this option you can print some ANSI-ESC-sequences. MiserPrint can handle italics, underline and boldface. The others are filtered out.

Quality – Three print qualities can be selected:
Draft: the fastest print
LQ: probably the most favoured mode
LOBold: perhaps somebody will use it

Double – This option enables the printing on both sides of the sheets so you can print eight normal pages on one sheet (if block is set to four). First, the even page numbers are printed, then a requester invites you to rotate the sheets before the odd pages are printed.

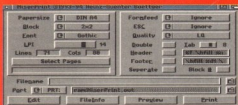
If your printout is redirected to a file, MiserPrint saves the even page numbers to [filename].1 and the odd ones to [filename].2. You must copy the files in this sequence to PAR: or SER: for a later printout. Don't copy them to PRT:!

Tab – The 'getline' function of MiserPrint exchanges the tabs with the number of spaces you entered in the tab gadget, because MiserPrint can't use the tabulators of the printer. Otherwise you get a wrong formatted printout.

Header/Footer – A header or footer will be printed on every sheet. You can define the look of them. It supports some printf- or tex-like expressions:

- %f – the filename without the path
- %d1 – the current date (15-Sep-93)
- %d2 – the current date (15.09.93)
- %d3 – the current date (09/15/93)
- %t1 – the current time (17:25)
- %t2 – the current time (05:25 PM)
- %n – the page number and fills a line with spaces until the line has the full length

● For more information on the MiserPrint interface and examples take a look at the MiserPrint documentation on the CoverDisk.



MiserPrint is a superb utility that will allow owners of the HP Deskjet 500 series to monitor their print output.

Create your own

computerised books with this

fully working trial version of

the latest Amiga multimedia

application - HelmLite



Such is the diversity of HelmLite that you can even create an interactive calendar

Helm creates electronic books of one or more pages. Each page consists of any number of buttons, textfields, imagefields, shapes, charts, and selectors. When you click on any of these objects, Helm will execute a script or a list of pre-programmed actions that are connected to the object.

There are several ways to browse through a Helm book:

1. Clicking on objects - most books will have arrows that you can click on with the Selection button (left mouse button).
2. Using menu items - you can use the Go menu to move the first, last, next, or previous page. Many books trap the Menu button (right mouse button).

MENUS

This means that the menus will not appear when you press down the Menu button. You can also get the menus to appear by moving the mouse pointer to the top of the screen before pressing the Menu button.

3. Cursor Keys - at most times, you can use the cursor keys to move to another page in the book. If you are currently using tools to create or modify objects, you will not be able to use the cursor keys to change pages.

If you make changes to a book, Helm automatically saves the new information. For instance, you do not have to save the book again when you add a new name to an address book. Helm will automatically store the new name in the book.

Each page of a Helm book is associated with a form. A form defines a page's display, default font, and commonly used objects. A book must have at least one form and one page. The objects of the page always

appear on top of the objects of the form.

When the user moves from page three to page four, Helm will automatically switch to form two and change the display mode if necessary.

Forms are like master pages or templates. You can define any number of forms in a book. You edit the current form by selecting Edit Form from the Edit menu. Don't forget to de-select "Edit Form" when you want to edit a page again.

Helm is built with a seamless interface. This means that you don't go to different places in the program to perform different

tasks. The draw and paint aspects of the program work together and are always available. In fact, you can choose to display both the draw tools and the paint tools at the same time.

You can use the palette window to select the colour of new or existing objects. You can also use the palette window to choose the colour of paint when you are painting within an imagefield.

The following are the basic steps for creating a Helm book:

1. Select New from the Book menu.
2. Use the file requester to enter a name for

Buttons - are simple rectangular objects. You can quickly create an interactive display by drawing a few buttons and attaching actions to them. You can customise them with different borders, colours, patterns, fonts, and shadows.

Charts - by entering values into a textfield, you can create a chart that is displayed on the page. You can choose from five chart types: scatter, line, area, bar, and pie.

Imagefields - are like miniature paint programs. Each imagefield can contain a single image at a time. An image consists of one or more bitmapped frames. You can load IFF images into Helm or you can edit an image by using Helm's paint tools.

Selectors - are self-contained control panels that Helm can create and manage. To use a selector, decide where to put it and what choices it should give the user. Helm handles the rest. The selectors are:

Empty - a blank selector that does nothing. You can use it to create a background by selecting a colour and border type within it's information requester.

Pop-up Menu - displays a menu of items when pressed with the Menu button. When the user selects an item, Helm displays the text of the item within the selector button.

Cycle - when pressed with the Selection button, it cycles through a series of items.

Check Box - select multiple options by clicking on check buttons.

Function - a set of buttons that Helm automatically sizes and positions for you. Each button is a simple non-toggle button that does not change the state of the other buttons within the selector.

Multiple Choice - select options by clicking on one or more of a group of buttons that are displayed within the selector.

Single Choice - select an item from a group of items by clicking on one of the buttons within the selector. When you click on a button and highlight it, Helm automatically clears the highlighting of the previously selected item.

De-archiving HelmLite

Boot your Amiga with the HelmLite CoverDisk. Open up the HelmLite disk and double-click on the installer icon. The installer will copy the Helm program and Examples to two blank disks which you should have ready.

As HelmLite is such a complex program you will really need to have 2Mb RAM in order to get the most out of the application.

1Mb users will have to delete or move the BookShelf file that is loaded every time Helm is run. When you are informed that the BookShelf cannot be found, select New to create a fresh book.

In next month's issue of Amiga Computing we will be featuring a more in-depth look at the many features of HelmLite.

You are licensed to use HelmLite until September 1st 1994 as it is a trial version.

Object types



When you have created your pages you can add special effects to them where they appear and disappear



IBM owners should delete the Bookshelf file and select New when the Helmlite requester appears

your book.

3. Helmlite will display a requester asking whether you want to copy the current form to the new book. To create a completely empty book, click on the No button.

4. If you want to use a different display mode, select Display from the Author menu. Helmlite will display a requester for choosing a new mode.

5. From the Tools menu, select the Palette and Draw Tools windows. The Draw Tools window contains buttons for creating new objects. The Palette window is used for selecting the colours of objects, paint, and marked text.

6. From the Draw Tools window, select an object type. When you move the pointer off the Draw Tools window, the pointer will turn into crosshairs. Press the Selection button (left mouse button) and drag the rectangle until you are satisfied with the size of the object. Release the mouse button and Helmlite will create the object. Helmlite will show control points on the object

which mean that the object is currently selected.

While the object is selected, you can move the object or reposition a control point. You can also change its colour by clicking on a colour in the Palette window while the object is selected.

MESSAGES

To create more pages in your book, select New Page from the Go menu.

You don't have to worry about saving your work. Helmlite will automatically save pages and objects to the book.

The user of a book creates messages by clicking on mouse buttons moving the mouse, selecting items from the menu, or by typing on the keyboard.

In response to these events, Helmlite sends the messages to the relevant object. For instance, if the user clicks on a button, Helmlite will send a SelectDown and then a SelectUp message to the button.

If Helmlite does not find a match to a mes-



sage, the message continues upward through a hierarchy of objects until it is used by an object or it reaches the end of the hierarchy.

You can designate the kinds of messages that trigger an action or script function. To program the behaviour of the book, you attach actions and scripts to objects and menu items.

At the helm

Radio Box - select an item from a group of items by clicking on one of the radio buttons within the selector. When you click on a button and highlight it, Helmlite automatically clears the highlighting of the previously selected item.

Slider - select a numeric value by moving a knob on the selector.

Item Slider - select an item from a group of items by moving the selector's knob.

Palette - choose a colour from the set of colours displayed within the selector.

Scrolling List - select an item from a group of items within a list. Use the slider to scroll through the complete list of items.

Matrix - enter numbers into a table of textfields.

Number - select a number by entering it into a textfield. If up and down arrows are beside the textfield, you can increase the value by pressing the up arrow and decrease the value by pressing the down arrow.

Clock - displays the time in twelve or 24-hour format.

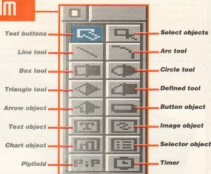
Date - displays the current date.

Information - display information about the book or system. This includes things like the page number and free memory.

File - select a file path from the scroll list by entering it into the drawer and file textfields.

Shapes - are two-dimensional structured objects. They are particularly useful in an authoring environment because they take up less memory and load faster than imagefields. Helmlite includes these shapes: boxes, ellipses, lines, curves, arrows, regular polygons, and irregular polygons.

Textfields - are like miniature word processors. You can enter text into these fields by clicking on the field with the mouse. Like imagefields, you can use a textfield as a button by checking the Use as Button option in the textfield's information requester.



Faulty CoverDisk

If you subscribe to Amiga Computing and your disk does not work, please return it to:

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Picasso II is a graphics card with a difference. Picasso II offers true Retargetable graphics on any Zorro based Amiga, but the real power lies within the software! The installation is quick and simple, just plug in the card, connect the cables and run a fully automatic install script. You will now find new Picasso II resolutions available from the standard preferences ScreenModes program, and useable by all OS friendly programs. The new CuLNUX option offers incredible speed with a 256 Workbench. Picasso II will intercept any program when it is first run. You may then test it's compatibility and set your preferred screen choice thereafter. Picasso II removes the 2Mb Chip RAM limitation, as all screens are stored in Fast RAM. You may therefore open as many large, colourful screens as your Fast Memory will allow! Total screen configuration is provided through PicassoMode, which allows the creation of custom screens quickly and simply. Picasso II comes with TVPaint Junior as standard, along with drivers for ImageFX, AdPro, ImageMaster, Real 3D and GIF, IFF, JPEG and MPEG viewers. Also included is MainActor, an animation program with Picasso II support. A TVPaint 2.0 option is also available.

Picasso II



PABLQ is the new Video Encoder option for Picasso II. Pablo offers the user two additional video ports, one for a standard Composite Sync Signal, and one S-VHS (Y-C) composite port. All video compatible PAL devices can be plugged into Pablo, such as a colour TV or a video recorder. To Genlock, a Time Base Corrector is required. In use, the Intuition driver is switched to the video modes and all PAL resolutions are selectable from the standard ScreenMode requesters. There are five resolutions available, these being 320x256, 320x512, 640x256, 640x512 and 768x576 in all colour depths including HighColour and TrueColour! There is a protective circuit integrated into Pablo so that no modes with more than a 15KHz line frequency can be passed to the monitor. Therefore you can safely switch to higher resolutions for your normal computer display monitor without fear of damaging your video device.



Pablo Video Encoder



Picasso II Draggable Screens

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Emplant is a very special product. Not just because it offers a total Macintosh solution every bit as good (and often exceeding!) the real thing. But also because together with the new M M emulation module, Emplant offers a true multi-platform solution harnessed within your favourite computer. Here are some of the features of Emplant.

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5. Support for all SCSI devices (Amiga side and emulation side).

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TrapFax is the most modern Fax program available for the Amiga. It works on all Amiga systems with at least 512k of memory and Amiga OS 2.04 or higher. You can use all fax modems compatible with the international standard CITT T29.2 Class 2 to send or receive a fax. TrapFax takes advantage of all the features of the Amiga operating system. The installation is easy and flexible, using Commodore's installer program, and is fully integrated into the Amiga Workbench environment. Configuration is achieved via the TrapFax preferences program. A fax queue manager controls send/receive of faxes in the background and faxes are easily viewed. Using the fax printer driver, you can generate and send faxes using your favourite application. The client/server architecture or TrapFax allows operations over a network, such as Commodore's new ENVIOT package.

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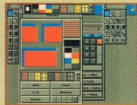
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Software that matches your Hardware



Business Applications



SBase 4

We are pleased to announce that HiSoft is now the authorised UK contact point for Oxi's SBase 4 Amiga products (formerly known as Superbase).

We have stock of both SBase Personal 4.1g and SBase Professional 4.1g and offer full technical support for these programs with our Silver and Gold support options. We can also offer upgrades from earlier versions - please call or fax for details of upgrades and technical support.

Both SBase Personal and Professional are full-featured, fully relational and powerful databases with pull-down menus, multiple windows and full access to your Amiga's multi-tasking environment and they are now compatible with AmigaDOS 3.0 and the AGA chip set.

SBase Professional includes a powerful database management language and supports AReX. Please call for our datasheets on these superb products.



Utilities



Maxon Magic

The Maxon Magic screen saver works in all modes, even with graphic cards, and offers you a choice of 20 different amusing and entertaining modules such as Aquarium, Flying Breakfast, Fireworks, Crazy Worms, Messages, Clock etc.

This is the utility that you simply must own! Maxon Magic is a fantastic combination of 20 different animated screen savers, a system event sound manager and many amusing sampled sounds that will not only be incredibly useful but will give you and your friends endless enjoyment as you

As if that isn't enough value for money, Maxon Magic also lets you assign sounds to most system events including Window/Screen open & close, errors, Alerts, Keys, Mouse clicks, mousesters and more. Choose from the multi-sounds provided or sample into your own sampled IFFs!



Video/Music



The best-value real-time video digitiser you can buy: VideoMaster gives you the ability to record real-time monochrome video with sound at 25 frames per second as well as quality full-screen stills from your camcorder or video recorder. VideoMaster RGB includes our new colour splitter, ColourMaster, and produces amazing quality colour stills.

VideoMaster AGA works on the A1200 and A600, connects via the PCMCIA slot for extra speed and freedom to use other peripherals, allows high quality stereo sound and supports HAM6 and HAM8 up to 640 x 512 resolution for stills.



ColourMaster is a new electronic colour splitter which works in conjunction with VideoMaster for stunning colour stills.



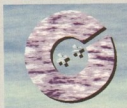
Clarity16 is our premier sound sampler allowing rates up to 32KHz in 16 bit stereo and up to 48KHz in 16 bit mono on an A500; accelerated machines can handle faster sampling rates. The software provides extensive features including full edit control, a MIDI keyboard emulator, a sample sequencer, many special effects and FFT analysis. Version 1.5 has an up-to-date Workbench 3 book, in its own window and is fully compatible with faster Amigas.



Megaloud is the new 8-bit, stereo, direct-to-disk sampler package: the software is packed full of easy-to-use editing features, special effects and extras such as the ability to print waveforms and sample information. The package allows sampling up to 84KHz mono and 56KHz stereo to memory and up to 21KHz stereo to hard disk on an A1200. Supplied with a hardware volume control and an extensive 144-page manual, Megaloud is impressive value at only £34.95.



Programming



The standard C compiler for AmigaDOS gets a major upgrade for 1994: SAS/C Development System version 6.51 supports translation of C++ files with Streams and Complex libraries allowing you to write Object Oriented code.

The C++ translator is compatible with CFront Version 2.1 from AT&T.

There's an improved peephole optimiser, more efficient stack extension and structure return code generation.

There are many other improvements including an enhanced instruction scheduler for the 68040 CPU and the 68882 maths coprocessor, an improved profiler, a friendlier interface to grep, support for C++ within CodeProbe and more.

Workbench 3.1 include files are supplied.

Upgrades start from £59.95 - please call for pricing information.

SAS/C 6.51

Prices

Clarity16 new price	£129.95
Megaloud	£34.95
VideoMaster A500	£69.95
VideoMaster AGA	£79.95
VideoMaster RGB	£129.95
ColourMaster	£69.95
SAS/C 6.51	£329.00
SBase Personal	£129.00
SBase Professional	£249.00
Maxon Magic	£29.95

All products on this page come with full UK technical support from HiSoft. Please call for details.

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Imagine has long reigned as the top stand-alone 3-D rendering package for the Amiga, eclipsed in fame only by LightWave 3-D, which – although it has gained fame by being used to create 3-D graphics for television series such as Babylon 5, SeaQuest DSV, and Star Trek – has the minor problem of requiring the included \$2400 NTSC Video Toaster board as a dongle.

Imagine offers sophisticated object modeling capabilities, photo-realistic scanline and ray-trace rendering, and complex but powerful animation features.

Impulse has many years of experience in the 3-D arena, having released Imagine's ancestor, Silver, in the late 1980s, long before the PC and Mac worlds discovered ray-tracing.

Imagine 3.0 has finally been shipped, and I'm happy to report that this update was definitely worth the wait.

Originally, the package was to be shipped last year, but delays and some last-minute feature additions forced Impulse to postpone the release.

Amiga users who'd ordered the 3.0 upgrade were sent Imagine 2.9 a few months back (see the January '94 issue of Amiga Computing for my look at the features included in that interim update).

The 2.9 release included several new features and many assumed 3.0 would be only a minor upgrade from that.

They assumed wrong. Imagine 3.0 is the most significant update in the history of the package. This is in part because of amazing new features such as Bones, Kinematic States and over 100 procedural textures, but primarily because of the completely new 352-page manual that actually makes it possible to learn the program without spending weeks just experimenting to figure out poorly documented features.

A little background is in order if you haven't used earlier versions of the product. Imagine's functions are divided into a series of editors: Project (the main interface), Forms (an organic object-design editor), Detail (another object-design editor), Cycle (for creating cycling animation sequences, such as an aircraft propeller), Stage (for placing objects in the 3-D environment), Action (an animation and scene-control editor), and Spline (a new object-creation editor that makes creating 3-D fonts a snap). We'll go into detail on all of these later.

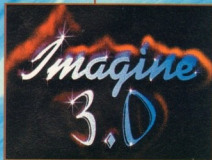
Objects in Imagine, like most 3-D programs, are composed of polygon faces. However, with the four sophisticated object-design editors built into the program, Imagine is a far cry from the bad old days of trying to build F-15 jets out of a puzzle of triangles.

Once your object is created it can be given any colour, dozens of attributes controlling

New



*If you liked Imagine 2.9 then you'll
love this version. Denny Atkin takes
you through the added dimensions
in 3-D graphics rendering*



dimensions

shine, transparency, hardness, etc., and any of over 100 realistic textures.

Objects can also be given different states to represent different positions or shapes – a ball, for instance, may have one state where it's round and another where it's compressed as if it's bouncing.

ANIMATION

Once the objects are created, you then place them on the stage and optionally animate them. As you're creating your project you can move back and forth between editors to tweak the final results.

When everything's complete, Imagine sup-

ports the creation of both still pictures and animations. As far as 3-D programs go it's reasonably fast.

There are many different rendering options and modes that can be chosen depending on whether speed or top-quality rendering is most important to you. Quick previews of your changes are a menu item away in most parts of the program.

The Forms editor is where you can take primitive objects, such as spheres or cylinders, and slice and mould them into more complex, organic objects. It's where you'll often create your basic object shapes before



Soft-edged shadows add a vital touch of realism

moving to the Detail editor, where the real power is.

The core of Imagine is the detail editor, where you create the parts that make up your 3-D universe. You can create objects by building them from primitives (such as spheres, tubes, and torii), polygons, or from free-form drawing of points.

You can also load in IFF images and convert them to flat outlines which you can then "flesh out" into three dimensions. Once you've created basic shapes there, you can modify them by fracturing them (breaking up into component polygons), pulling on faces with magnets, slicing and splitting them, twisting and deforming them, or breaking them into particles.

Of course, you can also use the Detail editor to modify objects created by others. You can load Imagine, Turbo Silver, and AutoCAD DXF-format objects which can be saved in Imagine and DXF formats.

Particles can be used to create some spectacular effects. Particleisation of an object basically converts the faces that make up the object's skin into geometric objects — or even separate Imagine objects! Therefore, you could make an object look like it's built out of spheres or pyramids.

Memory permitting, you could use the ability to use Imagine objects as particles to create a formation of airplanes flying in the shape of a giant plane, simply by substituting

the faces of a very simple plane object with individual planes.

Other new functions include Latticeize, which is handy for making frameworks like the inner structures of buildings or space stations (see the new Imagine logo for an example of this); Applique, which lets you wrap an image onto an object to deform the triangles that make it up, creating a 3-D effect that corresponds to the grey-scale brightness of each pixel in the image; and Wave, which is a ripple effect.

Also in the Detail editor you'll find the States function, which was added in Imagine 2.9. This innocuous menu item packs a lot of power, and is perhaps the most important new feature in the program.

It lets you define different states — size, shape, and other characteristics — of objects or groups of objects. A simple example would be a teardrop that you morph into a circular sphere of water.

You create the initial teardrop with a certain shape and transparency, then define that state as TEAR. Morph and otherwise change the object, and save that state as SPHERE.

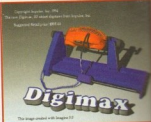
A top-notch program that creates professional results

Now you can save the single object which has both "states" of the object stored in the file. You might have a helicopter that has five different states where the rotor is in a different position for each one, or you could have a human figure with different states depending on the position of the limbs.

You can tween between states, making movements or morphs between states a snap.

As far as the human limbs mentioned above go, you'll want to use a feature new to 3.0. Bones let you create animated objects with much of the complexity of movement of the human body.

Previous versions of Imagine let you create animated objects, but when they moved they looked artificial because they were actually composed of a number of separate objects that were grouped together in a hinge-like manner. A robot might look natural with a



Imagine's forthcoming 3D scanner will make object creation a breeze

hinged, two-piece leg, but a human certainly doesn't.

Objects that use Imagine 3.0's Bones are also composed of a number of separate parts with moveable joints, but the big difference is that the objects have a single, continuous surface.

Hence the name Bones — your objects separate entities that are connected, but the bones they're covered by a single skin.

You can combine Bones with States to make animation even easier. Suppose you create a walking cat. You'd use Bones to create realistic legs that move as it walks, and States for various leg positions, and then transition through the States as you animate.

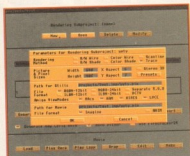
This makes creating realistic, natural animation much easier than with earlier versions of Imagine. Kinematics make objects move in a hierarchy that you create, making walk cycles easier to create and more natural in appearance.

The Detail editor is also where you add textures and surface characteristics to your objects. As in earlier versions, there are many characteristics you can change, including colour, reflection, filtering (transparency), harness, roughness, shininess, brightness, and lightness.

One new characteristic is the ability to create a fog object. This is particularly neat, and can be used to create smoke, mist, or gaseous objects.

You can give objects more complex surfaces by mapping brushes on them. These are particularly handy when used like decals on a model kit, to apply logos, text, pictures, and other images to an object's surface.

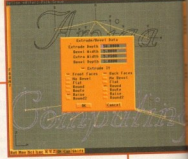
You can use brush maps to map digitized textures like marble onto an object, but because of problems with the edges of the



Imagine will now render directly to the OpalVision graphics card or as Nam 8



Stylish and smooth text using PostScript fonts in the spline editor



Adding a bevel (see front cover) can spice up your text



The new lens flare effect in action

brush matching up, you're better off using the sophisticated procedural textures in this upgrade.

Imagine 2.9 gave us a hint of some of the hot new procedural textures that were to come, but the limited sampling there was nothing compared to the amazing variety of textures found in Imagine 3.0 — there are over 100 of them!

These use mathematical formulas to colour the surface of the objects. Although 100-plus textures sounds like a lot, the actual number of possible textures is nearly infinite, since each texture has a number of param-

eters that can be modified to change the effect.

For example, you can alter parameters in the Waves texture to control the size, frequency, and colour of the waves on your surface. There are even textures like Strobe and SoftEdge for use on light objects.

Co-processor

Note that these procedural textures require a maths co-processor, so if your Amiga doesn't have a 68881 or 68882 maths chip, or a 68040 main processor, then you'll only be able to use the basic textures that were carried over from Imagine 2.0.

As you experiment with all the textures you'll want to try preview renderings to see how they affect your object. The new Set Zone feature lets you select only portions of an image for rendering, making previews much faster when you've only changed part of a complex object.

The Spline editor, added in the Imagine 2.9 interim release, is used for creating objects with complex curves, and it also provides an easy way to create quality 3-D text. You might use the Spline editor to create flat objects such as curvy custom logos.

Imagine 3.0 supports PostScript-format

Textures unlimited

Textures in Imagine 3.0 include: Agate, Antique, Bathtile, Beammeup (like the Star Trek transporter effect), Blast, BmpBranch, Branches, Brushed, Bumpnoiz, Clnnoiz, Cndyappl, Concrete, Confetti, Coolfire, Cracks, Crumpled, Crusty, Dancsprk, Dashline, Dethstar, DinoSkin, Dirttile, Dirt, Dripdrop, Dripaint, Easywood, Fakely, Fireball, Filnoiz, Foggpait, Fogtop, Frnchwin, Frogskin, Fuzz, Gasgiant, Ghost, Hexez, Honycomb, Hrdstrip, Hardwood, Iris, Jersey, Leather, Metals, Mntntop, Monster, Mosaic, Nebula, Oldbrick, Pebbled, Peened, Plaid, Rachecks, Radcomb, Radwind, Rain, Rainbow, Rddthstr, Rectwind, Rectchex, Ribbed, Scratch, Sfstrip, Shingles, Softedge, Spark, Splootch, Sprichex, Stainis, Stamped, Statue, Strobe, Twinkle, Terra, Tiedye, Tracer, Transpar, Trichex, Tritile, Tubewind, Venetian, Venlite, Weavem, Worvein, Wrinkle, ZBuffer, and Zooloo.

That should be enough to satisfy nearly every need, but Impulse says more are coming in incremental updates!

outline fonts for the creation of 3-D text. You can use commercial fonts such as those offered by Adobe, or download any of hundreds of public-domain and shareware PostScript fonts.

Be warned, though, that Imagine is very picky about the format of the PostScript fonts it loads, and it can't handle the slight deviations from the norm found in many home-made or converted fonts.

Of 20 PostScript fonts (mostly shareware) in my PageStream fonts drawer, Imagine could only successfully load five.

If you're creating your own object you'll use Knots, which are splines (curved lines) that you have complete control over the shape of. Examples of objects that will come out looking better in the Spline editor are leaves and puddles.

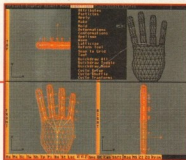
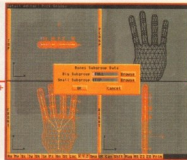
Although Spline editor objects are flat, they can be extruded into three dimensions, and there are a number of bevelling effects that can be added to both the front and back edges.

The Stage editor, where 3-D objects are grouped and assembled into scenes, is dramatically easier to use than in Imagine 2.0.

Some of the improvements, such as the Quick Edge feature that lets you define an outline of an object to speed up redraws, adjustable focal length camera, and real-time



Sensational use of transparency, backdrops and depth of field which would cost £2,000 on the PC



Bones and kinematics give Imagine modellers the freedom to create realistic movement without losing their sanity or their loved ones, and bring the program bang up to date

Save and Quit

Impulse have outdone themselves once again with Imagine 3.0. Although its retail price is steep, it's a top-quality program that can create images that look as good, or better, than \$3,000 packages on the PC and Mac can produce.

Upgrades from Imagine 2.0 are \$100, while Imagine 1.0 users pay \$200 and Silver users pay \$300.

If you're just fooling around with 3-D, \$695 seems like a lot of money. But if you have Imagine 3.0 and you've learned how to use it, you shouldn't be just fooling around anyway.

This is a top-notch program that creates professional results. With a little patience and a bit of talent, you might just be able to use it as a ticket to a job as a professional computer animator.

perspective window, were added in 2.9.

The Stage editor can be used (along with the action editor) to set up and control animations. Two new features make this dramatically easier than in early releases.

Quick Stage changes every object in the Perspective window to a bounding-box outline. Now when you preview an animation in the Perspective window the animation takes place in smooth real-time without redraw delays, letting you quickly preview the action.

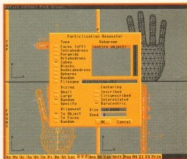
Even more impressive is the new Bluing feature, which is similar to the effect of using onion-skin paper in traditional hand-drawn 2-D animation.

With this feature selected, you can see the position of the objects in the previous frame of the animation in another colour. This is great for clearly seeing how dramatic frame-by-frame changes will be.

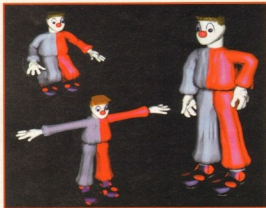
For complex animation, you'll want to call in the Action editor. This presents a timeline view that lists the objects in your animation, as well as which frames they appear in.

You can use the Action editor to control the length of an animation; the position, size, alignment, and special effects that are applied to objects over time; lighting changes; morphing and tweening; and special effects such as rotation, tumbling, explosions, and particle animation.

Imagine 3.0's Action editor now has Cut, Copy, and Paste features; more special effects lines for each object; depth-of-field camera control; velocity scaling; kinematic motion control and automatic user-controllable lens flare.



Break any object up using the new particles requester



Objects with bones do not have clumsy joints which ruin the look

Once everything's put together and ready to go, it's back to the Projects editor to actually render your image or animation.

Imagine 3.0 does support the AGA chip set, including hi-res HAM8 mode. However, it doesn't support screenmodes such as Super72, so you'll probably want to save your images or animations as individual 24-bit IFF images and then use a program like ADPro or ImageFX to render them in the desired mode.

The rendered images look even better than in the previous version. This is due in part to the incredible variety of textures you can use, but also because of the improved anti-aliasing, which, in trade for a little extra rendering time, can completely eliminate those annoying jaggies.

AGA SUPPORT

Although there's support for AGA screen modes, it would have been nice to see support for running Imagine's editors in different AGA modes as well.

For instance, with complex images it would be nice if you could use the 800x600 mode to get a bit more detail on the screen. Unfortunately, you're limited to using 640x400 mode.

There are many other improvements in Imagine 3.0 that I have not got room to go into here. Many relate to the user-interface—for example, you can now create two rows of user buttons, and can access object states from within the Stage editor.

Impulse has done all it can to keep you from having to jump around, so you can spend your time on creation instead of navigating the user interface.

The company isn't content to rest on its laurels, though. Impulse plans to add features such as full Spline editing and object creation, a new visual interface, even more textures and effects, post-processing of images, and physics features such as Gravity and Friction.

For the ultimate in 3-D object creation abilities, Impulse plans to release DIGIMAX this summer, a \$995 object digitizer that will create 3-D object files in Imagine or DXF format.

You simply insert an object, up to about 20 inches tall and 16 inches around. If you want to create a 3-D model of the EuroFighter 2000, you can simply buy a model of it from your local hobby store, insert the completed model, and then use the digitizer to store its shape.

For small, inanimate objects, this will save many professional animators days of modelling work. Other objects present a problem—good luck getting the cat to sit still long enough to be digitized.

SYSTEM ESSENTIALS

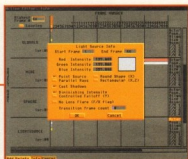
RED = Essential BLACK = Recommended



The bottom line

Product: Imagine 3.0
Supplier: Meridian distribution
Phone: 081 543 3500
Price: £599

Ease of use: 8
Implementation: 9
Value for money: 6
Overall: 8



The global lens flare effect can be turned off on individual lights

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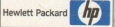
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Following our recent Survivor's Guide to Digitisers we thought it would be a good idea to do a round-up of the current state of the digitiser market – what you can get, what they cost, and what each different digitiser has to offer.

As you'll find out, there are quite a number of Amiga digitisers vying for your attention and many have their own particular attractions, whether it be 24-bit quality, low cost, external connection or blindingly fast speed.

So if you're considering entering the wild world of digitising read on.

Digi-View – NewTek Inc. £179 *

Silica Systems

(Part of the MediaStation pack, bundled with DigiPaint and Elan Performer)

Digi-View is the original Amiga digitiser and, as such, shows its age today because it is slow, doesn't have a built-in colour splitter (though colour gels are included for those with monochrome cameras) and cannot handle Y/C video or 24-bit grabbing.

That said, Digi-View still offers good quality digitising, reasonably comprehensive software and of course supports older versions of the Amiga's operating system.

If you come across a Digi-View being sold cheaply in a second-hand shop or at a computer fair, and you're interested in dabbling in digitising, then I'd suggest you'd stumbled upon a bargain, but I'm afraid that as part of the MediaStation pack (bundled with some fairly old paint and presentation software) it works out as a relatively expensive way to get the grabs in.

VLab Y/C – MacroSystem, £370.12 – AirLink £69.32 *

Amiga Centre Scotland

VLab Y/C is a Zorro-mounted, internal framegrabber card for Amiga 1500/2000/3000/4000 models and is currently one of the leading Amiga digitisers in use by professional graphics and multimedia people.

Being a fast-scan digitiser with direct access to the Amiga's internal architecture means that it can grab and store images to the hard drive pretty rapidly.

Mind you, it can take some time to convert these grabs from VLab's internal YUVN format to something which the Amiga can display and use in other software packages.

But VLab Y/C isn't just a single frame



24-bit
Hi-res
interface



Hi-Res
Hi-res
interface

digitiser, because with its IFR (single frame recording) feature it is very easy to capture seamless sequences of frames from just about any video recorder, regardless of whether it can do good freeze frames or be externally controlled.

By using a clever system which recognises a given start point on a video tape and then grabs the frames in several passes (because even VLab can't grab fast enough to actually grab sequential frames)

a complete section of video images can be grabbed and used as the basis for an animation or Mpeg clip for example.

Although IFR cannot directly control the VCR, it is possible to add the AirLink infrared module which can, as long as the VCR can be controlled by infra-red remote.

AirLink allows the IFR grabbing process to be performed unattended, leaving you free to go down to the pub while the tape is

*Gary Whiteley
guides you
through the
best digitisers
for your Amiga*

Picking

Digitiser	Amiga	Type	Fitting	Splitter	Inputs
ColourPic	A	F	E	Y	CY
ColourPic Plus	A	F	E	Y	CYR
Digi-View	A	S	E	N	C
DCTV	A	S	E	Y	CY
FrameMachine	Z	F	I	Y	CY
FrameStore	A	F	E	Y	CY
SuperPic	A	F	E	Y	C
Vidi Amiga 12	A	S	E	Y	CY
Vidi Amiga 12RT	A	F	E	Y	CY
Vidi Amiga 24RT	A	F	E	Y	CY
VLab PAR	A	F	E	Y	C
VLab Y/C	Z	F	I	Y	CY
VideoMaster	S	S	E	N	C
VideoMaster AGA	6	S	E	N	C

Y=yes, N=no, F=fast, S=slow, I=internal (Zorro slot), E=External, C=Composite, Y=Y/C Video, R=RGB 1=Extra

Best buys

Obviously it's up to you to decide which digitiser will best suit your needs based upon cost, features and the Amiga you have but, if I was forced to, I'd recommend any of the Vidi Amiga products or the VLab Y/C. OK?

HAM
InterlaceHAM non-
interlace16 colour
HiRes
interface
with
dithering

automatically rewound and played until all the required frames have been grabbed.

VLab PAR - MacroSystem, £370.12*
Amiga Centre Scotland

VLab PAR is an external version of the original VLab card (still available for £329 but largely superseded by the Y/C version) so it will work with any suitable Amiga.

However, it supports neither Y/C video

input or IFR control and, because it connects externally, it grabs a little slower than the VLab Y/C. Other than these differences, the VLab PAR functions identically to the VLab Y/C.

DCTV - Digital Creations, £399*
Silica Systems

Although a few years old now, DCTV offers very good digitising as part of its package of

functions. These functions also include a great paint program (the basis for Brilliance), and an ability to display images and compile and play animations in several million colours (not quite 24-bit, but better than HAM) and output them to videotape.

DCTV is an external device which, as far as I am aware, can work with every current Amiga model and extend the display capabilities of most of them beyond even AGA.

But if you're in the market for just a digitiser then you'd do better looking elsewhere.

**VideoMaster, £69.95 - VideoMaster
AGA, £79.95 - Colour Splitter,
£49.95, by AVR* Microdeal**

There are two different VideoMaster models, each designed specifically for particular Amigas, though differing little in operation or design, other than that the AGA model can also utilise AGA graphics modes.

Both models plug into expansion slots - VideoMaster into the Amiga 500's expansion port and VideoMaster AGA into either the A600 or the A1200's PCMCIA slot.

Both VideoMaster models are monochrome only and require an electronic colour splitter (available separately) to digitise colour video from any source other than a monochrome camera (for which filters are supplied).

One of VideoMaster's unique features is

Hints and tips

There are a few things to bear in mind when using digitisers. I described these in detail in my recent *Survivor's Guide*, so this is just a recap.

1. Use a tripod or other stable base for your camera, especially when using a slow-scan digitiser.
2. Light your subjects adequately for crisper, better-looking grabs.
3. Use a VCR with solid freeze-frame if you're grabbing from videotape with a slow-scan digitiser.
4. Do a white balance under the lighting conditions you will actually be using during digitising.

perfection

	DOS	Memory	Sequence grab	Max size	24-bit	Cost
CY	1.3+	1MB+	Y	320x256	N	£499
CYR	1.3+	2MB+	Y	704x580	Y	£699
C	1.2+	512K+	N	768x580	N	£180 (3)
CY	1.3+	1MB	N	736x566	Y	£399
CY	1.2+	1MB+	Y	720x570	Y	£380
CY	1.2+	512K+	N	720x570	Y	£380
C	1.3+	1MB+	Y1	320x256	N	£599
CY	1.2+	1MB+	Y2	704x566	N	£100
CY	1.3+	1MB+	Y	368x576	Y	£199
CY	1.3+	2MB+	Y	720x576	Y	£299
C	2.0+	1MB+	Y	720x625	Y	£370
CY	2.0+	1MB+	Y	720x625	Y	£370
C	1.2+	512K+	Y2	640x512	N	£70
C	2.0+	1MB+	Y2	???	N	£80

*Extra software needed, 2=Monochrome only, 3=part of MediaStation bundle, 5=Amiga 500, 6=Amiga 600/1200

that it can digitise stereo sound, even while it grabs video (though the picture is then restricted to 160 x 100 pixels monochrome).

Another good point is its ability to assign grab sequences for instant access and playback.

Neither VideoMaster should be regarded as anything more than a great toy for the serious Amiga hobbyist. The term "professional" just doesn't come into it, for neither the video nor the audio digitising quality are suitable for professional applications.

However, if you want to have some fun with sound and vision without breaking the bank, then VideoMaster might be just the box you are looking for. Good deals are also available on VideoMaster/Colour Splitter bundles. Call Microdeal for prices.

FrameMachine, £375 – FrameStore, £399, by Electronic Design GmbH * JCA Europe Ltd

FrameMachine and FrameStore cover very similar ground, but whereas FrameMachine is an internal card for any Amiga with a free Zorro slot and can grab sequences of frames, FrameStore is external and can't. Both accept composite and Y/C video inputs.

FrameMachine's forte is its sequence grabbing and editing software, but VLab Y/C does most of the things that FrameMachine does – and usually better.

FrameStore offers excellent quality grabbing but is let down by having a slow, monochrome preview. It cannot grab sequences and it isn't particularly nippy, but if you don't want to buy a VLab PAR or Vidi Amiga 24RT then this might be your best alternative.

ColourPic, £499 – SuperPic, £599 – ColourPic Plus, £699 * JCL Business Systems

These are three different fast scan digitisers, each with their own particular features. For example, SuperPic contains a genlock (but, like ColourPic, can only digitise in resolutions up to 320 x 256) whilst ColourPic



Rombo's Vidi Amiga 24RT



Microdeal's VideoMaster AGA...

Plus can grab images up to 704 x 580.

Both ColourPic Plus and SuperPic have full-colour preview, whereas ColourPic requires a 2nd monitor.

Unlike many digitisers, (which control the incoming image through software) all the JCL models have hardware control over colour, brightness and contrast, so incoming video can be manipulated before grabbing, as well as after.

As far as quality is concerned, I have to say that the JCL digitisers are rather expensive for the results they provide, but they are very well built and offer a range of features to suit most users, especially the ColourPic models.

Vidi Amiga 12RT, £199 – Vidi Amiga 24RT, £299 * Rombo Limited

The Video Amiga 12RT and Vidi Amiga 24RT are Rombo's newest babies and represent a big step up from the Vidi Amiga 12. Why? Because these are real-time digitisers, i.e. fast scan, hence the RT tag.

The main difference between the Vidi

Amiga 12RT and the 24RT is that while they can both grab in 24-bit (that's up to 16.7 million colours), the best screen resolution the 12RT can manage is 368 x 576 pixels, whereas the 24RT has more video memory and so can go to hi-res overscan (720 x 576).

Either way, the quality is something to behold and once again Rombo have thrown down the gauntlet to their competition with these digitisers.

Like Rombo's other Amiga digitiser, the Vidi 12, the 12RT and 24RT are both external models, though neither are supplied with the 9V DC supplies necessary to power them.

Both plug directly into any current Amiga via the parallel port, though it may be better to use an extension lead or a splitter box if you don't have much space round the back of your Amiga.

The RT's digitising software builds on the foundations developed with the Vidi 12 and includes a range of image-processing functions such as negative, blur, false colour, sharpen and more, as well as time-lapse

Jargon buster

Colour splitter (electronic) – An electronic colour splitter is required to separate a colour video signal into the three R, G and B signals needed to digitise a colour picture. Most current digitisers have an electronic colour splitter built in, though there are exceptions.

Colour splitter (optical) – When a monochrome camera is being used R, G and B coloured filters are required to provide the digitiser with the required RGB data. They are placed between the lens and the subject and changed before each colour component is digitised.

Composite video – An encoded video signal which passes all of its information along a single wire. Commonly used by VHS and U-matic equipment. Inferior to Y/C or component signals.

Digitiser – Hardware (and associated software) for converting an analogue data stream into digital information which a computer can store, display and manipulate. Both audio and video signals can be digitised.

Fast scan/slow scan – Refers to the grabbing speed of a digitiser. Slow scan digitisers read the video signal directly into the digitiser. Fast scan digitisers use a memory buffer to instantly store a full frame of video before passing it to their digitising department for further processing.

Jpeg – A software-based picture compression method developed by the Joint Photographic



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Suppliers

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Fax: 0252 737147

JCA Europe Ltd, 30a School Road, Tilehurst, Reading RG3 5AN.
Tel/Fax: 0734 452416

JCL Business Systems Ltd, 71 St John's Road, Tunbridge Wells,
Kent TN4 9TT. Tel: 0892 518181, Fax: 0892 511772

Microdeal, The Old School, Greenfield, Beds MK45 5DE.
Tel: 0525 718181

Rombo Limited, 28 Young Square, Brucefield Industrial Estate,
Livingston, Scotland EH54 9BX. Tel: 0506 466601,
Fax: 0506 414634

Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX.
Tel: 081 3091111, Fax: 081 3080608

White Knight Technology, P.O. Box 2395, Waltham Cross,
Herts EN8 7HQ. Tel/Fax: 0992 714539.



JCL's ColourPic Plus

grabbing, colour previewing and multiple format load and save (including TIFF, BMP and JPEG, and all the standard Amiga IFF file formats).

Rombo also offers an upgrade service for Vidi owners wishing to trade their less powerful digitisers up to a better model, or get the latest versions of the software.

Vidi Amiga 12 - £99.95* Rombo Limited

Vidi Amiga 12 was the digitiser which broke the mould by offering cheap, good quality digitising from both composite and Y/C sources.

Producing a combined digitiser and colour splitter for less than £100 provided many Amiga users with the opportunity of grabbing video images at respectable quality, without a huge financial commitment.

More importantly, the Y/C input meant that serious amateurs - and even some

professionals - at last had an easy, low-cost way of grabbing images from their SVHS and Video8 video tapes and cameras without having to compromise by using composite outputs.

Not only can the Vidi grab single images, but it can also grab sequences of images. This is not particularly quick (generally not more than one per second) and is only in monochrome, but it still presents the possibility of making interesting animations reasonably quickly and easily.

Import the images into a paint program, clean them up a little, paint them in colour and it's Disney here we come. Well, why not dream?

OK, the Vidi Amiga 12 can't grab in more than 4096 colours (HAM) but in many cases this might be all that's needed.

Although Rombo have since extended their range of digitisers (see below), the Vidi Amiga 12 still represents good value for money and a great first step into the world of video digitising.

Experts Group to significantly reduce image storage whilst keeping quality loss to a minimum. Common to all major computer platforms.

Monochrome - 'Grey scale' video signals, such as those provided by a black and white camera.

PAL/NTSC - Two different video system standards. PAL is the one used in much of Europe (including the UK) and other parts of the world, whilst NTSC is used in North America, Japan and elsewhere.

Not directly interchangeable or compatible (PAL tapes cannot be played successfully on NTSC equipment and vice-versa) without the use of a standards converter to convert from one system into the other.

White balance - Adjusting a video camera's response to the current lighting conditions to ensure that its colour reproduction is as true to life as possible. Usually done by pointing the camera at something white and pressing the 'White Balance' button (unless the camera does it automatically).

Y/C video - As used in S-VHS and Video8 systems, Y/C video separates the brightness (Y) and colour (C) parts of the video signal, ensuring better quality images than composite video provides.

YUVN - An intermediate, high quality, file format used by the VLab digitisers when frame grabbing.

lest
we
forget

In addition to the digitisers outlined above, there are also a number of hardware devices which include digitising as part of their functions, though not as one of their main features.

I would have given GVP's IV24 card - a graphics card with digitising and video output capabilities - more of a mention, but at the time of writing it had been discontinued to make way for a new version expected to be out within a few weeks. What else can I say?

Another add-on expected to appear within weeks was the video processor module for Centaur's OpalVision digitising card, which will contain not only digitising functions but also special effects capabilities, keying, genlocking and more.

However, like the new IV24 this one wasn't available at the time of writing either.

G2's Image Engine graphics card also does digitising, but since the whole card, including broadcast-quality paint software, video output and more, costs several thousand pounds, I'm only mentioning it in passing. Contact G2 for more details.

NewTek's Video Toaster also grabs video, but unless you work in NTSC, or don't mind compromising quality by using standards converter and image processing programs such as AdPro to scale the images to PAL sizes, then this one isn't for you.

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Background box

B&PPro2.5 is a modular beast with each window triggered by its own icon. As a result, here's a whistle stop tour of all the available edit and control screens.



Allows the importation of other packages and additional modules into the B&PPro2.5 environment.



enabling user-definable clips to be shared between tracks



A complete run-down on the state of the current production and your machine.



Enables global definition of time signatures, lyrics, scales, chords, dynamics and rhythm changes.



A complete multimedia sequencer which allows samples, stills, animation, external hardware and third-party software to play a part in a B&PPro2.5 production.



Tempo feed-back via MIDI, internal Amiga audio and colour cycling - all three can be mixed and matched as required.



Completely automated mix-down with control for both volume and pan. All fader alterations are memorised by the software - fader grouping also supported.



Complete specification of the data to be recorded/merged. Allows over-dubbing of pitch bend, program changes, modulation and so on.



Numeric positioning of location and edit flags in either SMPTE or musical time.



Large-scale cut and paste of individual measures, verses or chorus - using bounding box and drag-and-drop mouse selections.



Tempo change using a variety of linear and non-linear transition curves.



Instant tempo changes courtesy of four user-definable settings.



Sequencing of a selection of songs over a defined period - ideal for planning an entire set for a live performance.



Selection screen for the hundreds of signal-processing tools available within B&PPro2.5.



Opens the main track window to enable recording, editing and the use of tools.



Main playback control window which also provides access to user-defined flags, loop and punch-in record modes.

Thanks to its natural affinity with a whole range of software and hardware, B&PPro2.5 is as much of a multimedia control centre as it is a MIDI sequencer.

Now Blue Ribbon have attempted to make the best even better with the arrival of B&PPro2.5. Although, at a glance, seemingly identical to its predecessor, the real beauty of this new version lurks just under the surface.

Being more of a muso than a multimedia person, I must admit to being slightly hesitant about the direction of the latest release.

With the arrival of its predecessor and its subsequent expansion into multimedia, I was a little worried that the program's musical prowess would be put on the back-burner in favour of yet more whistles and bells.

Thankfully the reverse has happened, and in fact nearly all the new features concentrate exclusively on the musical side of the software. Unfortunately, due to the huge number of changes, it's only possible to spotlight the very latest additions.

For anyone working commercially time is definitely money. As a result, the arrival of simultaneous looping across all tracks has



Controlling your song and linear tracks

Boolean B&PPro

Although often overlooked, the program's ability to add new features via the accessory window is a key factor in its success. Like the rest of the system this has also enjoyed a little attention in the form of the new Logical accessory.

Basically, this brings boolean operations into a MIDI environment. Although usually associated with 3D modelling and mathematics, boolean operations offer a range of cutting and combining functions which, as far as I'm aware are unique to B&PPro2.5.

The options on offer are as follows:

- **Exclusion:** In this case any matching notes in both the source and target track will be removed.
- **Intersection:** This offers the reverse of the above, and removes any notes which

to be one of the highlights.

Better still, thanks to the variety of B&PPro2.5 track styles it's even possible to record over a looping section. In reality this is done by the addition of a linear track which then plays in concert with the looping section.

For those unfamiliar with the program,

The Sound of

Paul Austin pumps up
the volume with
Bars & Pipes Professional 2.5

New tools

key Finder: As the name suggests, this particular tool will analyse a piece of music and provide both scale and chord progressions. It will even play scales and chords against each other so you can hear the chord within the defined scale.

Auto Mix: Pipeline control of automated mixers such as the Mackie 1604 and the Roland CM.

Legato Tool: Although not a new addition to the ToolBox this updated version now offers a definable overlap for a true Legato sound.

Pattern Tool: Yet another update, which in this

case cures the annoying inability to record a Pattern section while listening to others - in concert with existing tracks - something which its predecessor never quite got the hang of.

Guitar Tool: Now this is a real monster, providing an on-screen fretboard to play solos or entire chords. In addition, single notes - played via the keyboard - can be automatically converted into standard guitar chords and inversions. It's even possible to define strumming styles and add your own chords and performance preferences.

Verdict

Due to the limitations of just two pages it's only really possible to scratch the surface of the entire B&PPro2.5. However, I hope this brief list of enhancements provides a taste of the power this truly spectacular product can provide.

Basically, if you're serious about your music or have a heavy involvement in multimedia it's a product you simply can't afford to be without.

Version 2.5 simply keeps up the Blue Ribbon record of excellence and reaffirms the programs position as the Amiga's ultimate Midi/multimedia sequencer.

ready for numeric input.

Some of the features already mentioned have also transplanted themselves into Song Construction, with the same right mouse button cancellation on edits plus much improved Bounding Box operations – which in the past tended to be a little vague.

Printing is a notoriously tricky business on most sequencers and B&PPro has had its fair share of hard-copy problems. Fortunately, Blue Ribbon have now addressed the problem with a few much-needed improvements.

Arguably the most important aspect is the arrival of optional ledger lines below Treble Clef or above Bass Clef – same difference.

Another big enhancement is the option to precisely set the number of measures per line, and the number of staves per page. In addition, a larger range of print resolutions has also been included.

You can also do your bit for the environment in the sure and certain knowledge that both songs and groups will fill the entire page prior to a page break.

Add to that the ability to print guitar tablature alongside your staves and the hard-copy equation is complete.



SUCCESS

AList Tool: An absolute must for the techie types who require details and perhaps even a printout of exactly what Midi information is flowing through a particular PipeLine. Great for technophiles but not exactly exciting for the rest of us.

Drum Key Tool: Turn your Amiga keyboard into an instant drum pad. It's even possible – with a bit of effort – to transform the entire keyboard with a note on every letter. Obviously, after-touch is sacrificed but on drum tracks it's not always essential.

comply to the intuition style guide. The double width, double height screen display has also been improved.

Now, hotkey commands allow you to jump between the four screen areas, thereby avoiding the annoying screen dragging associated with its predecessor.

In the past, cutting, pasting and merging tracks wasn't exactly tricky but now it's child's play, thanks to a collection of menu options which allow a single command to do all the hard work.

A classic example is a new tool replication feature which automatically copies a tool from one track to all others. The reverse is also available, with instant removal across individual tracks, a group or even the entire song.

Another master stroke is the implementation of automated track splitting. Now, a single menu selection will split the selected track into separate tracks for every note at a specific pitch. As a result, dividing a drum track is simply itself.

Enhanced editing has also expanded into individual track editing, with the most notable example being the ability to adjust clips in concert with the rest of the production.

No longer are you forced to update or close down the edit screen in order to test the changes. On a slightly less monumental scale, it's now possible to terminate track playback, mix clips from the right edit flag and scroll the display using arrow keys.

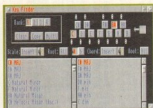
Step entry has also improved fairly dramatically courtesy of the space bar. To extend a selected note you simply tap the space bar and the note grows in accor-

dance to the define note length.

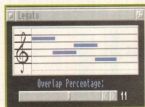
Another much needed add-on is the ability to cancel mouse-driven edits by simply clicking the right mouse button – at which point everything snaps back into its original form.

Lyrics can now be added with syllable dividers – which print accordingly – even across an entire measure or section. Autogenerating has also been added as an option and now, when you open an edit window, the notes are automatically displayed – working from the lowest upwards.

As in the track window, flag editing has also been enhanced. A shift-click on a flag immediately invokes the bounds window



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THE HEAT IS ON



GREY-TRONIK



A woman's

world

A predominantly male industry, the computer business has always been considered a traditionally male domain. Tina Hackett investigates why a woman's place should be in the computer industry...



Even to the casual observer, it is apparent that the computer industry, more than most other fields of business, is predominantly male.

If needing proof, one only has to look around at any computer show to see that the vast majority there are male. A multitude of suited men milling round the trade stands adorned by beautiful model girls hired for the occasion. This is surely justification enough that the industry is geared towards men.

Other evidence can be found when looking on newsagent's shelves where computer magazines leap out with the Mayfairs and Fiestas of this world, revealing scantily-clad women – little to do with computers – but again conclusive proof that this industry is for the male.

And though there's nothing wrong with this approach – beauty sells and always will – it just goes to prove that in the main this business is run by men for men.

Even a brief glance at the computer games themselves portray images of the gorgeous female, wearing little more than the smile on her perfectly formed face.

These range from the car racers which show the bikini clad female

presenting the trophy to the victor of the race, to the popular beat 'em ups depicting long-legged warrior women with their provocative death kicks – when was the last time you saw an intentionally unattractive female in a game?

Although the industry is not exactly at the pinnacle of political correctness, it is perhaps a little over the top to cry blatant sexism within the industry. If glamour sells a few more copies of a magazine or a game then who can blame them?

But there is something seriously wrong when women are being deterred from entering this field on account of it being so male dominated, or when a false image of the industry is portrayed in that all men are stereotyped as 'ranting chauvinists' or that all women are 'brainless bimbettes'.

The question that most often arises is: why does this industry, more than most, have a predominance of males? What is it about this field that attracts the male, while in the main appearing to deter the female?

To be fair, there are obviously root causes to this male domination that would apply to many other fields of industry. So it is perhaps pertinent to look at the

business structure in general to see if this is applicable to the computer industry.

Research has recently shown that there are still fewer women in top level management and that those who have these positions get paid less than their male counterparts in any industry.

For instance, the annual survey* by Remuneration Economics on behalf of the British Institute of Management generally finds few, if any, women in the top categories of jobs among the 25,000 British managers surveyed, and the highest paid male managers earn a third more than the highest-paid women directors.

BARRIERS

Despite many laws covering equal opportunities, women have found that they are still held back from the very top by the "glass ceiling" effect – you can't see the barriers that keep women from the top but they are there.

They find they are at a disadvantage in that generally they are excluded from the business culture that exists which favours the male way of working. Take for example, business deals that are concluded on the golf course, or the exclusive gentlemen's clubs in the city.

And although this is applicable to the computer industry and goes some way to explaining the lack of women in top-level management, in all businesses it does not provide adequate reasons



Looking around at trade shows the predominance of males is apparent. Glamorous women adorn the stands



as to this male domination in this specific domain.

Perhaps the root can be traced back to the schools, and although equal opportunities exist, many more males than females opt for the technology-based subjects while the females tend towards the arts-oriented subjects.

Politics of the business structure would surely not filter down to the younger generation, but it is quite possible that they pick up from adults the sense that females go for more "people based" caring professions while the males opt for the technological, impersonal subjects.

Another, possibly more logical explanation would be to point to the fact that the industry was started by men. When computers first appeared in the 1940s and 1950s (the first electronic computer, the Colossus built by Thomas Flowers, appeared in 1943) a woman's role was very different.

It was then an acceptable viewpoint that a "woman's place is in the home". Man was the breadwinner back then. But why now, over forty years later, when women make up around 45% of the workforce does the computer industry remain predominantly male?

Women, mainly older women, also tend to opt for jobs that traditional society values have conditioned them for. Jobs that involve caring in some way, for homes, animals or people, for example, or artistic and literary careers – the traditional genteel occupations of middle class women.

This therefore deters them away from a technology-oriented career and may also be a small but significant factor to consider.

However, women entering the industry is on the increase, although a slow but sure process, and it is vital that those thinking of doing so are not put off by a negative, sexist image being portrayed.

Who better to give an insight into the computer industry than the women already there. We take a look at what roles women are assuming, what they think of the industry, and how they got into it.

Susie Hamilton, Core Design

Working for one of the leading games houses, Susie Hamilton plays a vital but hectic role as PR Executive. Her duties vary from ensuring all magazines are kept up to date with latest release news, visiting the magazines with the games, and even doing the sales side of things with various promotions and presentations. Her time is also spent with the programming teams, learning about, and how to play, new titles.

As to why this industry is so male dominated Susie states: "It is certainly true that boys spend more time and money on computer games than the average girl and I think the same can probably be said about programming, so when it comes down to interest in computers the boys win hands down.

"Have you ever been with the sad case who has tried to impress you with the tech. spec for his P.C.? It's a bit like the car thing – not that you'd say 'hey baby, I've got an IBM with 8megs of RAM and the biggest hard drive you've ever seen' Got a life! Also, the aggressive and competitive nature of a lot of

games appeal more to the male sex – girls don't take games so seriously, not because they can't compete but because they are not on the same mental wavelength.

"Boys also tend to be a bit more 'clued-up' on both games and machines. Fortunately, you don't need to know everything about games etc. to get into the industry.

"Another factor is that the generation that founded the industry consisted mostly of men – and it is these people that are still at the helm."

Susie gives her thoughts on her part in the industry:

"If I was a man doing the same job, I guess I would be 'one of the lads', but as it happens, I don't feel that I'm excluded from anything just because I'm a woman – in fact I'm treated more like one of the lads than anything else so I suppose I get the best of both worlds. "The males at work certainly don't hold back on swearing/innuendo etc. just because there is a female in the room. I'd



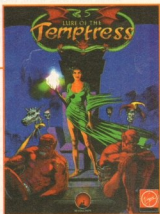
While all the top game characters are male and the programmers cater to the raging hormones of every 13 year old (i.e. the scantily clad, big breasted, amazon woman popping up to wipe the sweat from the brow of an angry, high kicking, blood loving, machete wielding jerk in a Karate suit.) it's pretty obvious men will be attracted to the industry

Debbie Durrant, Digital Integration.

Digital Integration, specialising in flight-simulation software, seems perhaps even more than most, an unusual field for a woman to be in. Amiga Computing talked to Debbie Durrant, their PR/Marketing Executive to see how she views working in a "man's" world.

Having worked in the industry for five years, she is somewhat of an authority on working in this field.

Starting her career at Microprose as Sales Administration Supervisor she took internal promotion into the Marketing



Images such as these are further evidence of the way in which games are targeted at the male

higher management.

Debbie sums up how she sees her role in the industry: "If I were a man doing this job there is no doubt I would be treated differently, but not always in a negative way. On the whole I feel it is an advantage to be female in this industry."



Shamelessly sexist images used to attract readers to this French computer magazine may portray false impressions of the industry

Rue Stanley, Meridian Software Distribution Ltd.

Rue Stanley is the Sales and Marketing Director for Meridian Software and is responsible for managing the sales team. Her job also involves sourcing and marketing new products.

She has worked in the industry since 1988. Starting her career selling advertising on a national publication, she moved to Precision Software as a Telesales person.

Rue doesn't see that there is a bias towards employing men, rather that the problem lies with the fact that there aren't enough women applying for the jobs:

"I recently advertised for a sales person to join our organisation and was disappointed, because out of ten applications only one was a woman."

She believes that women aren't deterred from entering this field because it is male-dominated but because there are not enough women entering technology-related professions, which means that they are male dominated by default.

As to the current state of play Rue says: "I believe that attitudes to women in the computer industry are changing now. I think they will have to as more women enter the industry."

The winds of change

On undertaking this feature it became apparent that, although the industry is attracting women, the roles they are assuming are mainly in a PR capacity rather than the more technology-based jobs. For example, it became nigh on impossible to find a female programmer to interview.

But times are definitely changing towards employing more women in the industry. A recent staff recruitment campaign in Northampton by PC World attracted more women to apply for the jobs.

Out of 250 applications, over 50 were from women. Other campaigns by PC World in other areas though had proved not so successful.

Colin Glass, Managing Director for PC World commented on the campaign:

"We are delighted with the Northampton campaign. We wanted to attract more women into the PC World business and have achieved this. However, there is still a tendency for women, particularly older women, to feel uncomfortable working with the technology we sell and use."

With more women entering the computer industry in whatever capacity, and with those already in the business stating that we do have to prove ourselves a little more than men at times, we do get a fair deal. It is an encouraging sign to other women thinking of entering this field.



*Source used: "Success and Satisfaction" by Allison Baines (1988), Paladin Books

rather it was that way - it's all very well using those 'female charms' but whether they work to an advantage I don't know!

"I wouldn't say that it's a definite advantage being a female. It doesn't make the job any easier and at the end of the day people will expect the same levels of competence from you, regardless of gender. People certainly don't make allowances for you just because you're female - why should they?"

"I think there are a lot of things that we can use to our advantage, but it is important to try and remain 'clued up' or you may risk the chance of being called an 'airhead' - it's up to us really to ensure that we portray ourselves as professionally as possible."

Susie finishes with these words of advice: "The industry certainly isn't for the shy and retiring. You have to be confident from the word go and be able to build up a good rapport with practically everyone you meet - that can be hard work at times."

"If you really have your sights set on working in this industry then you won't be put off by anything."

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Right riveting read



I write to congratulate you on your new look magazine. I enjoy using computers, mainly the Amiga, for various multimedia applications and also for programming purposes, although programming is very difficult, especially assembler. Having read this month's issue (May), I have found it to be riveting reading, and am very pleased with the tutorial content, especially the assembler for beginners section, which is very educational and easy to understand.

I was hoping that you could print a list of companies that stock Devpac 3 with the manuals, as there aren't any in my area. All the Amiga shops closed down for some reason. Why? At present I don't have a computer but I'm saving my pennies for an A600 with 30 to 40Mb hard drive, as this would suit my needs for now. I have thought of the A1200 but have not been too pleased with it.

After using a friend's A1200 it seems to be incompatible with 70 per cent of my software, whereas the A600 works with about 90 per cent.

Even though I don't yet own a computer, it doesn't stop me from buying your magazine, and I would like to see a "behind the scenes" page which explains how the movie industry creates special effects and what hardware/software they use.

Steve Whitnall, Chester

I'm glad you like the new design and the new assembler tutorial. We introduced the changes, including a new programming tutorial, because readers asked for it, so I hope you'll continue to follow it.

As for Devpac 3, the best course would be to phone HiSoft on 0525 718181 for more details of local dealers or to buy the package through mail order. Devpac is a superb programming tool and will serve you well.

We have printed a great deal of information on the exploits of Hollywood special FX people, and you might want to take a look at the March issue in which we interview Ron Thornton, the man behind Babylon 5's 3D space scenes.

This issue is available from back order for about £3.25, so just look for our reader offers pages.

Not happy

The Comment page in the May issue poses the question "noticed anything different about Amiga Computing this month?" The answer is yes, I have noticed several things different.

The first thing was that horrible and difficult to read font that has been used for headlines. You tell us that Amiga Computing has always appealed to the older reader and that

last year there was a huge rise in the number of mature readers.

I feel sure that like myself, many of these readers would prefer a nice comfortable to read Helvetica for headings with Times Roman for the body text, and this in black letters on a white page.

The second thing is that I noticed the insidious encroachment of non-computer adverts into your pages. If we wanted deformed bodies (see page 75), we would be down at the gym every night rather than

As a newcomer to the world of comms, I cannot believe the articles presently appearing in Amiga Computing concerning so-called computer pornography.

Have the "experts" on your editorial team ever actually thought this thing through? Writing sensationalistic articles like this just encourages those reactionary forces in this country opposed to any sort of personal freedom.

"Let's invent new ways to control what the masses are allowed to read and see. Let us have all models registered with a government department and charge an annual licence fee."

"Let's set up an enforcement branch to monitor suspect phone lines for any 'undesirable' material. Let's have a minimum jail term if people don't apply."

Is this really the way forward? Would you want to live in a country with such laws and how long would it be before the censors turned their eyes towards you, the computer press? If there's one thing this

country is not short of it's moralising and censorship. This country already has the strongest laws in Europe on any matters violent and sexual, and therefore should, in theory, be free from all sex and violent crimes, but we know it's not.

Meanwhile, those more intelligent and mature countries such as Scandinavia, Holland, and France, who do not have our Anglo-Saxon hang-ups and whose people support an open society, have lower rates of rape, violent attacks, and teenage pregnancies, the very reasons we are given for the present campaign.

Stop this support for a narrow-minded and bigoted campaign. Start instead to work for the removal of all censorship in this country. Campaign for freedom, now that's worthwhile.

G.W Smith, Lindfield

The recent article on pornography was primarily concerned with the new commercial BBS trade



sitting at a keyboard.

One more thing, I see that Amiga Computing is now being printed on recycled paper. Mine appears to have been printed on paper that was once used for an electronic circuit diagram.

We are also told that we are responsible for these changes. I hope this doesn't mean that we will get the blame when it all goes wrong like we did in the April issue regarding CoverDisks. I was among the many who said we didn't want them when they first appeared.

P J Richards, Folkestone

I'm sorry that you don't like the new headline typeface, but we chose it for its design appeal first and foremost. The body text has been changed to Helvetica for maximum readability, so that at least should meet with your approval.

You also point out the design features we have added, such as the use of electronic symbols. These are part of an overall design "feel", but as you noticed they were a little obtrusive in the May issue. Look forward to a few minor tweaks as the new style settles in.

Finally, you won't be blamed "when it

Bigoted campaign

in hard core porn across all borders without any kind of constraint, and was an attempt to show that a problem exists for which there is a great big loophole, but no obvious cure.

At no time did we advocate censorship. Indeed, the laws already exist to deal with material which is considered obscene and there is no need for more legislation, just a better way of policing the current Acts of Parliament.

In an open society of the type you clearly favour, we should be able to print such an article without being subjected to kneejerk responses like "bigoted" and "narrow-minded".

Open society and personal freedom (both much maligned and misused phrases) require open debate, and if we can't open a serious discussion on pressing moral issues without being attacked, then it is more likely that our attackers, not we, are in danger of becoming bigoted and narrow-minded.

all goes wrong" to use your overly-pessimistic words, because the feedback we have had so far has been very positive.

Stop crunching

With regard to your Comment article on CoverDisks, I personally would like to see all the magazines stop compressing programs, which gives me more hassle than anything else.

Surely it would make more sense to put programs on a disk so that they can be inserted and run straight away?

I don't have time to fiddle about or look in manuals trying to figure out why the disks are not doing what they are supposed to do.

I would rather have programs spread over four disks or four issues, if I knew that each one was actually going to work without problems as soon as the disk is inserted.

Also, tracking down and putting obscure libraries on CoverDisks would no doubt be helpful and save us looking through piles of disks for some elusive library. Some PD won't work without the right libraries and you don't find out about it until you try the program.

Demos are useful for evaluating whether a game is to the liking of an individual. A friend of mine decided he would buy an A1200 after seeing the Amiga's game potential using a CoverDisk demo. I have bought some games that I wouldn't otherwise have bought had it not been for demos.

On piracy, why can't the industry adopt, as standard, the method used by The Settlers, which is easy to use and means the program simply can't be started unless there is access to the complete manual.

Oh, and why is your magazine the only one for the Amiga without a letters page?

D A Patterson, Scunthorpe

Er ... you are looking at the letters page. It's called Ezra Surf's Postbag (ESP), and



Got something to say through the pages of AC? Ezra Surf is our mailman, dedicated to reading your letters and selecting the most interesting for publication. Drop him a line at:

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Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't be offended if you end up getting the chop.

Not so old



I have just received the May issue of Amiga Computing through the post, and had a flick through it. I couldn't believe the difference!

I was just thinking that you should put some type of game on the disk (everybody like a game now and then) and what do I get but a full disk demo. Also, I love the new look inside. It's much more attractive to read.

I am a subscriber and was thinking about switching to another mag, but after I received Amiga Computing today, I will never look at another Amiga mag again (except maybe in W H Smith on a Saturday when Bournemouth aren't at home). Keep it up!

Now my second topic, a bit of a complaint. I am a broad minded 15 year-old subscriber, and I'm not one of the games, games, games teenagers. Some of my friends are, but the majority of them use their computer for various purposes.

We don't all own consoles, though I must admit to having a Gameboy. Yes, maybe 90 per cent or more of your readers are over 18, but there is at least one

you actually wrote to the letters page to ask why we didn't have one. Take two bottles of brown ale and drink them in bed.

Your comments about archiving and compressing are appreciated, and we have been looking at ways to make the system more bearable for floppy disk users.

We are reluctant to abandon archiving because it gives us a great deal more flexibility with disk compilation, but in the interests of user-friendliness we have started to use the Commodore installer program.

This makes de-archiving and installing programs on hard drive or another floppy much easier, and we hope you find it useful.

If you have a Workbench 1.3 machine, we have retained the old script approach, but this has also been improved, so you should have no problems de-archiving unless your disk was corrupted during transit.

We always ensure that all necessary libraries are on the disk as far as possible, and if we leave any out (such as, say, commodities library) it is because they are standard Workbench files which we can't fit on the disk and which you will already have.

If there's a particular library you need but can't find, drop us a line and we'll see if there's enough demand to put it on the disk.

I'm glad you like the game demos, and we are planning on more of these. We'll be using games which are more likely to appeal to our readers, such as adventure, RPG, and sims, so you should find something to interest you.

The ridiculous on-disk protection systems used by most software houses should gradually disappear as more and more games are designed for installation on hard disk, so Settlers won't be in the minority for too much longer.

15-year-old out here who uses his A1200, 80Mb hard drive, colour printer, and Philips monitor for other uses besides games.

Just thought I'd set the record straight.

Ben Johnson, Christchurch

Before answering, I should point out to everyone that the bias in this month's letters towards the new design and the porn issue is an accurate reflection of the bias in our bulging postbag, and we didn't make any of these letters up so we could put ourselves on the back in public!

Anyway, glad you like the mag, and that you're going to continue buying it. Sorry if you took umbrage at the Comment article in the May issue, because we certainly haven't forgotten our younger readers.

The new design will hopefully appeal to all ages, and we'll continue to try to bring you a good mixture of games, programming, and productivity.

Porn supporter

The discussion about pornography and violent videos in your country shows again that mentalities vary throughout Europe. For me, as a German, these discussions are annoying and what my English fiancé calls "typically English".

There's no question that children should be protected from pornography and video nasties, but why condemn all forms of pornography and violence? Why ban pornographic or violent films that are made for adults so that adults themselves cannot watch them?

This isn't right! I think even the strictest laws to prevent dealers or other sources from supplying this material to children can't work, when parents don't control what children watch at home. In the end, it is the parents who have the main responsibility.

I really don't understand why people get so excited about what I call soft porn. Being naked is something natural, nothing to be ashamed of or to be disgusted about.

Nobody is born with clothes on, and I would like to tell people who put forward a religious argument, that God made us in his own image, so being naked should be considered as something beautiful.

Making love results in new generations and helps to form a bond between men and women. It is an essential part of a healthy family life, so I think that soft porn is nothing bad.

On the contrary, a film in which both the man and the woman are having fun can give a couple like us new ideas on how to make more out of making love.

For adults, I would also accept videos showing homosexual love as this is nothing to be ashamed of, though not the norm and not accepted by everyone in society. That's as much as I can accept, though.

I don't like porn films in which the man only uses the woman as an object, without giving a damn what she thinks, and am disgusted by violent porn or, even worse, those with animals and children.

Baerbel Schmidt, Ashford

Your views reflect what is probably the mainstream of balanced adult opinion in Britain, and this was shown when the Alton amendment to the recent Criminal Justice Bill was dropped in favour of stiffer sentences under the existing laws.

We have to be careful that what is an important debate is not hijacked, either by those with ideological opposition to any form of censorship, or those in the moral minority who would have us all wearing full length Victorian swimming costumes at the beach given half a chance. Therefore, it is important that moderate adults such as yourself should make their views known.

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ReLoKick out



I have an A500+ with a 1Mb expansion in the trapdoor. When trying to use ReLoKick to degrade to Workbench 1.3 the software reports that the operation was successful, but keeps re-booting the ReLoKick disk in an endless loop and doesn't allow me to use Workbench 1.3 disks.

Without the expansion board the computer reports:

failed assign code 20.

When I eject the disk and re-boot, the Amiga degrades to Workbench 1.3. Do I have a problem with the hardware or is it possible to turn off the expansion board from the keyboard without removing it from the trapdoor?

D. Casley, Cornwall



There is very simple solution to this problem which should solve your worries without forcing you to remove the trapdoor expansion.

When ReLoKick reports that the operation was successful it prints a message saying that it is 'Kicking up' at which point the Amiga is reset to Workbench 1.3.

At the point when the machine is reset you should eject the ReLoKick disk. You will then be greeted by the disfigured hand holding the disk which all Workbench 1.3 owners are constantly tortured by.

Flashing crashes

I bought my new A1200 last Christmas and everything seemed fine. However, sometimes when a piece of software crashes, instead of re-booting or simply locking up, the entire screen blanks to a red colour.

Then, after a few seconds the screen blanks to black and occasionally grey lines fill the screen, travelling diagonally downwards. There is not even an error message with a flashing red box.

I am worried because in the A1200 User's Guide by Commodore it says that this red screen is caused by a ROM error. Does this mean my machine is faulty or is there a simple explanation?

P Hallam, Lancashire

Actually, we had never come across the diagonally travelling lines until fairly recently. After turning the A1200 off for 30 seconds and then switching it back on again after a failure the crashes continued and the grey lines appeared. So don't worry, you're not the only one. The

good news is that no matter how extreme the crash may seem it won't damage your computer in any way. It would have been more helpful if you could have told us which application you were running when your A1200 did the dirty as you may have been using a piece of software not 100% compatible with your machine.

If your A1200 keeps crashing write in again, this time detailing which applications you are running when the crash occurs.

A golfer's library

I read the article 'A bug in the system' with interest. It opened my eyes considerably and put me on guard against certain software publishers.

My main reason for writing concerns Ryder Cup. I bought this game because the packaging stated it was hard drive installable. Well, it isn't, not on my hard drive anyway. The installation procedure

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works fine but when I run the game all I get is a blank screen.

I wrote to Ocean about this and they kindly sent me a patch disk. When I tried it the game would still not work, producing a message stating that the lowlevel.library could not be found - please upgrade to version 40.03 kickstart.

Any ideas on how to get this product working?

R. Lymer, Stoke-On-Trent

This bug has been causing considerable problems for Ryder Cup owners. We phoned Ocean software who supplied a different method in order to get the game running without problems.

Their advice was to disable DF0: and any other external drives and turn the CPU Caches off before booting. You can do this by holding down both mouse buttons until the boot options screen appears when you re-boot your machine.

Floppy only users are advised to do the same except leaving DF0: enabled and booting with no Start-up Sequence. When the AmigaDOS window appears type in:

execute ryder

Supposedly this works, although it is



Thank you for the excellent KindWords 3 complete software package on your April issue. I have only one enquiry. Since most of the letters I write are in Dutch, could you please tell me if there exists such a dictionary for KindWords or if there is another package that will fulfil my needs.

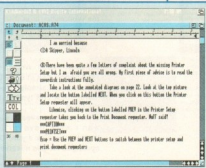
I am also interested in a German and French dictionary since I run a hotel and use my Amiga for answering the many letters I receive.

K. Dorné, Belgium



KindWords 3 is distributed by Imediat and they do support French and German dictionaries. Unfortunately, it seems that you may have to buy the entire package in order to use the dictionaries.

You can call Imediat on (+44) 480 496688 if you require further information.



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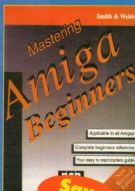
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94

Flexible friend

Chris Hames's Dir Work 2 (DW2) has been around for a few years in various shareware guises, much like SID 2, and now makes its commercial debut in a market which one might think saturated.

There can only be so many good directory management programs before the limited scope for such a program is exhausted, so DW2 has to offer something new.

Flagged as the world's first totally configurable directory utility, DW2 relies on its hidden powers (sometimes a little too hidden) to patch over the rents in its armour where old shareware roots start to prod through.

Though not a bad looking program, it is not as glitzy or smooth looking as Directory Opus, and on first impressions it is easy to condemn DW2 on its dowdy appearance.

Given half an hour with the configuration editor, however, and a run through the comprehensive 166-page manual, and the picture starts to look a little different.

The program quickly lives up to its configurability claims and can be made to do just about anything the user wants, short of making the tea or fetching the paper.

On first booting, the program's appalling default configuration, with its funeral looks and motley collection of pre-defined user gadgets, just begs to be customised, so we'll start at the config editor. This is where DW2's engine room is to be found, and from where a wide variety of options can be set up.

CONTROL

Thanks to the ability to open DW2 on its own screen or as a window on Workbench, coupled with the complete control users are given over the size, shape, and position of gadgets, it is possible to give the finished configuration any look you want. A few samples of such skeletons are provided, the clown-shaped layout being the most bizarre.

Over 70 pre-defined actions are available for the user buttons and as each can be assigned a string of commands to be carried in sequence, it should be possible to reduce complex actions to single mouse clicks.

As an example, the programmers have provided an configuration which dedicates DW2 to control GVP's G-Lock.

Using DW2's config editor to create a Workbench window packed with G-Lock control buttons linked to the ARexx scripts supplied with the genlock, DW2 is transformed from a directory utility to a dedicated front end. The same process could be used for any ARexx-heavy software such as ADPro or even ProPage. On a cautionary note, the user

is dependent on pre-written ARexx scripts unless he or she is a bit of a programmer, and there are plenty of actions which can't be carried out by the 70-odd built in commands.

The action strings are also a bit confusing for non-technical users and are not well explained by the manual, so a certain amount of head scratching is required to make the most of this package.

However, there's still much to be done with the program, and as several copies can be running at once using different configurations, DW2 could be used for most purposes.

You could run one copy using a default configuration for directory manipulation, one for viewing pictures and playing samples, one for launching programs, and so on, all of them either in their own screens or as small windows on Workbench.

Keyboard shortcuts are fully catered for, hotkeys can be user-defined, and another feature will add AppIcons to the Workbench for single automatic file actions, so users needn't restrict themselves to buttons and windows.

When running, DW2 uses a built in viewer for text and graphics, but unless you have a Workbench 3+ machine you can only view IFFs, though PowerPacked files will also be displayed if the powerpacker.library is available. On WB3 machines, any image for which the user has a datatype will be displayed by double-clicking on the file name.

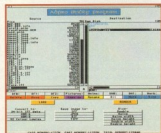
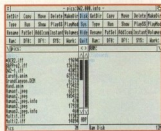
In common with other directory managers, automatic actions can be set for up to 27

different types of file, such as archives, graphics, and music modules.

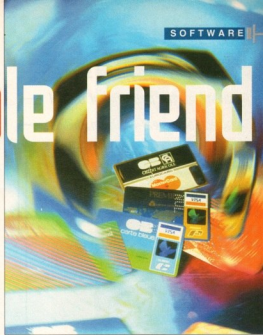
By editing the instant action list using the config editor, the user can set which actions are to be carried out when one of these files is clicked on. All archive types are catered for, as are anims, IFFs, sound samples, and so on.

Despite its appearance, Dir Work 2 is a sound program which suffers only from having a sometimes tricky configuration method. It isn't as slick as Directory Opus, but in some ways it wins on flexibility and the uses to which it can be put, and should appeal particularly to enthusiasts with messy hard drive systems.

The default configuration is workman-like but drab in the extreme and begging for change



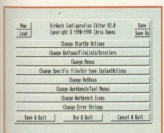
Half an hour of tinkering and you can make the program look the part for almost any job



Dir Work 2 claims to bend over backwards

for the user, but can it out Director

Opus? Steve Kennedy investigates



User configuration is the program's biggest attraction and it is better than most

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AGA



Hard drive

The bottom line

Ease of use 7
Implementation 8
Value for money 7
Overall 7

Product: Dir Work 2
Supplier: Meridian distribution
Phone: 081-543 3500
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*Six months have passed since AC
examined the potential of virtual
reality. Half a year on Adam Phillips
re-enters the future...*

Exploring

Technology moves fast. Over the last few months, new hardware and software have appeared from all corners of the globe. Games, utilities and more bizarre uses for the future of one possible reality have surfaced for the public's inspection.

With all this hustle and bustle of activity, here is a rundown on a selection of companies around the world and their latest developments in virtual reality.

Virtuality

Profile: British-based producers of VR games for the arcade industry

Virtuality have recently released their next generation of hardware and software in the stylish shape of Series 2000. Featuring texture mapped, three-dimensional colour graphics providing video quality imagery and 32 channel digital sound all in real time, the company has taken its next step towards the ultimate VR experience.

The three games heading this leap are Zone Hunter, Virtuality Boxing and X-Treme Strike. As a 21st century urban warrior, Zone Hunter places you in a search and destroy mission played against the clock. The player must move through a futuristic city where the alien infested streets and sewers need clearing with a deadly arsenal of weapons.

The task is to reach the genetic labs where hideous mutations are being bred before the first wave of the empire's elite cyborg warriors make an appearance. Featuring power ups

and graphics that put Virtuality's first generation of titles to shame, Zone Hunter is looking like an extremely attractive two player shoot 'em up.

Virtuality Boxing places the player in the ring against five computer-controlled boxers or, if desired, against a friend. The virtual boxer must climb up through the ranks to win the ultimate accolade - winning the world championships.

One of the game's most interesting features is the use of the joystick - throw a punch and it registers on screen as your opponent is hit in the face.

All damage inflicted is shown in full texture-mapped graphics with eyes becoming blackened, gunshields flying out and lips swelling as you force your opponent to kiss the canvas.

X-Treme Strike immerses the user in a battle against the forces of the Empire Worlds, where a vital core reactor must be destroyed on the planet of Zenon. The game takes you from the asteroid-ridden depths of space to skimming across the surfaces of alien worlds, skimming and blasting all the way.

While none of these scenarios reek of originality and wouldn't leap to mind as possible Nobel Peace Prize candidates, the leap in quality from existing arcade based VR machines is a significant one.

The hardware, in the shape of a headset and joystick, has undergone a dramatic facelift. The HMD is lighter and less cumbersome while the space joystick offers a more reactive interface for the player.

Silicon Graphics

Profile: Seen by many in the industry as the company at the front of graphics technology, the American company has used its talents in film, television, architecture and many other industries.

Although Silicon Graphics is not a supplier of fully-featured, immersive virtual reality systems, the company provides powerful computer systems such as the RealityEngine and the Onyx graphics machine that form the core of VR systems developed by third parties.

The partnership with Division has produced the dVS software environment which provides software tools for the development of VR applications.

The system runs five dedicated servers to manage the functions essential to VR - visualisation, collision detection, 3D tracking audio and user control.

The uses for the systems are wide and varied, from the entertainment market to avionics. At the University of California, sophisticated computer graphics are allowing the communities worst affected



After the riots and earthquakes, the citizens of Los Angeles are being helped by virtual reality to rebuild the city...

by the 1992 Los Angeles riots and recent earthquakes to play a part in the planning and rebuilding of the areas in which they live.

A 3D model of LA, which allows people to visualise proposed changes to their own neighbourhood,

is being used by the city council's urban planning department.

The VR cityscape allows the viewer "to fly" through the city streets in real time using SG technology. Buildings have been reproduced to exact levels of detail and the photo-realistic modelling features such accuracy as including graffiti on the walls.

Bill Jepson, director of computing at the UCLA Graduate School of Architecture and Urban Planning, explains the reasoning behind the project:

"The idea is to involve people more fully in the urban planning process. The 3D model we have built using Silicon Graphics technology allows the city council to introduce concepts graphically, in an easy-to-understand format, instead of using complicated jargon normally associated with town planning."

"The model has helped create a better understanding between the technicians, the engineers, the planners and the people who live in the riot-torn areas."

At NASA's Ames Research centre, researchers are using a VR system that draws on data gathered from satellite. Using two stereoscopic screens and

Division

Profile: British-based company that specialises in providing hardware and software for professional applications of virtual reality

Division has been busy licensing its equipment to the likes of Silicon Graphics and Virtual Reality Games, a recently formed business that intends to move into the arcade business alongside the likes of Virtuality.

Last month, Division announced what they say is the world's fastest commercially-available image generation system for VR use. Called the Pixel Planes 6, the system is capable of rendering over five million Gouraud-shaded triangles and over four million Phong-shaded triangles per second, with spectacular lighting and photo-texturing.

These specs don't come cheap, with a price tag of \$200,000 for the basic unit. Matsushita Electric Works, a Japanese firm, has one already installed at their headquarters in the land of the rising sun.

The system will be used in their Virtual Reality R&D department on a project to improve the home environment, by simulating many of the home's basic characteristics including physical structure, aesthetics, acoustics and ventilation.

reality

Straylight Corp

Profile: American-based VR company producing for the arcade industry

Stateside, another company is attracting attention with their forays into the VR entertainment industry. Straylight have developed a system called CyberTron whose most impressive feature is the player's hardware.

The head gear and joystick are still present but the user must also strap themselves into a large, rotating gyroscope (like those seen in Lawnmower Man) and pivot and tilt the mechanism by using their body weight and inertia. This adds an all-important element to the VR process – that of real motion.

At present, there are three titles available for the CyberTron system. In Wing-Nuts, you can team up with a mate and take each other on in a head-to-head shoot'em up over the surface of a planet.

Then there's Cozmik Debris, where the player is taken on a three minute trip aboard a Spanish galleon through an underground cavern with dancing dolphins.



Climb inside CyberTron's gyroscope and...



Events take a sinister turn as dead faces float up to meet you and climaxes in a finale where you are thrust down a psychedelic tunnel reminiscent of the scenes from "2001".

Finally, there's Bonk, a three dimensional asteroids where the player must destroy large lumps of rock before they collide into the space craft.



... take on a friend in Wing-Nuts

headphones, users are able to look round the surface of distant planets, including far flung planets such as Mars.

If you've been watching the BBC news over the last year, it's hard not to notice the new look with its virtual reality TV studio that relies on the heavy use of 3D graphics.

TECHNOLOGY

Using Silicon Graphics technology, everything in the studio other than the two newscasters is computer generated, including the desk.

This allows the broadcasting corporation to save money due to less space and crew being used and allows time-saving versatility with the computer operated environment.

Soap opera producers are also looking towards virtual sets to cut costs. Soaps are usually in production week in, week out, eating a substantial amount out of the budget due to the prices of studio hire over such a long period of time.

The presence of the newscasters and actors themselves could be in jeopardy within the next few

years as US-based SimGraphics, another partner in the SG chain, have produced hardware and software that can create virtual actors – VActors.

These computer-generated characters are animated live by the movements and voices of actual actors. The software provides several sensory input devices and gesture recognition facilities to create a unique look and feel that can be used in interactive live entertainment for television presentation or as a means of producing computer animation sequences.

Indeed, TeleVirtual, the holders of the VActors licence in the UK, have already shown the system to the BBC who were highly impressed with it.

Subsequently, if you're a fan or a "forced by the children" parental viewer of either Alive and Kicking or Children's BBC, you can't fail to have noticed Ratz, the computer-generated cat that pops up regularly throughout each show.

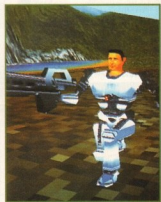
Created by TeleVirtual, it exemplifies the system perfectly with the actor wearing the sensory headset and controlling the feline's movements in real time, allowing a versatile and highly useful tool for the television industry.



Love or hate the feline, the technology behind it is impressive indeed...



TeleVirtual's TV creation, Ratz, is operated in real time by an actor wearing sensors on his face



Zone Hunter is part of the latest Series 2000 from Virtuality...



An example of the work that is under way at Matsushita using Division's software, dVS

Cartoons have been the staple diet of children of all ages since Mickey took his first steps on the silver screen. Now Empire aim to bring the magic of movies to the desktop with the release of the Hanna Barbera Animation Workshop.

As you've probably guessed, exploiting the Hanna Barbera name and its associated characters is high on the agenda. As a result I fully expected the software to be something of a disappointment – as heavily licensed software inexorably tends to concentrate on marketing rather than content.

Fortunately in this case, I was reasonably disappointed. In fact the program does a pretty good job of living up to its illustrious title. It's true there's still room for improvement, but on the whole it's fairly impressive.

However, for anyone in the market for pro-quality line-art, I'm afraid there is for something of a disappointment. The main thrust of the package is definitely directed at a younger audience – and in this area it offers a sensible compromise of simplicity and power.

Thankfully, Empire have had the good sense to include an installer which copies both the program and a reasonable selection of demos, backdrops and clips on to your drive – all of which play a key role in the excellent tutorials detailed within the equally impressive manual.

MANUAL

However, if you don't enjoy kiddie speak, big print and copious graphics, the manual can be a little tedious – assuming you're not a kiddie of course.

On boot-up, the first order of business is to negotiate the copy protect. After this brief interruption you're immediately taken to the main menu with its array of colourful icons and transport controls.

On the top row you can select from various creation screens, the first of which is the pencil sketch module, followed by the background design screen and lastly the digitiser module – more details on each of the above later.

Beneath this row await the various project management options which enable you to trash the existing anim, load another, or exit the program entirely. Below these come the program's essential transport/playback and speed controls.

Not surprisingly, the drag bar has a predictable affect, depending on its proximity to either the tortoise or rabbit. Assuming you've either loaded or created an anim, the vertical

Yabba dabba



Animation the easy way. Paul Austin puts the Hanna Barbera Animation Workshop to the test

Background



As you may already be aware HBAW is by no means the Amiga's first adventure into animation/line-arting. Probably the most obvious alternative is the Disney Animation Studio. However, I must admit I haven't seen this on sale for quite some time.

If you've the will to scan the small ads there's a fair chance you may discover the odd copy still in circulation. Although more complex than HBAW, it did have the ability to include sound effects into its animations – via a dope sheet.

Another obvious alternative is to stick with good old DPaint, which in version IV provides its own version of onion skinning in the form of the LightTable. Add this to DPaint's repertoire of advanced drawing tools, and of course the excellent move requester, and you have a very impressive alternative to HBAW.

However, to be fair to the younger Amiga user, DPaint can be a fairly daunting introduction to animation – ideal for the older audience – but I can't see too many young children happy at the controls of the move requester.

slider on the left lists all the frames in the current anim.

Unfortunately cut and paste controls are not available, so it's impossible to build internal loops or combine existing sequences within your latest production. In fact, the only option is to delete individual frames – not exactly an ideal situation.

When embarking on a project, the first task is to design a background for the action. On arrival in the background module, you're presented with a 16-res screen with a selection of 8 colours.

As you can see from the screen shot, the usual selection of drawing tools are provided, including brush cutting, hollow and filled shapes, colour fills, plus line and free-hand pens in a variety of sizes.

Although most of the essentials are available, there are some notable exceptions which would definitely make life much easier. Thankfully, it's possible to load brushes/clips or even complete backgrounds from other packages – DPaint being an obvious example.

However, the manual makes no mention of using other software in combination with HBAW, so you're left to discover any association under your own steam, the only limita-

tion being that you must create your graphics in the same resolution and using the same number of colours.

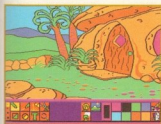
Unfortunately, the reverse isn't true. As a result, it's impossible to export anything from HBAW. Ridiculous as it may seem this also applies to complete animations. It's bad enough not being able to export backgrounds, clips and individual stills, but not having the option to save out a standard anim file is quite simply unacceptable.

Thanks to this bizarre state of affairs, yours will be the only machine capable of playing your animations. And of course, in order to do



Just select an image from the pencil sketch clip and drop it in your scene, it's that simple

doodle...



Even with just eight colours, backdrops can still be pretty impressive

so you'll need to load-up the parent program beforehand.

Another minor disappointment in the background section is the inability to change the background during an anim. Admittedly, it is possible to exchange the background for the entire anim but that's about it.

Again, thanks to the programs I/O limitations, it's also impossible to cheat, by combining various anim scenes into a bigger production – thereby swapping the backgrounds surreptitiously.

Assuming you've created an appropriate backdrop, you can move on to actual character design in the pencil section by either clicking on the appropriate button in background screen or alternatively, by returning to the main control screen.

Once safely entrenched in the sketching screen, you can either draw your characters freehand or load clips from disk – which in the case of the examples, take the form of various familiar characters in a variety of poses.

To achieve the illusion of obvious movement, it's fairly essential to add frames and to enable this you're provided with a selection of arrow gadgets which let you navigate back and forth through the animation in addition to adding extra frames.

As you add more frames you encounter an essential aspect of any self-respecting animation package, namely onion skinning. Thanks to this feature, previous frames are ghosted using various levels of transparency.

Due to onion skinning you can keep a close eye on the relation between each frame, thereby ensuring character continuity during playback.

Unfortunately, there's room for improvement again as it's impossible to turn the feature off. As a result, the display can soon become quite confusing – especially when there's a lot of character overlap between frames.

On the plus side, pencil sketch does offer the ability to add the backdrop image in the background, thereby enabling accurate character placement in relation to doors, footpaths and so on.

When you've perfected the actual movement, it's time to move on to colouring your character. After a quick click on the control panel, the menu updates with a familiar selection of tools colours and painting options – in fact they're identical to those in the background section.

GRAPHICS

Like the background section, you're provided with a palette option to adjust the eight colours devoted to foreground graphics. As with the sketching screen, you're provided with the same arrow gadgets to manoeuvre between frames. However, a little thought would have gone a long way.

Unfortunately the programmers haven't bothered implementing even the most elementary hotkey commands. As a result you're forced to click on the arrow gadgets every time you want to move backward or forward through the animation.

This is particularly annoying when colouring in a character. For example, if you have a particular colour which is used repeatedly

Beginners' jargon buster

Line testing: A process which allows the animator to see the animation in wireframe prior to colourisation.

Dope Sheet: A checklist which allows the designer to see the relation between the frame and sound effects within the anim.

Onion Skin: Graduated transparency between a series of frames which allows the artist to visualise a character's relative position between individual frames.

why not have a hotkey to advance frame-by-frame. Then just a single click could fill an entire area.

However, as it stands you're forced to drag the mouse back to the control panel to advance every single frame – believe me this soon gets very tedious.

The final creation tool is to import real-world drawings direct from paper using the digitise option on the main screen. With the assistance of Romb's digitiser it's possible to import pencil sketches from paper, thereby avoiding the notoriously tricky and unfeeling efforts of the mouse.

Like the rest of the package, digitising is very straightforward and does a lot to make up for some of the shortcomings elsewhere in the software.



Verdict

OK, let's get the bad news out of the way. Firstly, there's no sound support, editing animations is also pretty limited, the available drawing tools are fairly restricted and combining animations is impossible. But perhaps most damning of all is the inability to save anims or stills as either IFF's or standard anim files.

All fairly negative stuff, but there is another side to the coin. Although far from ideal for an experienced animator, HBAW does offer a friendly and gentle introduction for a child with an interest in animation.

For anyone who isn't up to mastering the intricacies of Dpaint it's fine, but to be honest it's a fairly short-term investment. The assorted Hanna Barbera characters certainly help to glamorise the art of animation, while the manual and support video do a good job of smoothing the learning curve.



The main control screen. Just select a module and start painting



Onion skin in action as the Jetsons' strut their stuff

SYSTEM ESSENTIALS

RED = Essential BLACK = Recommended

1 Mb

RAM



Hard drive

Product: Hanna Barbera
Animation Workshop
Supplier: Empire Software
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Silicon Cinema?



Q What is an interactive movie?

A At the moment, it's whatever anybody who has made one thinks it is.

Q As the producer of Microcosm, what do you think it is?

A (Laugh and long silence)... difficult question definitely... it's a combination of a game using film techniques, however they may be produced, either on video or through computer generated stuff... it's just a move towards film in games.

Q From the packaging on the box, Microcosm is described as a mix between a movie and a game. Would you agree with this?

A I would call it an interactive movie, yes, if anything is...

With interactive movies becoming the latest buzz word in any computer gamer's vocabulary, Adam Phillips sets out to find out what they are

Q In what way is Microcosm an interactive movie?

A The backdrop of the game that it's set against is basically a film. It uses continuous animation all the way through. There are also several filmatic sequences used throughout the game to add to the movie-like feel...

Q Why do you think that the attempts at interactive movies have fallen short so far?

A It's just early days, people are only just starting to get to grips with the technology behind it. There are definite difficulties creating the quantity of graphics that you need for a game and making it interactive. It's not that easy...

Q What direction do you feel people need to go towards to achieve a cinematic game – either through shooting film and putting it on CD or going along the Infogrames route as seen in Alone In The Dark, shooting from different camera angles, but the player remaining in control all the time?

A Both, I think. Yes, I do like the Alone In The Dark approach, but you do have to generate an awful lot of graphics. Our approach is that rather than using film, we computer model it all...

Q Is it going to be possible to simulate a movie in that way, where films, by their definition, are very linear anyway?

On the old days, the computer industry used to have to shout with cheque books open to be heard by the powerful egos in Tinseltown. The attitude of the movie moguls appeared to be of disinterest in the budding games scene.

With Sega and Nintendo showing a rather substantial profit in the boom years of '92-'93 and the introduction of powerful CD-ROM consoles that can store a wealth of famous faces and scenes and increase the hype for movies even more, Hollywood, in a role reversal, started to knock on the games manufacturers' doors.

Indeed, the home of huge salaries and even huger scandals (is Melanie divorcing Don or not? Does Roseanne Arnold really have split personalities? Who actually cares?) is over the moon with this latest medium.

Already Sylvester Stallone and Wesley Snipes have taken part in the shooting of extra footage for the 3DO game based on the film Demolition Man. Donald Sutherland is appearing in Conspiracy and various other actors and actresses are taking their turn in the rapidly escalating market for interactive movies.

How successful these are remains to be seen, but history has taught us that interactivity usually means the exact opposite. Right from the very beginning with the release of Dragon's Lair, the first "interactive" cartoon produced nearly a decade ago, the same problems have continued to hamper the genre's progress – watch some film/video/cartoon/computer animation and waggle the joystick at certain points to proceed with the remaining footage.

REPETITIVE

They're great the first time you play and maybe, if you're lucky and have never seen a moving image before, the second time as well. Otherwise, the repetitive experience is a waste of money.

Things have moved on but only slightly – either by offering more options to choose from or by having the odd animation sequence thrown into the melting pot to break up the action.

Which leaves just one little, nagging question that won't go away no matter how much the marketing men try to hide it under the carpet – what is an interactive movie exactly and does anyone really know yet?

Psygnosis have always been at the forefront of new game concepts and design. With the arrival of the rather exclusive FM Towns CD-based machine, production began on the now legendary Microcosm. Described as the title where movies and games meet in the middle, the game has surfaced on the CD32 to mixed reviews.

With this apparent insight in to how it should be done, The Devil's Advocate descended on the Liverpool-based software company to see if Mike Simpson, producer of this journey round a rendered human body, had some answers to the burning issues.



Microcosm...received mixed reviews

A Yes, and the reason is because you can put branches in it. If you're modelling all the graphics, the advantage is that you can repeat a given scene and change the outcome. You can have forks in your animations that you can't do with film. It's also possible to arrange it so that you can't see the joins.

Microcosm had a few branches like that but you didn't really notice them – they were basically tunnel junctions and there wasn't that much interaction with the background, in fact almost none...

Q Is that down to the constraints of the technology at the moment?

A No, we're sort of evolving that technology – that was the constraints of the technology at the time. The second game in the series, Scavenger Four, which is only out on the FM Towns machine at the moment, has started to introduce interaction with the background by allowing you to collide with objects which are part of the film.

The stuff we're working on now is a lot more interactive. Basically there are sprites and things under computer control in the film and you can't tell where the sprites and the film meet... you can't see the joins. That's where we're heading.

Q Do you feel that striving toward interactive movies is perhaps moving away from the real issue of absorbing gameplay? Do you feel it's what people really want or would they rather just have, for example, a good platform game for their money?

A There's no reason why you can't have a good platform game which is an interac-



A lengthy animation sequence shot in the style of Blade Runner and other sci-fi movies precedes the main game. Familiar film techniques such as throwing focus, shock cutting and film noir lighting are in abundance



An animated background of blood vessels and brain areas continually runs throughout the action sequences, adding an extra sense of realism. Shame that the in-game sprites stand out so much from it...

There is no reason why you can't have a good platform game which is an interactive movie.

tive movie. It's just another medium. It's another format for a game like a sideways scrolling one...

Q Like a new genre?

A Yes, it's just a different genre. There is no reason why you can't write a fine game using that genre. It just hasn't been done yet to the same extent that the other genres have.

Q Which machine, either presently, such as the PC, or in the future, such as the Sony PSX, has the highest potential for achieving the ideal interactive movie?

A The PSX obviously, because it's what we're working towards the most. We're still supporting all the other platforms as well...

Q Do you have a PSX yet?

A I don't think I'm allowed to tell you yet (laughter). I may or may not have laid my hands on a PSX.

Q Out of all the interactive movies that you have played, which game do you feel has been the most successful so far at hitting the target?

A I don't have a favourite from that point of view, I don't think that any of the ones that have actually been released go anywhere near far enough in interactive terms. The stuff we're working on now is far, far better. Everything game we do, it gets a bit better.

There haven't been that many games out yet that I would call interactive movies – it's difficult to judge the whole genre on just half a dozen games. You'll probably find that the first half a dozen sideways scrolling platform games were pretty naff...

Q Do you think at the end of the day, this is all going to end up costing far

too much money for certain software producers? Ground Zero Texas on the Sega Mega CD cost \$3,000,000 to make. We know that you use computer generated material. Is film and video simply an impractical solution?

A If you want to do something that is really interactive, then yes. You need to go back and repeat each scene exactly the same to get the branching. I don't know, you could mix in some video. I'm sure people will come up with clever ways of using video as well, but that's not the way I want to do it personally...

Q Can you ever see a stage when Hollywood could possibly take over the games industry like it has with international film making?

A No, I think there is a merging of all these different entertainment industries at the moment. I would say if one is going to take over the other, in a way, we [the games industry] may well take over Hollywood.

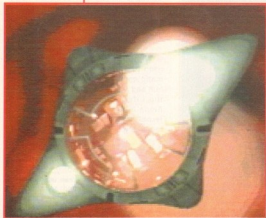
Q What would you like to see in ten years' time?

A Just great interactive movie-style games where technology doesn't hold you back at all. You can do what you want as a games designer and not be restricted in any way.

Thank you for your time.



• If you have any comments or questions about this month's interview then send them to us at the usual address. If you know of any area in the computer industry that you feel would benefit from a visit by the Devil's Advocate, then don't hesitate to drop Amiga Computing a line.



Throughout the game, short scenes are played to add to the cinema-like quality, but is it an interactive movie?

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9 PIN 240 CPS

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INSIGHT:DINOSAURS is the second title in the INSIGHT series, a lavishly produced title rich in multimedia. You can be assured INSIGHT:Dinosaurs will be visually stunning and technically correct as the title is being produced in association with the British Natural History Museum, one of the world's foremost centres of excellence in the field of paleontology. A unique title for the whole family, produced in a concise, easy to read style which allows it to be used for reference and browsing alike.



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The first release of Wordworth 3.0 could have kept an electronic Rentokil in business for years, so infested was it with nasty crawly little bugs. Whether through a panicky desire to beat Final Writer release 2 or a major error in beta testing, Digita managed to launch their thousands of upgrading WW2 users into a nightmare world of gurus, crashes, and glitches which rendered a promising package virtually unusable.

When reviewed in our May issue, the program was given a score of five out of ten, one of the worst ever recorded by AC, with the proviso that should the bugs be fixed it would be worth nine.

Well, someone at Digita must have been listening (they could hardly have ignored the screams of protest from reviewers and users alike), because the bugs have been stomped on and a few new features added into the bargain.

Of all the bugs infesting the original program, the most sanity-reducing was Wordworth's instability. On the A1200 in particular, crashes and hang-ups were a regular occurrence. Version 3.0a is a great deal happier, even on an unexpanded A1200 with no extra fast RAM.

With a minimum running requirement of 1.5Mb RAM, the program won't stretch to large documents or lots of piccies without the aid of extra memory, but speed is okay on a standard A1200.

There's no dramatic increase, and 256 colour mode is still snail-like even on an A4000/040, but in general the program runs more smoothly than before.

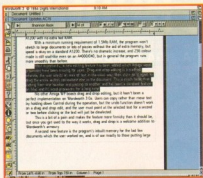
EDITING

Most importantly, a new editing feature has been added which Amiga word processors have been missing for years. Drag and drop editing is a method whereby the user selects an area of text in the usual way, then clicks on it again to drag the entire section somewhere else in the document.

This is much faster than cutting from one location and pasting to another and has been a standard feature on Mac and PC word processors for a long time.

No other Amiga WP boasts drag and drop editing, but it hasn't been a perfect implementation on Wordworth 3.0a.

Users can copy rather than move text by holding down Control during the operation, but the undo function doesn't work on a drag and drop edit, and the user must point at the selected text for a second or two before clicking otherwise the text will be deselected. This



Drag and drop editing can be fast and efficient, even if not perfect in version 3.0a



Bug basher

is a bit of a pain and makes the feature more finicky than it should be, but once you get used to the way it works, drag and drop is a welcome addition to Wordworth's armoury.

A second new feature is the program's inbuilt memory for the last few documents the user worked on, and is of use mostly to those putting large projects together from several smaller files.

Every document opened is added to the new Open Recent option on the project menu, and the user simply selects the name of the document to load instead than faffing around with the file requester.

In addition to single formatting commands, any complex series of changes carried out using the paragraph or font requesters can also be copied in their entirety to another block of text, so if you change line spacing, indentation and justification, all changes can be automatically copied to another paragraph.

COMPETITION

This is still no equal for Final Writer's style tags though, and Digita should seriously consider adopting tags in the next major upgrade. After all, now that Wordworth has so many new DTP-like features and is competing with the likes of Final Writer, it wouldn't be a huge job to nick the idea from the competition.

A scattering of other improvements include a Wordperfect export filter, which should keep PC users happy, and Print Manager support for the new HP DeskJet 520 and 560 printers.

Free to all registered users, this comprehensive five disk update and bug-fix is as good a reply to the original cock ups as could be wished for.

The only question that remains to be

After an inauspicious and bug-ridden start, Wordworth 3.0 claws its way back with version 3.0a. Stevie Kennedy reports

asked is why Digita didn't wait another month or so to sort out the bugs, and release version 3.0 with these new features at the first attempt, thus avoiding the damage to the program's reputation.

Wordworth 3.0a is now the package it should have been all along, and one which can be recommended without reservation.



SYSTEM ESSENTIALS

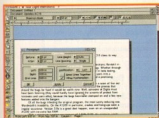
RED = Essential BLACK = Recommended

	1.5 Mb	4 Mb
Hard drive	RAM	RAM

The bottom line

Ease of use 9
Implementation 9
Value for money 8
Overall 9

Product: Wordworth 3.0a
Supplier: Digita International
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Price: £149.95
(free to existing WW3 users)



Complex changes in formatting can be copied to any other paragraph with ease

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The release of Kodak's PhotoCD standard last year was a bit of an puzzle to some observers, who wondered why on earth we should replace the cheap traditional photograph with a CD and an expensive player, but the advantages of the system are many.

Photoworx is the first Amiga PhotoCD driver officially licenced from Kodak and comes in the shape of a floppy containing the software to read Kodak CDs, a manual, and a demonstration disc holding 27 images. As long as the user has a multi-session XA-compatible CD-ROM drive, installation takes only a couple of minutes and the software is ready for use.

Once up and running, the Photoworx software acts as a combined viewer and retrieval system. By loading a contact sheet – which is just a list of all images on the disc – the user can scroll through a pictorial record of what is available.

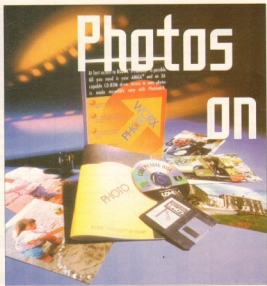
Thumbnails of each image are presented in dinky little boxes designed to look like 35mm slides, and by double-clicking on one or more they can be viewed before being dragged off the disc.

To save time, a quarter screen greyscale window can be used to preview the images, but any screen mode up to full screen HAM or Ham8 can be used if your machine supports it.

Before being exported, the images can be edited to a certain extent. The editing features are pretty basic, and though flipping through ninety degrees or the facility to smooth or sharpen a picture could be handy in some instances, the real killer is the crop feature.

PhotoCD images can be stored at almost any resolution, and for magazine print quality a pixel resolution of 3,072 by 2,048 scanned at 600dpi (dots per inch) is the norm. Individual images can therefore be several megabytes in size, and saving a series of them to hard drive can be a real space-guzzling exercise.

By cropping an image it is possible to cut out a specific section or to do away with borders and unimportant areas around the central picture, and though this is a bit of a stopgap it is



better than nothing. What the software is really crying out for is a Jpeg saver.

This wondrous format can take a 1Mb IFF and crunch it down to less than 100k. When expanded, despite a small amount of degradation, the image is virtually indistinguishable from the original, though it will degrade further if repeatedly compressed and expanded.

MASSIVE FILES

Without the Jpeg option, those who wish to drag pictures off a PhotoCD will need a generous lump of hard drive space, and floppy users can just forget it altogether.

Photoworx depends entirely on exporting 24-bit IFFs, so a copy of ADPro or ImageFX would be highly recommended to complement the bundled software.

Speed can often be a problem with Photoworx. The huge size of some images coupled to the contact sheet method of displaying thumbnails on screen can mean that on 68000 and 68020 processors it can be tedious searching through dozens of pictures.

Store holiday snaps or high quality graphics on CD for only 50 pence per image



What is PhotoCD?

Kodak's system for storing images on CD is quite simple. Just take your photographs to a local PhotoCD shop (most Kodak dealers will offer the service), pay £4.95 for the blank CD, then add 50p for each photo to be scanned and written to the disc. A total of 120 images can be crammed on each disc, but they needn't all go on at the same time.

You can have a roll of 36 prints stored one month, then take the CD back the next month for another batch. This is the multi-session aspect of the PhotoCD standard, and makes the use of a compatible CD-ROM drive essential.

Images are stored in PCD format, which is a true 24-bit image type, and can either be viewed from Workbench using Photoworx or from a dedicated PhotoCD player. These range in price from £148 to £270 for the portable versions, so the players can actually be cheaper than an internal CD-ROM drive.



Stevie Kennedy views some hi-tech holiday snaps with the Photoworx PhotoCD driver

To move things along, Photoworx might have offered some sort of database facility to keep track of which images were on which disc, in the same way that many users catalogue their video cassettes, but no such luck.

Fair enough, a simple PD database would do the trick, but with a built in index life would be a lot easier for the Photoworx owner with lots of discs.

For a variety of applications, most obvious of which are multimedia and DTP, Photoworx is an ideal tool. The option to store backdrops, high resolution photographs, and other images on an imperishable disc and have your own CD mastered for £64.95 (50p per image and £4.95 for the blank disc) makes PhotoCD a low cost, high quality alternative to buying large and expensive removable optical drives and the like.

ALP

SYSTEM ESSENTIALS

RED = Essential BLACK = Recommended



CD-ROM drive



68020



Hard drive

The bottom line

Product: Photoworx PhotoCD driver
Supplier: Bittersoft
Phone: 0908 220196
Price: £89.95

Ease of use 9
Implementation 7
Value for money 6
Overall 7

The Ginseng collection

Although the title sounds more like a fertility treatment than a computer application, the curiously named Ginseng collection does offer a possible cure for the problem of a flagging multimedia libido.

Leaving the rather obvious double entendres aside, the Ginseng collection does offer a painless solution to the sometimes thorny problem of instant audio.

The impressive array of modules and samples ships as a very nicely presented six-disk set, with the word Scala prominently embossed across the bottom.

In a classic piece of marketing the collection's creator has managed to lend kudos from the Scala name by pushing it as the ideal companion to the Amiga's premier multimedia package.

To be fair the collection is indeed ideal for any Scala user, but in truth there is no direct link with Scala, in fact the collection would be equally at home with any software capable of playing IFF 8SVX samples or ProTracker modules.

Obviously, both the PD and innumerable bulletin boards are fit to burst with countless ProTracker creations and sample sounds, but to be honest, it's very rare to find samples and modules of this quality simply floating around.

More importantly there's no copyright problems with the Ginseng collection, in fact you're totally free to use both the samples and modules commercially without any legal complications.

Like most decent software releases Ginseng uses the ubiquitous Commodore hard disk installer which provides an option to add all, or simply just part, of the collection.

Obviously, six disks in the complete collection do add up to a sizeable investment in hard disk space, with 2.57Mb for the modules, another 776KBytes for the intro mods and a further 1.65Mb for special effects.

Fortunately, the modules use their own samples and as a consequence, the aforementioned special effects are permitted to stand-alone use and offer an array of crash, bangs, explosions, clicks, vocal hooks, instrument sounds and so on – all of which are of excellent quality.

The quality of the samples is mirrored in the modules department with a selection of "mood music" and assorted intro sections which, unlike many Mod's, tend to complement rather than overpower a presentation.

If you have sampling equipment and a reasonable knowledge of Mod or some other Tracker clone, you could save yourself a mountain of cash and produce your own accompaniment from scratch.

However, if time is of the essence and you have neither the talent or inclination to spend hours at the controls of a Tracker, the Ginseng collection offers a high quality, if expensive alternative.

The Ginseng Collection

© 1990-1991 Robert White

A Collection of Music Modules, Sound Effects, and Intro Music for use with

SCALA®

Paul Austin
samples the
abilities of several
backdrop collections

Swerve Video AGA backdrops

Continuing in this month's backdrop bonanza comes the Swerve collection. Fortunately for both parties there isn't a clash with the Alternative collection as the Swerve images concentrate exclusively on computer-generated backdrops in the classic Scala tradition of textured backdrops.

As you can see, the images are fairly classy creations which wouldn't look out of place within any multimedia or videographic production. This is

Power X-Mix-2 packages at

Alternative 3D textures volume 3



For longer than they would care to recall, Alternative Image have been synonymous with professional Amiga videography. But in recent years they've spread their corporate wings and branched out into the shady world of software design and distribution.

Now in this third generation, the Alternative Texture collection has wisely abandoned the egalitarian approach of the past and opted for Jpeg compression – thereby cramming almost 10 times the amount of imagery on the same number of disks. In the case of version 3, this adds up to over 100 images in all.

In previous incarnations of the texture collection each image was presented in a variety of forms, ranging from 24-bit IFF down to eight colour Scala compatible backdrops.

In addition – and no doubt due to available space – the images weren't supplied in full video resolutions. As a result the graphics often required some form of image processing – which obviously tended to erode the benefit of having numerous versions of the same image. After all, if you can scale an image it's fairly likely you could convert it if the need arose.

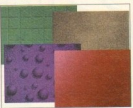
Now the ladies and gents at Alternative have finally – if reluctantly – cast off their socialist ideals and assumed quite rightly that if you're in the market for a quality texture collection you'll also have access to suitable image processing software such as ADPro,

Supplier: Meridian Distribution Ltd
Tel: 081 453 3500
Price: £49.95

particularly impressive when you consider that all the graphics are in lo-res – that's 320 x 256 – with maximum overscan.

In a world which seems to revolve around hi-res 24-bit imagery, a lo-res collection of backdrops may appear a rather curious endeavour. However, Swerve are by no means new to video business and have targeted an audience which are all too often overlooked.

As many of you will be aware, hi-res images do indeed look great but they're notoriously tricky to handle when it comes to video. Basically, unless you're lucky enough to own an 030/040-based



Lo-res colour backdrops with Swerve

machine, employing hi-res graphics effectively can be almost impossible.

However, thanks to the Swerve collection even a standard A1200 can enjoy high quality and fast moving backdrops as part of video or multimedia projects. In addition to being pleasantly drawn and textured the author has also given some thought to their application.

A classic example of this is the organisation of the colour palette. All the backdrops are 128 colour creations but only 64 colours have been used on the

backdrop, thereby leaving you with an additional 64 for titling and graphics. The collection also ships with 28 additional palettes which can be easily swapped with the backdrops original colour scheme in any decent AGA paint package.

Believe it or not the good news is still to come. Apart from receiving over 45 images on the four-disk collection, the complete set is yours for just £4.75.

In my opinion the Swerve collection has to be the bargain of the month and offers a quality introduction into videography for anyone running an A1200 – highly recommended.

Supplier: Swerve Video

Tel: 021-502 4681

Price: £4.75 inc p&p (add £1.00 for overseas)

As you may have already gleaned from the title, X-Mix-2 is a sequel which follows on where it's audio/video predecessor left off. For those unfamiliar with the X-Mix genre it's basically a high-tech mixture of computer graphics combined with house, techno, acid and trance backing tracks, all boiled down onto a 60-minute video tape.

Apparently, the aim of this audio video bonanza is to transport you to destination planet dream – fair enough, after all if you fancy a day out why not go somewhere exotic...

The question is, will this audio/video combo do the job? Basically I doubt it, but I suppose it all really hinges on your state of mind. As for the graphics, it must be said that in general things are pretty impressive.

With a few exceptions, most of the sequences are fairly imaginative and would be of interest to any animator or videographer interested in keeping abreast with new ideas.

It's fairly obvious that one or two of the animations have been recorded

directly from the source machine – and therefore tend to stutter slightly – but on the whole the quality is pretty impressive.

As for the audio content, I'm probably not the best judge, but if you're willing to take the risk of being inadvertently lobotomised by an endless stream of monotonous and painfully predictable dance tracks it's fine.

Personally, my advice would be to play the tape, turn the sound down, and add your own tunes. If you're into computer graphics X-Mix-2 does offer a pleasant backdrop for a party/rave and is probably at its best as an ambient distraction rather than a focal point.

Supplier: Alternative Image

Tel: 0533 440041

Price: £13.00 inc p&p



Imaginative sequences... avoid the music though

punter prices



View the images first before you install

ImageMr or ImageFX. Better still, all the images supplied are now offered in perfect video resolution of 768 x 576.

However, just because they've gone mass market doesn't mean standards have "gone out the

window". The packaging and overall presentation is as excellent as ever.

As part of the collection, you're supplied with the FastJpeg viewer which allows any of the images to be viewed prior to installation on your hard disk.

In fact each image has the aforementioned viewer as its default tool type. As a result a double-click on the image icon immediately decompresses and displays the image.

For quick reference, an A5 sheet accompanying the collection provides a brief overview of each image in the collection, for example; MoonClouds.jpeg "Herd of moody fluffy clouds – Backdrop/wrap. All pretty straightforward – the file name, a suitably surreal comment plus a guide to the best application for

the image. A seemingly obvious aid to selection but it's amazing just how many texture collections assume that you can remember what an image is like purely via its title.

As for the range of images on offer, again things are pretty impressive including, metals, architectural, landscapes, maps, organic, people, raytraced, skies, stone, water, wood and miscellaneous.

Generally, the quality is excellent although on rare occasions you do get a vague family album feeling – especially in the people section. To be honest I have seen better individual images but on the whole the collection ranks alongside the best in the business.

The collection has obviously been photographed by a talented enthusiast rather than a professional photographer, but at £51.50 it's easily the best value for money collection if you're in the market for real-world and generally organic backdrops and wraps.

My only real reservation lies with the ray tracing section which offers some very old chestnuts which I'm sure everyone in the Amiga market will have seen countless times before.

If you want a better selection and arguably better quality, you'll have to contact a professional image bureau and cough-up between £100 and £200 per image – I hope this puts the question of quality into perspective.

Supplier: Alternative Image

Tel: 0533 440041

Price: £50.50 inc p&p

Lies, damned lies, and...

What greater horror can our education system devise than statistics? Graphs, charts, surveys, order and interpretation – the instruments of torture are legion, yet the national curriculum forces stats on unsuspecting children every year.

There can be few better subjects for a game-based education package than statistics, a subject which most would find competing on equal terms with life insurance in the tedium stakes, and in their usual style 10 out of 10 use a series of six games to lead students towards national curriculum attainment targets (ATs).

Aimed at the 6 to 16 year-old age group, Maths Statistics covers AT5 and three main areas of concern: data collection and processing, representation and interpretation of data, and probability.

The six games each cover one or more of these areas in different ways and, as usual, all progress is recorded on an attainment chart so that the parent or teacher can instantly spot areas where the student is struggling.

BASIC

Of the games included, Survey is the most basic, demanding that the child click on an icon to correctly identify an animal as it appears, then answer simple questions on which was the most numerous, how many frogs there were, and so on.

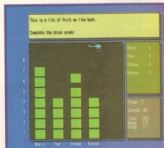
This is easy to begin with, but when the timer is used and speed is increased, Survey is a good test of a pupil's accuracy and speed when collecting data.

As with the other releases in this series, most of the games have arcade leanings, particularly Bomber, where the pupil's task is to match a graph to the figures given.

To force each bar on the graph to the correct size, a helicopter can either drop an extra brick or a bomb, making this one of the most fun games as the speed increases.

The best for thoughtful reviewers unware of the snakes and ladders-based Cheers game, which poses multiple choice

Stevie Kennedy tests his statistical skills with 10 out of 10's new Maths Statistics package



Build the blocks up or bomb them down to match the data

questions on probability and can easily trip you up.

This game can also be customized using a list of questions set by the teacher, so there's scope for additional exercises, perhaps to tie in with a classroom project.

Of the other three games, Sniper, Archer, and Whack It, the Sniper exercise is probably the best. This forces students to interpret graphs and pie charts, extract the correct answer, and shoot it before time runs out.

In all, this is another solid product from a range of titles which is beginning to look more or less comprehensive in its coverage. The usual reservations about how much longevity these simple games will have with teenagers is the only snag with what is otherwise a package well worth having a look at.

The bottom line

Ease of use 9
Implementation 7
Value for money 8
Overall 8

Supplier: 10 out of 10 Software
Phone: 0742 780370
Price: £25.95

Power PC1202-8

RAM expansions for the A1200 may not be big news these days, but there aren't as many 8Mb boards around as one would expect. The standard 4Mb expansion is perfectly adequate for those who wish to run a paint package or a memory-hungry word processor, but for 3D applications, image processing and others, the only choice is 8Mb.

Power Computing's latest board is based on a DKB design and incorporates a pair of SIMM slots, a socket for an optional FPU, and a battery backed-up clock. The FPU can be purchased separately and the board's design allows for up to 40MHz with the 68882, good enough to enable ray tracing and so on.

In addition, the MagicMem software supplied with the board forms a neat solution to a problem suffered by those who use the PCMCIA slot for other purposes. Hardware restrictions normally mean that if a peripheral is plugged into the PCMCIA slot, only 4Mb of trapdoor-mounted 32-bit RAM can be accessed.

The maximum 5.5Mb fast RAM can be used, which is a 37.5 per cent increase over the 4Mb and therefore not to be sniffed at. Of course, if no PCMCIA peripheral is attached, the full 8Mb will auto-configure in the normal way.

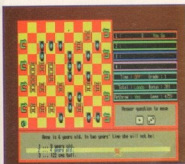
In a welcome move towards user-friendliness, the board has its jumper settings for the various RAM configurations (0, 1, 2, 4, 5, and 8Mb) clearly indicated, both on the packaging and on the PCB itself, making life a lot easier for the user who starts with a small amount of memory and upgrades at a later date.

Well built and designed (the thumb hole in the board to allow easier removal from the trapdoor is a great idea), Power's PC1202-8 is a far better RAM card than the many 4Mb examples doing the round, if only because it is cheap to buy with less RAM and can be upgraded so easily. Highly recommended.

The bottom line

Ease of use 9
Implementation 9
Value for money 9
Overall 9

Supplier: Power Computing
Phone: 0234 273000
Price: From £79.95 bare to £225.95 with 8Mb RAM and 40MHz 68882



Questions on probability can catch you out in Cheers

Best of both worlds

Both Music-X and Notator-X can run as standalone programs, but if your Amiga has more than 1.5 meg of memory, you'll be able to run both Music-X and Notator-X together and move music data between the two programs.

This is where the fun really starts, because you can create and print a score with Notator-X and then switch to Music-X to play it.

Alternatively, you can create conventional sequences using Music-X and then get Notator-X to transcribe and print them for you.

Music-X/Notator-X will not tempt Bars & Pipes' users away from their camp, and it is unlikely to make much of a dent in the established KCS user base because this sequencer has a superb track record for reliability and user support.

Existing Music-X users, however, are mad if they don't upgrade to this new version, and I suspect that many Amiga users looking for a powerful, and affordable, sequencer will be likely to opt for Music-X/Notator-X simply because of the notation facilities now provided.

The hottest news on the Amiga music front of late has been the arrival of an updated Music-X, coupled with a score notation program called Notator-X.

Although it's the latter area of the new package that looks most newsworthy, I will – since many of you will have doubtless joined the Amiga music world since the birth of the original Music-X – start by sketching out some details about this side of things first.

VERSATILE

The thing that immediately strikes you about Music-X is its versatility. As well as the usual sequencer controls and internal events for things like tempo changes, it has sophisticated editing, clever MIDI re-routing options, SMPTE and MIDI timecode support, a protocol language for setting up specialised MIDI communications and a librarian for receiving and transmitting bulk MIDI data.

We haven't the space to deal with all of the options, but here's a few examples to



Music-X itself looks much as it always did

whet your appetite. There's a "Channelizer" which globally translates MIDI channel data during playback and a "Filters" page which lets you modify or remove incoming events.

As well as external MIDI control, Music-X can use internal Amiga IFF sound samples (up to 64 memory permitting) and facilities for editing/envelope shaping etc., are included.

Two editors are provided – a "bar" editor and an "event" editor. The bar editor, which got its name because it displays events

graphically using coloured bars, is easy to use and includes options such as "feedback" which lets you hear playable events as you reposition them.

You can select, via the menu, the types of events to be displayed and this can greatly simplify the editing process. Although you can easily do all normal editing by using the bar editor, an "event editor" is also provided and this lets you work with detailed lists of the events and add, remove or modify any parameter you see.

Your source of
inspiration

For further details of Music-X/Notator-X contact the Software Business on 0480 496497

In time to the

The new Music-X midi-sequencer package has arrived (just). Paul Overaa checks it out against the competition

KCS - another heavyweight alternative

The current Dr T's offering, known as the KCS level II, provides the KCS sequencer, PVG, a Master Editor, Tiger, QuickScore and AutoMix. All of these components are integrated into Dr T's multi-program environment (MPE).

The track editing facilities are very sophisticated – there is fully implemented cut and paste editing, pitch transposition, track shifting, track splitting, note duration and velocity correction functions, track rearrangement, multiple cue points, measure-location, automatic new track muting (helpful when doing multiple takes), and some interesting note and controller-splitting facilities.

Other goodies include remote MIDI control of start/stoptop/record functions, support for the Phantom SMPTE interface, controller chasing, time reversal, re-channelling, auto-correction, real-time and step-time editing, inversion, and the ability to protect drum parts from transposition.

In short you'll find that there's little you can't do with the KCS sequencer.

Tiger stands for The Integrated Graphic Editor and it is a piano-roll graphic editor. It offers its own event and group cut/paste facilities, zoom facilities for editing

at differing levels of detail, has its own sophisticated quantizing facilities and can do things like time-shifting and sequence reversal.

QuickScore is a module that analyses the data held in the KCS and displays it in notation form. It's good, but it just provides basic score/transcription and printing facilities, not proper score editing like Notator-X.

One point that is worth mentioning, for those who need more sophisticated KCS-based score notation and score editing facilities, is that Copyist DTP, Dr T's heavyweight notation program, is also MPE compatible, so a professional user can easily link both packages.

AutoMix provides KCS with automated mixdown. PVG (Programmable Variations Generator) is a tool for creating sequence variations. The Master Editor is used in more mundane, but equally important, global editing operations – controller thinning, arpeggiation, note sorting, deflaming etc.

The KCS package at its current price does, incidentally, represent some of the best, and most cost-effective, music software seen on the Amiga to date.

Bars & Pipes - THE alternative heavyweight

Blue Ribbon Soundwork's Bars & Pipes Professional is as much a creative tool as a conventional sequencer. The centre of the main display contains a track list and each track sits graphically in the middle of a 'PipeLine' which starts at the left-hand side of the screen and finishes on the right.

Conceptually, your Midi data flows in at the left-hand side of the pipeline, through the sequencer, and then leaves via the right-hand side output side.

The pipeline concept works in conjunction with something called the ToolBox, a window which contains icons that can be dragged into and out of the pipeline. Much of Bars & Pipes Pro's power actually comes from the now massive range of tools available.

The general sequence editing facilities are brilliant. When detailed Midi numerical data is needed, you just click on the event and a window appears giving the full MIDI data.

The graphical song construction window makes it easy to build up multi-track, multi-

sequence songs and there are some very powerful song parameter options which let you define lyric lines, chords keys/scales, rhythm data, global dynamics and time signatures.

There's automated mixing via a MixMaestro utility, all the usual stuff like Midi-file, Sysx and internal sounds support, timeline scoring (for video/film work) and SMPTE facilities - the list is endless.

Bars & Pipes Pro is a brilliant piece of software which, in practice, suffers from only one real snag - the amount of memory needed to run it. The package is massive and although just about loadable on a 1 meg machine, a realistic set up for serious work would be a fast machine with around two-three megs of memory, along with a hard disk - especially important if you intend using the multi-media facilities.

The other thing to bear in mind is that a number of B&P tools have to be purchased separately, so the effective overall price of the package can end up being rather more than the cost of the original sequencer.

With version 2.0, many of the Music-X facilities have been updated and among the excellent new modules (which provide things like improved quantising and swing facilities) there's a RexEdit component that allows ARexx scripts to interact with the Music-X sequencer data (a range of useful scripts are provided).

Support has been added for users of multiple serial port cards (Checkpoint's Serial Solutions Card, Passport's Midi Transport hardware, and Blue Ribbon's One Stop Music Shop). Documentation for these types of changes are, incidentally, dealt with in a 60-page addendum to the original manual.

Notator-X allows you to write, edit and print music scores using a maximum of 18 stave - by linking two tracks to each stave.



Notator-X is likely to win the new Music-X many new friends.

At a glance

music

the program can actually deal with 36 tracks, with track one linked to track 19, track two linked to track 20 and so on. Needless to say, this is more than enough for most users needs - unless you're a budding Mozart.

Repeat symbols, first, second and third-



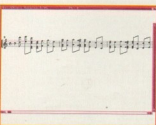
Blue Ribbon's Bars & Pipes - an established alternative heavyweight sequencer

time endings, Segno, Dal Segno, Coda and To Coda, triplets, signs, dynamics, accidentals, beams, trills, pedals, octaves etc., are all allowed, and the score editing and printing facilities are, in the main, excellent.

If you're new to this sort of thing you can even get help with your score writing - for instance you can ask Notator-X to correct position and note duration so that notes are drawn, therefore not cutting across the beats of a bar.

Doubtless to say, there are some areas of Notator-X's score facilities that purists will pick fault with (for example, double-dotted notes aren't supported) but the program is good and is likely to satisfy the needs of 99% of Amiga musicians.

Incidentally, Notator-X is easier to use than the - admittedly powerful - Dr T's Copyist program.



Dr T's KCS Midi sequencer provides a QuickScore module for notation display

	Music-X/ Notator-X	Bars & Pipes	Dr T's KCS
Workbench	1.3 upwards	1.3 upwards	1.3 upwards
Realistic Minimum memory to run	1.5 - 2 meg Suitable for most users	2 meg - 3 meg Depending on intended use	2 meg suitable for most users
Can main components run separately	Yes and will run on machines with only 1 meg	No	MPE modules cannot be run as separate programs
Editing	More than powerful enough for most users	More than powerful enough for most users	More than powerful enough for most users
Midi File support	Yes	Yes	Yes
Hard drive	Not essential but recommended	Virtually essential to use package as intended	Recommended
Score-based editing as standard	Yes	Yes	No
Long term software support	An unknown quantity at present	Has a proven good track record	Has a proven good track record
Multiple serial port support (with additional hardware)	Yes	Yes	No
Learning curves	A big package so there's a lot to learn about	A big package so there's a lot to learn about	A big package so there's a lot to learn about
Price	* £149.99	£199.95	£99

* £79.99 for users upgrading from Music-X 1, £99.99 if upgrading from Music-X Junior

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EST. 1991

GAMES

001	REAGAN, RONALD - early addition	021	21-AT ATLANTA 1 (Savage)	041	0232 OMEGA RAIN 5.5 (Great)	061	0238 TACTIC 715 about sm up	081	0242 TETIS PPD	101	0245 HENRI DUNANT - death thinking
002	001 BATTLE TACT 1 (daisy page for K100)	022	041 NARCOTICS NAU SUBMATION (Savage)	042	0239 BATTLE, BRADLEY G 2 (good)	062	0239 SUPER DASH	082	0245 SUPER FICHAN 82	102	0245 HATE BURNING 2 short sm up
003	002 001 BATTLE TACT 1 (daisy page for K100)	023	042 001 BATTLE TACT 1 (daisy page for K100)	043	0240 001 BATTLE TACT 1 (daisy page for K100)	063	0240 POWER POWER POWER 2 (good)	083	0246 JUNGLE JUNGLE JUNGLE 2 (good)	103	0246 JUNGLE JUNGLE JUNGLE 2 (good)
004	003 001 BATTLE TACT 1 (daisy page for K100)	024	043 001 BATTLE TACT 1 (daisy page for K100)	044	0241 001 BATTLE TACT 1 (daisy page for K100)	064	0241 001 BATTLE TACT 1 (daisy page for K100)	084	0247 THE GUY GUY GUY 2 (good)	104	0247 GAMES GAMES GAMES 13
005	004 001 BATTLE TACT 1 (daisy page for K100)	025	044 001 BATTLE TACT 1 (daisy page for K100)	045	0242 001 BATTLE TACT 1 (daisy page for K100)	065	0242 001 BATTLE TACT 1 (daisy page for K100)	085	0248 THE GUY GUY GUY 2 (good)	105	0248 MENTAL MENTAL 2 (good)
006	005 001 BATTLE TACT 1 (daisy page for K100)	026	045 001 BATTLE TACT 1 (daisy page for K100)	046	0243 001 BATTLE TACT 1 (daisy page for K100)	066	0243 001 BATTLE TACT 1 (daisy page for K100)	086	0249 THE GUY GUY GUY 2 (good)	106	0249 THE GUY GUY GUY 2 (good)
007	006 001 BATTLE TACT 1 (daisy page for K100)	027	046 001 BATTLE TACT 1 (daisy page for K100)	047	0244 001 BATTLE TACT 1 (daisy page for K100)	067	0244 001 BATTLE TACT 1 (daisy page for K100)	087	0250 THE GUY GUY GUY 2 (good)	107	0250 THE GUY GUY GUY 2 (good)
008	007 001 BATTLE TACT 1 (daisy page for K100)	028	047 001 BATTLE TACT 1 (daisy page for K100)	048	0245 001 BATTLE TACT 1 (daisy page for K100)	068	0245 001 BATTLE TACT 1 (daisy page for K100)	088	0251 THE GUY GUY GUY 2 (good)	108	0251 THE GUY GUY GUY 2 (good)
009	008 001 BATTLE TACT 1 (daisy page for K100)	029	048 001 BATTLE TACT 1 (daisy page for K100)	049	0246 001 BATTLE TACT 1 (daisy page for K100)	069	0246 001 BATTLE TACT 1 (daisy page for K100)	089	0252 THE GUY GUY GUY 2 (good)	109	0252 THE GUY GUY GUY 2 (good)
010	009 001 BATTLE TACT 1 (daisy page for K100)	030	049 001 BATTLE TACT 1 (daisy page for K100)	050	0247 001 BATTLE TACT 1 (daisy page for K100)	070	0247 001 BATTLE TACT 1 (daisy page for K100)	090	0253 THE GUY GUY GUY 2 (good)	110	0253 THE GUY GUY GUY 2 (good)
011	010 001 BATTLE TACT 1 (daisy page for K100)	031	050 001 BATTLE TACT 1 (daisy page for K100)	051	0248 001 BATTLE TACT 1 (daisy page for K100)	071	0248 001 BATTLE TACT 1 (daisy page for K100)	091	0254 THE GUY GUY GUY 2 (good)	111	0254 THE GUY GUY GUY 2 (good)
012	011 001 BATTLE TACT 1 (daisy page for K100)	032	051 001 BATTLE TACT 1 (daisy page for K100)	052	0249 001 BATTLE TACT 1 (daisy page for K100)	072	0249 001 BATTLE TACT 1 (daisy page for K100)	092	0255 THE GUY GUY GUY 2 (good)	112	0255 THE GUY GUY GUY 2 (good)
013	012 001 BATTLE TACT 1 (daisy page for K100)	033	052 001 BATTLE TACT 1 (daisy page for K100)	053	0250 001 BATTLE TACT 1 (daisy page for K100)	073	0250 001 BATTLE TACT 1 (daisy page for K100)	093	0256 THE GUY GUY GUY 2 (good)	113	0256 THE GUY GUY GUY 2 (good)
014	013 001 BATTLE TACT 1 (daisy page for K100)	034	053 001 BATTLE TACT 1 (daisy page for K100)	054	0251 001 BATTLE TACT 1 (daisy page for K100)	074	0251 001 BATTLE TACT 1 (daisy page for K100)	094	0257 THE GUY GUY GUY 2 (good)	114	0257 THE GUY GUY GUY 2 (good)
015	014 001 BATTLE TACT 1 (daisy page for K100)	035	054 001 BATTLE TACT 1 (daisy page for K100)	055	0252 001 BATTLE TACT 1 (daisy page for K100)	075	0252 001 BATTLE TACT 1 (daisy page for K100)	095	0258 THE GUY GUY GUY 2 (good)	115	0258 THE GUY GUY GUY 2 (good)
016	015 001 BATTLE TACT 1 (daisy page for K100)	036	055 001 BATTLE TACT 1 (daisy page for K100)	056	0253 001 BATTLE TACT 1 (daisy page for K100)	076	0253 001 BATTLE TACT 1 (daisy page for K100)	096	0259 THE GUY GUY GUY 2 (good)	116	0259 THE GUY GUY GUY 2 (good)
017	016 001 BATTLE TACT 1 (daisy page for K100)	037	056 001 BATTLE TACT 1 (daisy page for K100)	057	0254 001 BATTLE TACT 1 (daisy page for K100)	077	0254 001 BATTLE TACT 1 (daisy page for K100)	097	0260 THE GUY GUY GUY 2 (good)	117	0260 THE GUY GUY GUY 2 (good)
018	017 001 BATTLE TACT 1 (daisy page for K100)	038	057 001 BATTLE TACT 1 (daisy page for K100)	058	0255 001 BATTLE TACT 1 (daisy page for K100)	078	0255 001 BATTLE TACT 1 (daisy page for K100)	098	0261 THE GUY GUY GUY 2 (good)	118	0261 THE GUY GUY GUY 2 (good)
019	018 001 BATTLE TACT 1 (daisy page for K100)	039	058 001 BATTLE TACT 1 (daisy page for K100)	059	0256 001 BATTLE TACT 1 (daisy page for K100)	079	0256 001 BATTLE TACT 1 (daisy page for K100)	099	0262 THE GUY GUY GUY 2 (good)	119	0262 THE GUY GUY GUY 2 (good)
020	019 001 BATTLE TACT 1 (daisy page for K100)	040	059 001 BATTLE TACT 1 (daisy page for K100)	060	0257 001 BATTLE TACT 1 (daisy page for K100)	080	0257 001 BATTLE TACT 1 (daisy page for K100)	100	0263 THE GUY GUY GUY 2 (good)	120	0263 THE GUY GUY GUY 2 (good)

SHOULDERDASH

[illegible]

ASSASSINS COMPILATION GAME

[illegible]

DEMOS

0017 TECHNOLOGICAL DEATH (1 x spacebats)	0031 POSSESSOR CEREBAL LEBOTOMY (not 1.3)
0018 SPACE BALLS (not)	0033 STONEARTS ATMOSPHERE Great!
0019 TENGU & THE MEDIA HAIR	0034 KEPPERS GONE Short & Sweet!
0021 TWILIG TRACKING THICKS	0036 SPACEBATS' MIDDLE
0022 BANGS TRASH (2 x disks) Nice	0042 MAYDAY RESISTANCE Nice & Strides
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public



sector

*Tina Hackett takes a look
at what is currently on offer
from the world of Public Domain*

Spinning cubes (again), activity packs for children and games galore are just some of the titles on offer in this month's public domain.

So take your places and see what PD has to offer – and all at bargain prices

Kids' Fun Pack

Programmed by: Aaron McCormick
Available from: PD libraries that sell
'Central Intersware Register' titles
(costs £3.50)

Kid's Fun Pack is the first of two offerings for children this month. A disk containing three games for children, it immediately impresses as a very professional looking package with its slick graphics and high-quality sound effects.

The title screen commands attention, showing a rainbow, swirling images and accompanying jaunty sound track – necessary ingredients for capturing the intended audiences' concentration. Even the most unruly of children will find this a tough one to ignore.

The child then faces the choice of which of the three games to choose first. One of these is an educational game with 30 levels, although it doesn't see educational so the player will be unaware they are being educated – a good play with children!

The game is played by guiding falling

letters (hence its name 'Falling Letters') into a pit to spell out particular words from a given list, such as dog, fog etc.

Points are awarded for each word correctly placed, with a large foot crashing onto the screen (of comical value to a child I'm sure) to indicate success.

The three levels of difficulty available will ensure appeal to children of whatever educational advancement.

The next game in this title is 'Munch Man', another Pac Man clone with 19 levels. Disappointingly, it doesn't differ graphically from the countless others and it is let down even further by the control

ART of the MONTH



Pick n' Stick

Programmed by: Gina Mears
Available from: Childs Play

Pick 'n' Stick is the second children's game to be reviewed. This is a game which immediately whisked me back to childhood memories of playing 'Fuzzy Felts'.

Those with good memories will remember this joyous pastime of picking felt shapes and sticking them onto a felt backing to create pretty pictures. Pick 'n' Stick derives much of its inspiration from this. Today's younger generation can now enjoy this activity on the home computer via this title.

Three different scenes are provided, together with the relevant shapes. These range from 'Underwater' to 'Seaside' and 'Family'. Place the shapes at random on the screen to create the picture. This demo finishes after 30 shapes have been placed (the full version obviously doesn't have this restriction) and with the vast array of shapes available, a young child is guaranteed hours of fun.

The bright choice of colours and the clear, well-drawn graphics are bound to hold great appeal, as is the variety in the shapes from the basic squares and circles etc. to the appropriate pictures, such as seaside animals. Children will benefit a great deal from this programme as it will provide entertainment while encouraging their imaginations. Ease of use has also been considered employing a large, clear icon system.



Create pictures out of the many shapes



Kids Fun Pack: This professional, fun package is great for kids

method. Joystick controlled, you attempt to move the Pac Man sprite around the maze to escape from the Ghosts, only to find that, unless you are blessed with a sixth sense for predicting which way to turn, you

Andromeda: Seven Seas

Programmed by: Fairfax
Available from: Exclusive PD

Brought to us by Fairfax Graphics, this slide show contains 13 quality hand-drawn pictures. The show starts with some excellent pictures portraying images of what seems like Scandinavian folklore.

A snowy mountain scene scrolls past, complete with appropriate accompanying tune. An atmosphere of calmness and tranquillity is created and then broken as images of mythical beasts appear and the pace of the music quickens, almost as if creating a story.

Your usual pictures of metal-breast-plated ladies and the like have also been thrown in for good measure, looking more than a little dated and clichéd. But they are of such a high quality that they do not spoil things.

Tolkien-esque inspired pictures continue the theme and the whole thing becomes reminiscent of a Hans Christian Anderson fairy tale.

The quality of artwork in this slide show is exceptional and it's great to see the way a theme has been created. There is also a section which gives background details as to where the pictures came from, the inspiration behind them and how long they took to create.

Pictures can be reloaded from a main menu screen. Titles include: Daydreams, Encounter, Winterland, Mindrot.



Relics of Deldroneye: Interaction with other characters results in some comic touches

will get caught every time. The controls are too slow and unresponsive to move fast enough and it becomes extremely tedious.

"Grid Painter" the third and last game, thankfully does not fall into this trap. This is a novel approach, the idea being to guide a paintbrush around a grid of red squares.

The paint brush leaves a trail of blue paint and once all sides of the square are painted it turns green. Turn all the shapes green to progress onto the next level.

Progress is hindered by the various bad-dies lying around the levels who, if touched, will decrease your paint metre. These bad-dies take the form of bombs, rockets, dynamite and the like. A massive 50 levels will provide a great deal of longevity.

The whole presentation of the program more than compensates for its bad points. Every screen of each game looks amazing, with its bright kaleidoscopic patterns and, with details such as password systems and easy to select options, the overall program comes across as very professional indeed.

The cartoon-like sound effects such as gunshots, pings and bleeps will add to the appeal.

Please note that this program needs 1.5Mb to run and is compatible with all machines (although A1200 is recommended) except those that are below Workbench 2.0.

Ever get the feeling of déjà vu? This approach has more than outlived its originality value



Party 3 PIX AGA

Programmed by: Party 3
Available from: Exclusive PD

This slide show just had to be included to show how badly slide shows can really be. AGA Art from Party 3 brings us the usual collection of clichéd pictures depicting "provocatively" (I use the term loosely) posed women.

Mythical beasts are in there as well as other pictures of equally poor quality that lack in any imagination. To add insult to injury a terrible 70's style accordion tune plays in the background.

The demo is thankfully short, but this hardly makes it value for money.

Relics of Deldroneye

Programmed by: Lee Bamber
Available from: F1 Licenceware
Disk No: F1018

Relics is an adventure game which clones the likes of Monkey Island/Lure Of The Temptress. This demo version ends after four screens, but the full version boasts around 100 locations and coming on four disks it looks to be huge. If the demo is anything to go by then the real thing looks to be very promising indeed.

Written by Lee Bamber, the author of another highly rated F1 game, Fortress,



Clichés abound but it's still a great quality show

Calling all PD libraries....

....and individuals with anything remotely worth my while having a peek at. If you want something released as PD, or you're a library with stacks of hot new stuff that you haven't seen reviewed yet, why not drop me a line with a copy, full documentation and everything clearly labelled? I promise I'll at least look at your work.

Tina Hackett, PD Submissions, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Relics is a mouse driven, interactive adventure using 64 colour graphics, animations and containing many puzzles to solve.

The main character is a jolly, nicely-animated sprite who starts the game in the dingy depths of a prison torture room. He can interact with the other characters he finds, resulting in some nice comical touches, can take and use objects and there are all the usual actions found in these adventures.

Graphically, the game looks good and the fine attention to detail creates a realistic feel to it. Sound effects on the demo were a little sparse and would benefit from some atmospheric music or more varied sounds.

The puzzles, although quite hard, seem fairly logical and the mouse control system makes life easier. Moving the pointer over the screen reveals clues and the various objects that can be used.

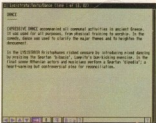
Obviously, it nowhere near comes up to the quality of Monkey Island et al, but for PD it is definitely along the right lines and it is great to see something of this standard and of this particular genre.

NB: 2Mb of Chip ram required and costs £6.99 (author gets £2.00).

The Lysistrata of Aristophanes

Produced by: Immediate Arts
Available from: Immediate Arts

The idea of putting a play on to disk, thus making it far more "user friendly," is obviously a good one. Translated by Glaswegian writer James Morrison, the play



A useful section on how dance fits in with the context of the play

is the comedy by Aristophanes that tells the story of the Athenian women who go on a "sex strike" until their menfolk agree to give up war.

Any part of this two-act play is easily accessible via the various icons, so it becomes possible to access whichever section, or word, that you want rather than laboriously searching through a book.

Other helpful features include a complete cast list, a detailed and very useful history on the background to the play, playwright and culture. There are even quotes from reviewers of the play. The program also contains an animation of a bronze figure of Leonidas the Spartan!

Advertisements for the Scottish Theatre Directory, for example, and other useful addresses complete the package.

Sa-Sat

Programmed by: Stuart Andrews
Available from: Stuart Andrews



Sa-Sat: Select which part of satellites you wish to know about from these options

The great thing about PD is you never quite know what you're going to get next, from the more typically like the spinning cube demos, to the completely bizarre, or to those which fill a particular gap in the market. Like this one here – you want to fit a satellite dish, you got it!

Strange though it sounds, this program does just that. A magazine style title, it tells you everything you need to know about fitting your own satellite dish, from how to get the best reception to what size dish to use. There is also a "neutral" guide to suppliers.

Other contents include a guide to the best



High Noon

Programmed by: Guillermo Garcia
Available from: Guillermo Garcia

A very basic but highly enjoyable shoot-'em-up, High Noon is your usual cowboy scenario, the idea being to shoot you opponent before he shoots you!

Cacti and rolling wagons provide cover, so being skilful at timing your moves to fit in with the wagon, along with a fast reaction time, become essential. Tactics such as firing your opponent into a corner are also possible.

Success or failure is indicated by which one of you is the first to hit the ground resulting in a coffin appearing. The best of nine rounds decides the winner of the game.

Gun shots and the great death sound add to the fun and it's very satisfying to see your opponent hit the ground accompanied by an agonised yell.



Basic graphics but fun gameplay

The two-player option gives more depth to the game. The gun fire is, however, a little slow at times, but this a fun title, very, very basic, but fun.

channels, information on multi-satellite and satellite receivers

Some of the English is a tad questionable and some of the jargonistic terms need explaining, but to those thinking of getting satellite TV I'm sure this will prove to be a rather helpful utility.

Alien Space

Programmed by: Mark Patrick
Available from: Taurus Software

Alien Space is your usual space blaster game in the vein of Alien Breed and the like. Viewed from the first person perspective (trying to look like a Space Hulk clone for all it's worth!) it's your mission to rescue the human prisoners trapped on the planets by an alien race.

Each planet holds a single complex where the remaining people are trapped. Armed only with an Automatic Blaster Gun and a knife, you move around the complex by means of four icons. This enables you to go forwards, backwards and rotate 90 degrees left or right.

The graphics are very basic to say the least, especially the animation of the alien sprites. Effects such as the impact of gun shots are quite laughable as the sprite will flash white and give out a rather feeble roar. However, other sound effects do add some good "Star Trek" type atmosphere.

Pac Pong

Programmed by: Anthony Corcutt and Antony Waterfield
Available from: A. Corcutt and A. Waterfield

Pac certainly does pong with this dire offering. Sorry guys but games have to offer a little more than bouncing a yellow Pac sprite around a screen with two bats (a concept taken from Pong). An already over-used formula for PD nowadays, this "old chestnut" seems to continually rear its ugly head.

Although nothing wrong with the initial concept of gameplay, it needs something really special to liven up the proceedings.

Impressive graphics, a novel theme or sprite, or at least some sampled sounds and a good tune would help matters drastically.

It's no longer enough to offer this basic gameplay on its own, especially when it plays at a snails pace anyway. Two-player mode may raise blood pressure slightly and the different skill levels and lives shows some attention to detail.

Lay your hands on me

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SYSTEM

Your essential guide to the world of Amiga gaming

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Norsey but nice

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The Final Encounter will use the same technology found in Elite 2, but will be a lot more complex than its predecessor

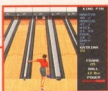
system online

The low down on the latest

batch of software releases

coming your way over the next

couple of months



Animations of the male and female characters have been rendered in 3D



Bowled over

Following on from Arcade Pool, the successful and critically acclaimed budget game, Team 17 have lined up yet another sporty title. King Pin is being billed as "10-pin bowling without the embarrassing shoes".

The game features a six-player competition mode, full auto scoring, digitised sound effects and 3D rendered animations of male and female characters. Players have a choice of bowling balls and will be able to use the after-touch control system.

As per usual, Team 17 are pricing the game at £9.99 for the Amiga and £14.99

The Final Frontier

Gametek have just announced details of a new Elite title to be released this autumn. Frontier – The First Encounter uses the same technology as Elite 2, but will be much more complex and is classed as an extension to Frontier rather than a brand new game.

Creator of Elite, David Braben, has formed a company called Frontier Development Ltd whose sole purpose is to concentrate on further Elite products and add-ons. Elite 2 was launched in October and has so far sold 200,000 copies in Europe alone.

The space simulation has been in the top four in the Gallup charts for almost six months and went straight into the number one spot in the CD32 chart. The top selling computer game of 1993 recently took home the BBC Live and Kicking Award at the recent ECTS.

PC and PC CD-ROM versions of First Encounter are planned for an October release date with the Amiga version to follow soon after.



The new deluxe version of Brutal Sports features 256 colour graphics and has been specially created for the A1200

Top of the league

Brutal Sports Football has been No. 1 in the Gallup A1200 charts for three weeks, but now Millennium have announced the release of Brutal Football Deluxe Edition.

This has been specially prepared for the A1200 and features 256 colour graphics, a new stadium and the option to use a two-button joystick or joypad.

You choose which team of rock-hard mutants to play, and

whether to fight your way up through the leagues or to battle through the knockout competition cup.

Millennium claim that Brutal Football is the ultimate sports beat-'em-up that picks up where Speedball 2 left off.

Brutal Football Deluxe Edition will cost you £19.99 and by the time you read this, will be sitting quite happily in your local games emporium.

for the CD32. King Pin is planned for release in August and you can expect a review within these pages very soon.

Team 17 signed up SuperStardust at April's European Computer Trade Show and have just announced that it will be scheduled for a September release.

Bloodhouse, the Finnish software house behind Stardust, promise that this AGA enhanced version will feature, among other things, 256 colour graphics and all-new ray-traced backgrounds and enemies.



Manga Entertainment has released *Dangaiah*, one of Japan's latest cult animation videos

System Technology

The section where we shine a spotlight on the major players in the computer industry and their latest and forthcoming hardware and software

Nintendo has further strengthened its Project Reality project by signing up Scottish development firm DMA Design. DMA has two Lemmings projects to complete for the Sony-owned games publisher Psygnosis before the end of the year.

Work has already started on Project Reality developments and it is unlikely that any new non-Nintendo work will be taken on for a long time. There are no details on any of the software DMA is lining up for Project Reality.

Sega is linking up with movie giant MGM for joint games projects. Details are scarce and under wraps at the moment, but they are believed to be working on a host of interactive video games, movies and TV shows.

Phillips is set to release a new lower-priced CD-I machine that's solely aimed at the games market. The firm is remaining tight-lipped at the moment, but it is understood that a new model complete with cosmetic changes from the current CD-I 210 is due to be revealed at the Summer CES (Computer Entertainment Show).

Manga Entertainment is continuing to push its range of cult Japanese animation videos into games stores. The movies have already been taken on by Leisuresoft because the videos have particular appeal to gamers.

The latest batch of Manga videos include *Mermaid Forest*, *Wind of Amnesia*, *Dangaiah*, *Guyver 2* and *Violent Cop*.

Innit Marvellous!

21st Century Entertainment is the company behind the hugely successful Pinball series of games and they've got a spectacular, sprawling CD32 platform romp coming your way in September.

Marvin's Marvellous Adventure is the story of a pizza delivery boy and his mission to reach a kidnapped professor to deliver his large pepperoni with extra cheese. Marvin battles his way through 90 huge levels spread over 10 different worlds. 21st Century Entertainment claims that through the

power of the CD32, Marvin's adventure is brought to life with 256 colours, 6 layers of scrolling and a rocking CD soundtrack.

The game isn't all about fancy graphics and sound because 21st Century Entertainment promises that Marvin's Marvellous Adventure will also be hugely playable and highly addictive. You will be able find out whether what they say is true when Marvin hits the shop shelves this Autumn.



21st Century Entertainment says that Marvin will be packed full of playability and addiction



The new CD32 version of Zool 2 features a brand new level that has never been seen before on any other format

Gremlin support CD32

Gremlin has increased its support for the Amiga CD32 by lining up five more titles. The new batch of releases include Zool 2 and Striker, The Legacy of Sorasil, Lital Divil and Top Gear 2. All titles are priced at £29.99.

Zool 2 and Striker are first out of the blocks and should be in the shops by the time you read this. Zool 2's new features include a CD quality soundtrack, introduction sequence and a brand new level which has never been seen before on any other format.

Gremlin now have one of the biggest collection of titles for the CD32. "We supported the CD32 platform from day one and the success we have achieved on our lead titles to date has proved this to be the right decision" offered Gremlin's marketing director, David Martin.

SYSTEM Selections

In this section we tell you which pieces of software have shined over the last few months and why they should have a place in your games collection



Simon the Sorcerer

Adventure Soft's game is cram-packed with puzzles, funny quips and silly asides. While it's a title that you're not meant to take too seriously, it will give you plenty to think about if you're to complete it. Simon the Sorcerer is a very large, well thought-out graphical adventure that'll keep you happy and out of harm's way in the land of giants, fairies and dwarves.

Man Utd Premier League Champions

I've thrown away my copies of Sensible Soccer and Goal because Krisalis have created an ultimately more satisfying football game that will appeal to the true football fan.

The graphics are nicely presented and highly realistic. Couple this with its level of playability and addition and you've got a hell of a game on your hands. Goal and Sensible Soccer fans will want to have this game's babies. Buy it and float to football heaven.



Hero Quest 2: Legacy of Sorasil

Legacy is very easy to pick up, using a point-and-click system in conjunction with the mouse. This is typical of every aspect of Sorasil - generally it's easy to use and even easier to find your self absorbed within.

This combination of D&D style rules blended in with the visual aspects of combat and spell-casting will make Hero Quest 2 an instant success with RPG lovers.

K240

OK, so it might not have spectacular graphics or sound, but it has it where it counts and that is in the gameplay and addition departments. I'm finding it really hard to fault K240, but I suppose if you play enough it will eventually get a bit unvaried, but the later aliens are incredibly tough and will take a lot of experienced K240 playing to beat.

Gremlin's space strategy is a truly engrossing game that will keep you awake until the early hours and I heartily recommend it as this month's game to get your mitts on.



Beneath a Steel Sky

Revolution Software have surpassed the amazing Lure of the Temptress with their latest adventure and I congratulate them on making such a fine adventure game. Everything about it oozes quality and over the last couple of weeks it's been a real pleasure to play. The graphics are good enough to marry and have children with and the gameplay and actual storyline are first-rate. If it doesn't go to the top of the software charts then I think there is simply no justice in this world.

Darkmere

This must surely rate as one of the best 3D isometric adventures ever to appear on the Amiga. It possesses a haunting style that is completely unique, and seldom achieved in many computer titles.

Darkmere is a pretty classy title. The graphics create such a mood that it gives the adventure an immediate head-start over everything else it competes against. It's contained in a huge playing area and has objectives and puzzles that will hold your attention for a good while.



The scores on the doors

Our rigorous scoring system explained

As part of the new look and feel of the software section we have taken a fresh look at the way we score our reviews. In our opinion, review scores have lost their context as percentages; some products have been receiving scores which were only a few percentage points short of perfection, when in truth the products were only marginally above average.

OK, so the scores might seem unnaturally low at first, but that's only because other scoring systems tend to be on the high side and perhaps not as comprehensive or honest as they could be.

In the long run you'll receive a more concise and reader-oriented review that's geared towards the consumer.

- 0-20 This is given to the lowest of the low
- 21-30 An all-round poor game that may have a single saving grace
- 31-40 Just below the average, perhaps let down by a few indiscretions
- 41-55 Games of this score are roughly average with 50 being a perfectly average score.



- 56-66 This is an above average game and is worth buying. For this reason it would be awarded the BRONZE award.



- 67-77 A game of high quality that we have no reservation in recommending. Anything of this ilk would be given the SILVER award.



- 78-89 A brilliant title. Definitely worth buying and almost the definitive of its kind. This standard of game would receive the GOLD award.



- 90-100 The best in its genre. This benchmark title receives the PLATINUM title.



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The start of the adventure. That pipe on the wall will solve the problem with the stuck door



Clicking on your friendly and ever-faithful companion, Joey, will give you some helpful hints



Looking under that pillow reveals a bike magazine which you'll need for later on in the adventure

beat the system

Are you completely clueless when it comes to playing games? Do you need some help? Well, this month we kindly present the first part of our two-part guide to Virgin's excellent adventure, *Beneath a Steel Sky*

If you haven't managed to get down the hole into the furnace yet then look at the explanation in the technical manual that comes with the game. Once out of the furnace head right two screens. Go into the building next to the lift. This is the factory. Chat with Anita and when Lamb arrives, tell him that you're Security.

Go right and place the spanner into the cogs, not forgetting to take the spanner out again. Go back to the room on the left to examine the droid and use the spanner on it. Chat to Joey about a new shell then head right once more.

Try to go into the storeroom but ask Joey to check the room for you. When he returns, tell him to disable the fuse box. Once he has returned again, walk into the storeroom. Pick up the walkway, then pick up the small lump of putty that was beneath it.

Leave the factory and go to the building on the far left of the walkway. This is the steam room. Once inside, use the spanner on both buttons on the boiler. Ask Joey to press the button on the right. Simultaneously, press the button on the left.

When the old man leaves, go to the left of the room and push the switch. Remove the light bulb and use the putty (which is in fact plastic explosive) on the socket. Pull the switch again and the doors will blast open, revealing two more switches.

outside for Lamb. When he arrives chat to him and when he mentions going away, hand him the travel ticket.

Go back to the factory via the lift and talk to Lamb again. After the tour, he leaves you outside the store-room. Go right and talk to Anita. When she asks you for an ID card, hand her Reich's. Then chat with her about everything. Leave the factory and use the card with the LINC terminal. Select 4 and enter the code from the Security manual that comes with the game.

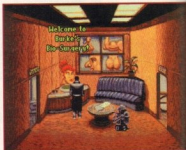


Once inside the surgery, talking to the mad Doctor Burke will reap huge rewards

Pull the switch on the right down and leave the room. Go to the lift near the factory, use the card on the slot and enter the lift. Once out of the lift, head left towards the room with all the plants inside.

Use the card on the left slot and enter the room. Move the pillow and pick up the magazine. Leave the room and head past the lift to the Travel shop on the next screen.

Chat with the man about everything. Hand him the magazine and pick up the ticket, then leave and head towards the apartment. Wait



Getting into the Bio-Surgery is tough, but try asking Joey to speak to the hologram for you

Select 2, then 1, then 1 again and then 2. Exit the terminal and wait for Lamb. Talk to him and he will authorise you to enter his apartment. Before going down, locate the cable to the right of the screen and ask Joey to cut it down.

Go down in the lift and pick up the cable. Go to the apartments and put the card in the slot on the right. Enter the apartments and use the food machine on the right. Pick up the video on the left and leave the room.

Go to the far left of the walkway and you'll find Burke's Bio Surgery. Go inside and chat with the hologram. Ask Joey to persuade the hologram to open the door. Go inside and chat to Burke. Offer Burke your testicles and he'll give you a Schreimann port. Chat to Burke some more and then leave the surgery.

Go right until you find Anchor Insurance (next to Travelco). Examine the statue, then chat with the man. Be sure to enquire about a special policy and tell him that Burke sent you. When the man leaves, quickly ask Joey to use his welder on the anchor. Pick up the anchor when Joey has finished.

Leave and make your way to the top level again. Go into the building opposite the steam room and you'll find yourself back where you started. Go up the stairs and out of the door. Use the anchor with the cable to make a grapple and hook and use it on the Security sign on the wall of the facing building.

Go through the door on the right, use the card in



Talking to the other characters in *Beneath a Steel Sky* will give some interesting clues and information



If you follow this guide to the word you'll hopefully never ever set your eyes upon this screen



A video containing shots of some cats can be played in the VCR, but it has a better use further in the game

a Steel Sky

the slot next to the interface and sit in the interface. Once you're inside LINC space, pick up the ball. Head out of the right exit. Use the open program in your inventory with the carpet bag and pick up the two items.

Use decompress with the compressed data and decrypt the document. Go through the right exit. Use one of your password programs with the floor then go right.

Put down another password, go left, pick up the password, go up, put down, go right then down, pick up, go up, put down, go left, pick up, go up, right, down, right, down, put down, go up, go up, then exit the room.

Once through, collect the bust and the book then decrypt your new documents. Now disconnect from LINC space. Use your card with the LINC machine and select 4. Enter the Security number and select 1. Read all the documents then select 0. Now select 2 and then 2 again.

You now have special authorisation, so exit the system. Use the card in the slot next to the lift and enter the lift. You are now in the Security station. Leave and make your way to the other lift. Use it, then go left to the next lift. Your card will now be able to access this lift, so use it in the slot.



At the bottom, leave the lift and wait for the fat woman with the dog. Chat with her. Now go left and talk to the club doorman. Find the fat woman (Mrs Piermont) again and ask her to sponsor you. Go as far right as you can until you get to the screen with the boy and the gardener.

Press the button by the door on the right. Once inside, have a chat with Mrs Piermont. When she makes her telephone call, place the video in the VCR. While the dog is distracted, get the biscuits from his bowl. Leave and go to the bottom-left exit. Examine the wooden double doors.

Use your card on the lock and go through the door. Pick up the secateurs and leave. Go right and then through the top-left exit. Use the dog biscuits on the plank and wait for Mrs Piermont to turn up with her dog in tow. When the dog starts to bark, pull the rope.

As the guard gets distracted, sneak into the cathedral. Go through the top-left exit and open all the lockers. Leave and go back up to the top level via the lifts. Enter the factory and go back to where you last saw Anita alive.

And that is where we leave it for now, but be sure to tune in next month for the second instalment.

Premier Manager 2

We've recently picked up a cheat to help you on your way with Premier Manager 2. Go to the telephone and dial 781560 – you will be confronted with a gambling machine where you can win extra money and increase your player's statistics. There are three other codes to help you on the machine, one is good, one average – where you stand a 50/50 chance of winning – and one which is bad and will lose you your money. And we're not going to tell you which one is which, so you can learn the hard way!

896610, 220769, 602114.

Have some fun by using the code 0898 69 and then click on the secretary.

A general tip here: Select the GM Vauxhall Conference League, choose a 4-2-4 formation and play the long ball for guaranteed success.



The platform game is the hardest of all the software perennials, having graced every single format since the turn of the century. Indeed, it seems like platform games have hijacked the world's media as Italian plumbers run roughshod over our TV screens.

But it wasn't always so. If you hanker for those days of yore, then never mind the hi-tech, high-speed hedgehoggery of the modern platform game, Starbyte's new platformer harks back to the misty days when puzzles and brainpower ruled over velocity and street cred.

INTRODUCTION



If Flynn is to survive his quest, you'll have to make use of his many weapons

STORYLINE

The year is 1641 and Captain Jeremy Flynn, the notorious pirate, is leading his band of merry rogues across the seas, thieving wantonly as they go.

However, the rather clueless captain manages to get lost at sea somewhere near Tortuga. They drift about for days and supplies start to run perilously low. Just as all hope seems to be lost, the eagle-eyed pirate in the crow's nest spots driftwood in the ocean.

Flynn puts two and two together and realises that land must be nearby. Unfortunately, it's a case of out of the frying pan and into the fire as the land in question is in fact Devil's Island, home of the ruthless Redbeard.

Redbeard and his men capture Flynn's men, smash up his ship and make off with all his loot. Understandably peeved, and as befits the hero of a platform game, Flynn sets off to even the score by leaping across the four levels of Devil's Island, collecting objects and power ups as he goes.

GRAPHICS

First impressions aren't very impressive. There's a perfunctory intro picture, with the story told in scrolling text over a bland background which doesn't really elicit any kind of atmosphere at all.

Once in the game, things pick up a bit and there's plenty of colour and detail splashed about without inducing any eye strain. The sprites are of a pleasing size and don't dissolve into the backgrounds, so there's little sudden death from hidden baddies.

Things move at an untaxing pace, but we'll forgive them as the emphasis is on puzzles rather than thundering through the game in as little time as possible. Nothing too mould shattering then, but not disastrous by any means.

56%

Traps'n'

There's rum happenings
on the high seas, so join
Dan Whitehead as he
rolls out the barrel of
adventure



Save up your gold pieces and purchase useful items from this saucy chap



Here's one of your purloined pirates, but you need to use a bit of brainpower to reach him

FLASHBACK

There must be about a million games that this is similar to. Next to recent competition this looks a bit like a fossil, but modern platform classics like Soccer Kid are pretty far removed from Traps n' Treasures' style of play, so it's probably not fair to compare them.

The game closest to it that comes to mind is Rick Dangerous, from about a hundred years ago. That also involved plenty of switching levers and shunting blocks to progress, and the variety of weapons are also similar. If you want to go back further, check out the Wally Week and Monty Mole games on the Spectrum.

Publisher: Kralite
Developer: Starbyte
Bites: 2
Price: £25.99
Genre: Platform
Hard disk install: No
Control system: Joystick/Keyboard
Supports: 6500/16000/32768/144000
Recommended: 80000 upwards



It is, it is a glorious thing
To be a Pirate King

The Pirates Of Penzance

ADDITIONAL INFO

Believe it or not, Devil's Island actually exists. It is the smallest of the Îles Du Salut, 43 miles northwest of Cayenne. However, the whole group of islands became known as Devil's Island when it was used as a notorious penal colony at the turn of the century.

Devil's Island itself was used for political prisoners, although the island now houses a rocket tracking station. One of the most famous prisoners of the colony was Alfred Dreyfuss, a French Army Officer who was framed and imprisoned by the corrupt Major Esterhazy. Neither of them, however, were pirates.



If you can collect six pieces of the treasure map then you can take part in this oh-so-exciting sub-game, where you can collect lots of diamonds

SOUND

First of all, turn the volume down to avoid being driven mad by the patented generic platform game tune at the beginning. It seems to have leapt from a 1989 PD game. However, this crime against melody is made up for with some pleasantly unobtrusive sound effects and tunes during the actual game.

Particularly worthy of note is the mellow underwater music that accompanies Flynn's swimming antics. If you ignore the opening tune (and I advise you to) then there's nothing to complain about here.

45%

Treasures

OPINION

49%

Well, you can look at it any way you want, but this is still just another platform game when all's said and done and as such it's hard to get over excited about it.

The main problem is that while this game might have been quite spanking about five years ago, it just looks a bit pedestrian nowadays. I'm all for a bit of brainpower in my games, but Traps n' Treasures isn't just puzzling, at times it's downright uneventful.

I tried very hard to really enjoy this game, but the best I could do, I'm afraid, was merely like it. It looks inoffensive, it sounds inoffensive and it plays reasonably well, but it's lacking something that would make it an essential buy.

Maybe it's the old-fashioned approach, or the fact that the puzzles are sometimes

frustrating rather than intriguing. It's also quite common to leap off a platform and plummet to your death, as it seems our poor Cap'n Flynn can't fall much more than a screen without breaking every bone in his body.

However, most of the game revolves around dodging enemies and trying to reach tricky platforms, rather than using your brain to figure out what to do once you've got there. This can lead to unnecessary frustration as you spend hours leaping in vain at some elusive platform with an essential item on it. There are crates that can be lugged around to help reach higher areas, but if you're careless you could end up blocking yourself in, leading to further frustration.

There is a certain sense of satisfaction to be gleaned from progressing through the game, but it's ultimately overshadowed by a sneaking suspicion that your time and money could be spent more profitably elsewhere. Terminally average unfortunately.

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


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A few principal cast members from Core Design's superb adventure

I

Following the unprecedented success of Core's first Heimdall saga, the Derby-based software house have decided to dust down their longboat and set sail for the shrouded world of Norse mythology once more

INTRODUCTION



GRAPHICS

As you might expect, Heimdall 2 employs the same style as its predecessor. The two characters you control, Heimdall and Ursha, are both well animated and look the part.

Heimdall 2 is another of a recent batch of 3-D isometric adventures that have appeared on the Amiga recently. However, it differs slightly from others in the respect that the style Core have opted for is (like the original Heimdall) very cartoon like.

The locations are plentiful and varied enough to keep the player interested and for the majority of times have some relevance to the overall plot.

Heimdall 2 is the kind of title that lures you in with its semi-cute graphics style. The game almost asks you to explore it.

78%

SOUND

The music in Heimdall 2 is limited to the introduction sequence and the map sections where you select your next destination. While limited, the music is extremely well orchestrated (almost a pun) and suits the style of the game totally.

During play there's no music, but the team have taken full advantage of sampled sound effects. While this approach isn't everyone's tankard of elk mead, surely some beefy sound samples are preferable to cheesy tunes that soon do your swede in (another pun?) after about five minutes.

78%



If you don't fancy playing Heimdall, perhaps Ursha could tickle your fancy



Ursha faces one of the final challenges in Heimdall 2

STORYLINE

Our tale begins in the age of Ragnarok, the age of a thousand years, which ended with a battle between the Gods of Asgard and Loki the outcast.

The exiled Loki exacts his revenge by stealing the sacred weapons of Thor, Odin and Frey. Heimdall (our hero), sacrifices his divinity to walk the land of mortals in search of the stolen weapons.

Completing his quest, Heimdall returns to Asgard to find peace. Meanwhile, Loki swears vengeance on Asgard's latest hero.

Two hundred years pass and the banished Loki, stripped of godly powers, roams Midgard, the land of humans.

Loki builds an army and starts attacking the villages'. At first the villagers fight is strong, but as the attacks continue their will weakens.

The Gods, unable to do anything from Asgard, decide that Loki must be trapped in a manner that will stop him perma-

nently. Odin tells them of a place he had visited many years ago when the world was still forming. It was the Hall of Worlds, a place which contains portals to parts of Midgard, Utgard, Niflheim, and other more bizarre parts of the universe.

While journeying through various terrestrial worlds, Odin finds a portal. He arrives in a strange land, and is greeted by a strange man.

The stranger offers him a talisman as a gift. Odin takes the talisman and suddenly finds himself back beside the gate in his own Hall of Worlds.

Odin discovers the talisman, freezes the wearer solid, and duly breaks it into four pieces and hurls them into the different portals.

On finishing his story, the God's agree that restoring the amulet would put an end to Loki's mischief permanently.

Baldur was sent first, but met his death at the hands of Loki. The next volunteer was Heimdall, but the Gods insisted he must have some protection. So a young Valkerie named Ursha volunteered to accompany Heimdall.

ADDITIONAL INFO



Computer games are notorious, for Heimdall 2 quite accurately recreates the mythology of the Norse people in its play.

Icelandic mythological poems reflect a strong interest in the creation of the worlds and its ultimate destruction and re-creation.

The earth is represented as a circle of land surrounded by ocean. In the oceans depths lies the World Serpent, while in the centre of the land is a mighty tree, the World Ash, Yggdrasil.

The tree's roots go down into the underworld, and beneath them bubbles a spring, the source of hidden wisdom. The tree is the guardian of the gods who hold their council beneath its canopy.

Two races of gods, the Aesir (sky gods) and the Vanir (earth gods), are said to dwell in Asgard, in the heavens. However, the Vanir also dwell in Vanaheim beneath the Earth.

Beneath the trees roots lies Jotunheim, land of the giants, and a realm of the dead ruled by Loki the trickster's daughter, Hel.

Loki, who plays an important part in Northern myths and Heimdall 2, is a trickster figure, a thief and a slanderer. He is a close companion to Odin and Thor, yet he gives birth to the monsters which will destroy them.

In Norse mythology, Loki eventually kills Balder, and as a punishment is bound across three rocks, unable to break loose until the final great battle, Ragnarok.

Heimdall

2 Ever fancied yourself as a Viking god?
Well, now's your chance. Join Simon
Clays as he dons his helmet
and heads for the halls of Valhalla



Our hero begins his journey in the Hall of Worlds



Heimdall walks through the aftermath of a rather gruesome battle



Your longboat takes you from island to island

OPINION

77%

Yes, there's been a glut of 3D isometric titles lately. Yes, its been me whose had to look at them all, but no, I'm not cheesed off with them yet.

Heimdall 2 is a very cleverly-crafted piece of software. Thanks to Norse mythology, the plot is slightly different to the normal orcs, big bad magician and muscle-bound hero nonsense that continually turns up.

Although you know the overall objective of the game, sub-plots that you don't think will be con-

nected cleverly link into the overall scheme of things. The puzzles too are a clever element of Heimdall 2. Some are a touch difficult, but the majority are fairly logical, and neatly interwoven into the overall plot.

When it comes to accessing your characters belongings, Heimdall 2 uses a similar system to Dungeon Master. As this is the universally acknowledged approach, it's very easy to handle and comes naturally to the user.

As with every adventure title of this type, magic and spells have to rear their cliched and very ugly heads at some point. Heimdall 2 again, takes some of

its inspiration from Dungeon Master, using symbols, in the form of runes, to construct your spells.

If I had to nit-pick and find a complaint, then it would have to be that there doesn't seem a necessity to use two characters. Indeed, during my escapades I only ever used one character, finding little use for the second until the former had passed on to Valhalla.

Generally though, there isn't a great deal wrong with Heimdall 2. It looks good, is interesting and compelling to play, and it's different enough from the original Heimdall, while still keeping the style and look in the same vein.

E

xuse the self-indulgence, but there is nothing I like more than a pint (or eight) and a couple of rounds of pool. I don't know why booze and a game that's all about accuracy and angles go so well together.

I can safely say that I'm not the world's best Pool player, but I remember one fateful evening when (after a pint or three) I became the local Pool king. Oh yes, people tried to beat me, but god damn, I stayed on that table all night playing shots that you just would not believe to be humanly possible.

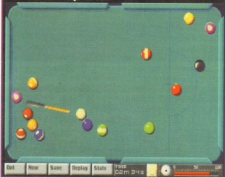
OK, so it has never happened again since that day and probably never will, but now, thanks to Team 17, I can at least work on my game and my angles via their brand new budget extravaganza, *Arcade Pool*.

Team 17 are now infamous for providing gamers with top-class quality software at a price that's right. *F17 Challenge* and *Qwak* were both original games that were worth at least three-times more than their asking price.

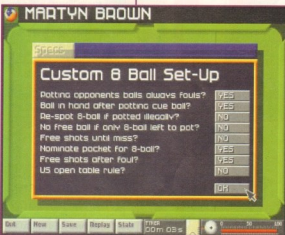
These two products were immensely popular with the games-buying public and now Team 17 are hoping to achieve the same kind of results with their first budget release of 1994.

INTRODUCTION

Instant Replay...



If you click on the replay icon placed at the bottom of the screen you can watch one of your amazing shots over and over again



When playing eight-ball *Pool* you can choose between a whole host of options to change and alter the game to your liking

Arcade

FLASHBACK

The only other Pool game worth mentioning in the same breath as Team 17's *Arcade Pool* is *Archer Maclean's Pool*. This more technical and involved piece of software featured some hyper-realistic polygon graphics and was an absolute dream to play.

Although not exactly pool, Jimmy White's *Whirlwind Snooker*, *Archer's* previous game, is also worth a mention. *Whirlwind Snooker* takes a lot longer to play than Pool, but it is still one of the greatest sports games that you can get for the Amiga.

SOUND

When the production of *Arcade Pool* was started, Team 17 were pondering over the idea of sampling a real pub atmosphere which was a cool idea, but unfortunately it was unusable.

Despite the lack of this pub atmosphere, the samples of the balls clacking together are very clear and sound rather good. On the AGA chipset machines you can even hear the balls going into the pockets and then into the actual Pool table.

Apart from the samples, there isn't a lot more sound in *Arcade Pool* except the title music. This wonderful piece has obviously been played on a honky-tonk piano and could quite easily be mistaken for the theme music from *Bullseye*.

70%

GRAPHICS

Arcade Pool has been in development for well over two years and that's an incredibly long time for a budget game. The time was obviously spent on making sure the game was as realistic as possible and to achieve this the graphics had to be as close to the real thing as possible.

Unlike *Archer's Pool*, which can be viewed from a whole range of angles, the action in Team 17's pot-'em-up can only be observed from one position, which is directly above the table.

The balls are superb and skim across the table just like their real-life counterparts. The actual table is very basic, but exactly how hi-tech do you need it to be?

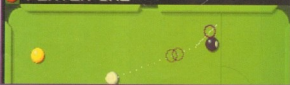
The rest of the screen is made up of icons, a power indicator, a spin selector and a graphic that displays the number of the ball when you move your cursor over it.

Owners of either the A1200 or the A4000 will find that *Arcade Pool* auto-detects the AGA chipset and the graphic and sound effects suitably enhance those machines. Another improvement you will notice is that the game runs a lot quicker and smoother on the AGA chipset machines.

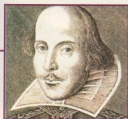
75%



PLAYER ONE



With just the black ball to slam into the pocket it looks like I have triumphed over the computer, but then again...



I learned it in England,
where indeed they are
most potent in potting
Othello, William
Shakespeare



ADDITIONAL INFO

The game of Pool was derived from billiards and is played in many different forms. Originally popular in the USA, it is now also played in Europe.

USA Pool is played on a blue baize table with balls of different colours, each of which is numbered.

The neutral ball (black) is the number eight ball.

The most popular form of Pool is eight-ball in which players have to sink all their own balls before his/her opponent, and then must sink the eight-ball to win the game.

The UK game is very similar to the USA version, with the only differences being the colour of the table (green) and balls (red and yellow).



Speed Pool is just one of the many game styles in Arcade Pool and one of the most addictive to boot



You can select either the UK or USA game, but there aren't many differences between the two



There are several computer opponents to play against if you can't find a friend

Pool

Team 17 are back with an accurate and fun reproduction of everyone's favourite pub game. Jonathan Maddock racks 'em up, grabs his cue, chalks his tip and gets ready to break off into Pool heaven...

Publisher: Team 17
Developer: In-house
Disks: 1
Price: £3.99
Genre: Sports
Hard disk install: No
Control System: Mouse
Supports: A500, A500, A1200, A4000
Recommend: 88000

OPINION

80%

AMIGA
GOLD
AWARD

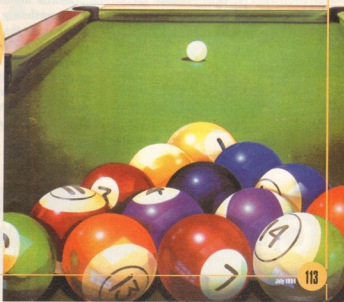
Arcade Pool can now be added to the list of Team 17 budget successes. The game may have very nice graphics, but it's in the playability department where it excels. The game controls are so easy to use that even the smallest child can quite happily pot his/her balls into the pockets.

There are so many different game styles that you'd be hard pressed to become bored with this piece of software. My personal favourite is speed Pool where you have to pot every single ball as fast as you can. This game style is also perfect for sharpening up your potting skills.

Arcade Pool, as with most Team 17 products, has that high addiction factor and I don't think a day has gone by since it came into the office that I haven't played it.

For just under a tenner it is an amazing bargain, especially when you consider that it has actually been in development longer than most full-price games.

It doesn't quite deserve the platinum award, but for snooker and pool fans this is a must. Purists will obviously still love Jimmy White's Whirlwind Snooker and Archer Maclean's Pool, but Arcade Pool is a perfect complement to both of these games.





KICK

you
know
it's...



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PC COMPATIBLES



OUT OF T



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KICK OFF 3



the Brazilian **Playmakers** to split the opposition with pinpoint passes or the German **Sweeper** to build from the back. Play the ball to the dashing full backs from Cameroon or release the flying Dutch **Wingers**.



PC COMPATIBLES

KICK OFF 3 is packed full of dynamic features that set it apart from any other football game.

Over 2000 frames of animation for smooth, fast flowing International action and multi directional pitch scrolling. Thirty different **SET PLAYS** for corners and free kicks give the most dramatic dead ball situations ever. A practice mode allows you to specialise dribbling, overhead



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kickin'

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ANCO

Thalion are back with another jaunt featuring precious stones of an amber nature. But will it prove to be the classic many role-playing fans expect? Simon Clays investigates

If you like your RPGs in the classic vein, then Ambermoon could well be the title you've been itching for. Those of you who have buckled their swash before will no doubt remember Amberstar.

INTRODUCTION

Following rave reviews and considerable critical acclaim, the German programmers decided to write a sequel. Now, some two years on, Ambermoon's programmers claim that it's a bigger, better, more attractive proposition altogether.



The 2D overhead view

The game also uses a texture mapped 3D view



In the house of the trainers your characters can improve their fighting skills



The character bar indicates what condition your team are in

Amber

STORYLINE

Twenty years after successfully retrieving the Amberstar – which was no easy task as its 13 segments had been spread far and wide – the young adventurer who retrieved it finally settled down.

Marriage followed and soon after a child was born. This process was repeated, with the granddaughter moving to the largest town in Lyramon, Twinlake.

But, disaster was to follow. Marmion, the god of chaos, threatened to break free. His magic was still strong and for many weeks the earth spewed fire and shook violently as tremor after tremor erupted throughout the land.

Through great personal danger, the hero of Amberstar finds his daughter and is able to save her from certain death. The same cannot be said for Lyramon. Its splendour is reduced to a group of dust darkened islands, whose towns have been flattened.

The adventure commences some years after this event, as civilization is gradually returning to a state of normality. Our hero of yesteryear has reached the ripe old age of 80 and is bedridden.

On the brink of death, he asks for his grandson, and sends him on a mission to discover why Lyramon is under a fresh threat.

Publisher: Taito
Developer: In house
Units: 9
Price: £24.99
Genre: Role-play/adventure
Hard disk install: Yes
Control options: Mouse
Supports: 16MB/1MB/125MB/14MB
Recommend: 68000 upwards (16829 already)



moon

SOUND

Nothing original really. The tunes that accompany you through your day to day adventuring are text book RPG rustic ditties. Okay for half an hour, but any longer leaves you having hallucinatory visions of Roger Moore as Ivanhoe.

That aside, during combat there's a nice little tune that would feel very much at home accompanying a heraldic jousting tournament. It also features some very effective sword samples that add a good measure of atmosphere.

OPINION

81%

To say that Ambergmoon is large, is an understatement. The programming team reckon that with constant play you might well complete the game in three months – that's at best, and would probably only apply to adventurers who took up the challenge of Ambergmoon.

Ambergmoon has just about every facet you could wish for from a role-playing game. The play area is vast and the textured town environments are particularly well implemented.

The combat is both accurate and easy to use, while providing the user with a very realistic simulation. Played in attack rounds, your team can move into formations

GRAPHICS

Ambergmoon features some of the most visually pleasing graphics to come from this type of title. In essence, the game features two entirely separate graphical styles.

The first is the traditional RPG 3D first-person perspective approach. However, Ambergmoon differs in one major way. Unlike most titles of this ilk which look 3D, but don't really allow any real dimensional movement, Ambergmoon lets you move freely in a "virtually" 3D manner.

I use the word "virtually" because, while you can direct your party into textured walls, you can't look up or down. The 3D style that's been employed is very effective. The towns and buildings look extremely realistic, even having depth of field. The same can be said of the characters that you interact with on your journeys around the land of Lyrannon.

Some of the locations are used to link one 3D area to another. In many cases a building such as "ye olde shoppe" might have a cellar which would have a 3D section below it.

When you indulge in combat, the graphic style alters once more. While displayed in 3D, the fighting features animations. For example, when you cast a spell the screen animates it and displays the outcome.

While traditional in its style, Ambergmoon's graphics are of a high quality, and attention and thought have been put into their implementation.

77%

The combat screen in all its glory



There are so many locations in Ambergmoon that it'll take months to complete



tions (so protecting the weaker team members), advance as a unit and fight, all from one icon box.

In many ways Ambergmoon is one of the best adventure games to emerge on the Amiga. Its greatest asset is its realism.

The programmers have managed to allow characters to tire from staying awake overnight, make attacks more likely and prevalent at night, and have even managed to reduce vision.

Really, there's so much to Ambergmoon that you could go on forever discussing its virtues. The bottom line is that it's a very competent title. Its plot unfolds in a manner that keeps the player continually

involved with your character, hopefully maturing as you progress.

The only little niggle I found with combat was that at first it's a little boring. Trying to defeat three bandits with the cutlery from a neighbours house was about as effective as trying to stab them to death with a damp fishfinger.

It must be said that once you progress from Captain Birdseye's limp thing on to a short sword or axe, then combat becomes much more rewarding.

If you don't possess a hard drive, Ambergmoon will probably drive you insane through disk swapping. That aside, Ambergmoon is a classy romp in times of old, and a must for lovers of hacking and slaying.

ADDITIONAL INFO



Ambergmoon has a strong magical element within it and features characters that would win any stereotypical wizard fashion show. But, clichés aside, what were the genuine articles like? Well for one, white was the proper colour of a robe as opposed to the black robes of fairy tales.

Cornelius Agrippa, the German scholar and writer of the celebrated book Occult Philosophy for 16th century magicians, said that the wizard should dress in a gown of the finest linen, covering his body from head to toe.

It was to be bound only by a linen girdle and remain free of buttons and buckles which may interfere with supernatural energy.

The next task was to forge a sword and dagger. This was conducted when the moon was rising in Jupiter's sphere. Then the mage would burn the incense of Ambergmoon, saffron, aloe wood, cedar and lapis lazuli, with peacocks' feathers.

Only then would the mage begin the construction of his wand. A complicated process, the mage would cut a solitary stem from a bush that had never fruited.

Then, on the first night of a new moon, an hour before dawn, the magician would dip his knife in blood. With a single stroke of his dagger, he would peel the bark back in the first rays of the reborn sun.

While most of these practises have fallen by the wayside, with practitioners now only frowned upon and looked at as cranks by modern society, many of the icons that remain in modern religion find their roots in paganism and magic.

The church has probably had a greater effect on arcane arts than any other body. They persecuted, slandered them as satanists, and murdered followers because of the church's fear and ignorance of esoteric knowledge.

This Summer the World Cup is taking place in the United States and there is a fair amount of merchandise and promotion to go along with the international football event. Part of that merchandise is the computer game and this year's batch of releases is bigger than ever before.

There are a number of major software houses literally fighting a World Cup war, all vying to sell their game to you, the games-buying public.

Which game do you buy though? Do you wait for the first game to get a good review or do you wait months until every football game has been released and then pick the best one? The decision is entirely down to you, but I

don't envy your predicament.

The first World Cup football game out of the starting blocks is Sierra Soccer. Not unsurprisingly, the game has been created by Sierra On-line and it features 24 teams and their battle to win the greatest prize in World football.

Sierra On-line haven't exactly been renowned for their prowess in the football game department, in fact I think this is one of their only games that isn't a graphic adventure.

The release of Sierra Soccer is a big brave step for the company that brought you the highly successful King's Quest and Leisure Suit Larry series.

INTRODUCTION



Choose your team from 24 of the best nations in the competition and, err, you can also pick England even though they didn't make it



Via the replay function and the function keys you can watch your goals again and again

ADDITIONAL INFO

England haven't qualified for the 1994 World Cup, but they've still been included in Sierra Soccer, so English fans can pretend that they did. Hopefully England, now with new manager, can bring back the glory days of 1966.

In the final at Wembley Stadium, the red-shirted England, managed by Alf Ramsey and captained by West Ham's Bobby Moore, beat the superb West German team 4-2 in extra time.

The Germans took an early lead in the final, but Geoff Hurst equalised and then his West Ham colleague Martin Peters put England ahead, only to see Germany snatch a scrambled goal on the stroke of full time.

Extra time was frenetic until Hurst slammed a shot against the underside of the crossbar, the ball bounced down over the goal line (or as Germany believed on to it) and the goal was awarded.

In the dying seconds, Hurst completed his hat-trick to put the game beyond the Germans and seal England's very first and so far, only World Cup win.

The historic team for that day, July 30 1966, was Banks, Cohen, Wilson, Stiles, J Charlton, Moore, Ball, R Charlton, Hurst, Hunt and Peters.



Sierra

Some people think football is a matter of life and death... I can assure them it is much more serious than that

Bill Shankly (1914-81)

The first in a long line of World Cup football games is here. Jonathan Maddock laces up his boots and shoots for goal in Sierra's latest software offering



The referee gets out his cards and lucky for that player it's only yellow. Next time it'll be red!

GRAPHICS

One of the things that Sierra Soccer has got going for it is the angle from which you view the game. Although it's been done before in products such as Striker, the sprites are a lot smaller giving you a bigger perspective on the actual game in hand.

The 3D angle looks as though it might be confusing. For instance, due to perspective, the goals at the top of the screen look a lot smaller than the ones found at the bottom, but they are proportionally the same size.

Although it's quite strange to get used to at first, you

soon forget about the 3D angle and concentrate on playing the actual game.

The game sprites aren't quite as cartoon-like as those found in Sensible Soccer and perhaps aren't as realistic as the ones in Man Utd Premier League Champions, but they are adequate enough and have a style of their own.

There are some nice animated features to be found in Sierra Soccer such as the referee who brandishes a yellow/red card or blows his whistle whenever necessary.

Even when a player is injured the physio runs on the pitch and signals for a stretcher. It's these little touches that make the game feel much more complete than some of its competitors.

70%

FLASHBACK

Obviously I've got to name Sensible Soccer and Goal as football games that must remain firmly in your games collection until you die. Sensible Soccer may not be top-heavy on realism with its cartoon-like graphics, but it's got it where it counts in the playability and addiction stakes.

Goal is slightly more realistic and was, for many, the successor to Kick Off 2. The introduction of back heels and overhead kicks were nice touches, but it still reigned supreme for sheer enjoyment and playability.

Before you get your mitts on a "new" World Cup football game, make sure you've got copies of Sensible and Goal because they still rule as the football games to beat.



I don't like that!
Venturing into the
quarter final and I've
already gone a goal
down. Time to make a
substitution I think!

SOUND

Not a lot to sing or dance to, but the tune that kicks off the game is more than adequate. Actual in-game sound effects are few and far between, as with most games of this genre.

Plenty of crowd noise though, with selected shouts (when a goal is scored) and boos (when a player is sent off playing starring roles).

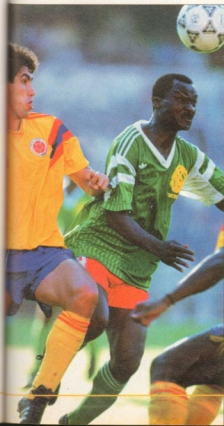
There's a smattering of digitised speech when a free-kick, corner or penalty is awarded, but it's not exactly going to amaze or astound you.

60%



The main option
screen, where
among other things
you can decide
what type of game
you want to play

Soccer



Publisher: Sierra
Developer: In-house
Units: 1
Price: £24.99
Genre: Sports
Hard disk needed: No
Control Scheme: Joystick
Supports: A380/4860/4860/4860
Recommendation: 80/80



You gain a free kick on the edge of the area. A curling shot into the top left corner of the net is in order here

OPINION 80%

Sierra have taken some of the best aspects from previous football games, invented some new features of their own and incorporated them into a highly playable and enjoyable soccer game.

It doesn't quite have the same stature of games like Sensible and Goal, but that's only because they were firmly established a couple of years ago and thus, any soccer game coming out will be instantly compared to them.

The actual World Cup tournament is quite hard to win, so Sierra Soccer will keep you entertained for some time. Although it's fun to play against the computer, finding a chum will reap rewards because two-player mode is where Sierra Soccer really shines.

The actual standard of goals you score is very high - none of this tap-in rubbish though, I'm talking about 25 yard curlers in to the top corner of the net. As soon as you score one of these stunners, you just have to reach for the replay option and watch it over and over in slow motion.

OK, Sierra Soccer might not be as good as Sensible or Goal and it may have a lot of opposition from other soccer releases (Kick Off 3, Sensible 2, etc) in the future, but as a stand-alone game it works very well.

At the end of the day I guess it's down to you, the games-buyer and whether you've got enough spare cash to buy it now or wait and see what other football games there are on the horizon.

Sierra Soccer is not the ultimate football purchase but it is, on the whole, a damn fine game and if you can find a friend to regularly play against I would recommend it.

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INTRODUCTION

With the advent of the the A1200 and AGA graphics, we all looked forward to the appearance of 256 colour games such as those on the PC, and though several excellent examples now exist, there have been few fully AGA flight sims until now.

Digital's Tornado A1200 goes into uncharted airspace with a processor-intensive game using more colours than most, so can they pull it off?

This is the big one, and A1200 owners will find the game's graphics improved in many places over what was originally a very good-looking game. From the opening static screens to in-flight visuals, almost the whole package has been reworked.

Missile screens now have full digitised images behind them and the sometimes scratchy photos used to illustrate the first game have been replaced or boosted to 256-colour greyscales, with a corresponding improvement in atmospherics.

In some places where graphics were a little sparse, Digital have tarted things up with a few scanned images, and the preview shots of the aircraft portrayed in the game are all in at least 256 colours. The whole thing looks rather scrumptious.

In flight, the most immediate improvement has to be the sky, which now has a graduated look as it drops towards the horizon. During night flights, this is particularly effective and goes a long way to convincing the player that this is a PC game.

Cockpit graphics have also seen a big improvement, and are now much smoother. An increase in the number of colours doesn't automatically mean more and better detail, but the look of the new instrument panel is fairly cool.

Other big improvements include the clouds, which actually work like water vapour in this release. In other words, when moving through a cloud, visibility gradually drops to nil, unlike the bright sunshine one minute, total white-out the next approach of the original game.

Texture mapping and shading are tedious and slow processes which only the fastest PCs can manage with any degree of comfort, and expecting a 68020 to cope would have been barney.

The result is that the pilot's eye-view of the ground hasn't changed, but then it was highly detailed to begin with, and perfectly adequate for the job, so why whinge about a bit of shading?



New images for the static screens brighten things up a bit



The navigator's cockpit has been retouched with a few extra colours

SOUND

Minor tweaks to the game's sound include the removal of a few glitches and the addition of a helicopter sound sample when viewing a chopper on drone or aircraft preview screens.

In addition, the sound of the Tornado's engines seems to have been improved, all of which is commendable as this game was expected to be just an AGA graphics upgrade.

60%

OPINION

80%

As a new version of an existing game, Tornado A1200 has a clear advantage over the older version in its graphics and in the fact – thank you, Digital – that it is in PAL screen format unlike the original's NTSC. Speed can be a little slower because of the extra colours and graphical improvements, but with the medium detail levels Tornado is still very playable on a standard A1200.

Adding a combined RAM and FPU upgrade will speed things up quite a bit, and A4000 owners will find the game even better, though not as fast as the original on a 68030 or 68040 machine.

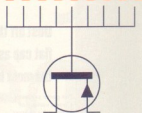
The original, rated before the System scoring came into being, was given a touch over eighty per cent, and even with the new stricter regime, Tornado is one of the few games still worth this high score.



Digital Integration's acclaimed flight sim now has 256-colour clothes, but is it a better game? Stevie Kennedy takes to the skies

Tornado A1200

Publisher: Digital Integration
Developer: Ib bases
Disk: 5
Price: £24.99
Genre: Flight sim
Hard disk install: Yes
Control system: Mouse, keyboard, joystick
Supports: A1200/A4000
Recommended: 68030, fast RAM





The game of Rugby has had a quiet time of it in game terms when compared to football, with there having been only a couple of attempts at what is one of the most popular ball sports in the world.

Audiogenics' last foray, International Rugby, concentrated on the amateur Union game, and fans of the professional sport have waited a long time for the

appearance of the likes of Wigan and St. Helens on the small screen.

Finally, though, all you armchair try scorers can mix it with Jonathan Davies and company for the coveted Challenge Cup. Let's face facts - it's a lot less painful than going up against a load of six footers with more muscles than a sea food stand on Clacton pier.

INTRODUCTION

Wembley

Dust off the whippet and spruce up your flat cap as Stevie Kennedy takes on one of the most bruising sports ever invented

The game presents a good variety of options for control of the rules and the pitch

SOUND

Given that this game is officially licenced by Wembley stadium you would have expected a few "Wem-be-lee-ee-ee" chants from the crowd, but although they are absent there's still a decent attempt at crowd noises during play. The roar of the assembled fans is no better or worse than most soccer games, and there's a certain amount of reaction to what goes on during the match.

When a player breaks away down the wing, a scrum is called, or play nears the try line, the crowd noise increases in volume, and there are the usual cheers when points are scored. That's about it, except for the grunts when a tackle goes in and a vaguely annoying theme tune which can thankfully be turned off.

50%



Team selection is important if you have a favourite squad and a star player

FLASHBACK

The only game worth comparing to Wembley Rugby League is Audiogenics' original, International Rugby, which was based on the amateur Rugby Union game. Despite using the same play system, several of the rules of the sport were not implemented, and resulted in mixed reviews.

Wembley Rugby League is a huge improvement over its predecessor, and fans of the Union game are advised to badger Audiogenics for an updated version of the original game.

GRAPHICS

Static screens used for the game options before play are quite colourful and well drawn, but in other areas Wembley Rugby League falls down a bit.

The sprites used for the players are okay, and every team has accurate uniforms, but movement is jerky and a bit of shading here and there would have made a world of difference. In general, what's missing is that extra touch which lifts average graphics beyond the merely functional.

It is possible to switch from 2D to 3D using the Escape key, but this seems to make very little differ-

ence apart from a few green stripes across the pitch. Blimp view, though, is far better and gives the player a much wider view of what's going on.

Most of the team can be seen from this view and it's a lot easier to spot potential holes in the opposition's defensive line. In addition, there's less confusion as to where the ball is and where it's actually going.

On the whole, the graphics are good enough for the demands of the simulation, but they don't really rise much above the average.

53%



Kick off is all-important, because a bad kick will land you in trouble straight away

ADDITIONAL INFO

Rugby League was formed as a breakaway movement in 1895 when a pay dispute prompted many northern clubs to form the Northern Union, an organisation which later evolved into the modern League system. In 1906, the number of players in a team was reduced from 15 to 13 to give the game a more open running style.

Today's popular Challenge Cup competition was born in 1975, when the top eight clubs were entered in a knockout competition for the biggest prize in Rugby League. Wigan RLFC have, in recent years, been the most dominant team, winning everything in sight, and have notched up seven straight Challenge Cup victories.



Make six tackles to win the ball back, though rucking, mauling, and ear-biting are not included

Publisher: Audiogenics
Developer: In-house
Disks: 1
Price: £25.99
Genre: Sports sim
Hard disk install: No
Control system: Joystick
Supports: All Amigas
Recommended: 68000 upward



SIMULATION

Player control is simple, with the eight joystick directions determining the direction in which players run and the fire button being used for passing or kicking. Firing to the left or right passes the ball, and the three forward directions will result in a kick.

The strength of a kick or pass can be increased by holding the button down for longer, which is fine as far as it goes, but it makes longer passes difficult because you are usually tackled while still holding the button.

Scrum, when they happen, can be won by furiously wagging the stick to push the other pack backwards, and before each scrum is taken a selection of eight special moves pops up, from which you can select one to force a gap in the wall of bodies before you.

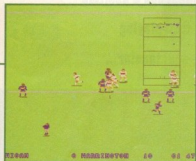
Only Rugby fans will be able to make sense of these special plays to begin with, but the fact that they are there gives the gameplay more depth. They come in very handy as you play the game more, because, unlike International Rugby, it is almost impossible in this game to just dodge a tackle and run all the way upfield.

Spot kicks such as penalties and kick offs are also easy. Just click once to set direction, once more for strength, and the ball is booted. Mastering kicks is very important to assure good field position. Hit them too hard and you give the opposition a drop out, but get it just right and you can pin the other team close to their own try line.

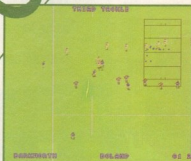
Despite the jerkiness of play, Audiogenics have managed to capture most of the mechanics of Rugby League, and there are enough play options to keep sports fans happy.

62%

Rugby League



Here we go! Here we go! Trys are difficult to score unless you happen to be the computer player



Blimp view gives a much clearer overall picture and is a handy way to spot gaps in the defence

OPINION 58%

Wembley Rugby League is welcome as the first serious attempt to put one of the north of England's most successful sports on the Amiga, but with a little extra effort here and there it could have been a lot better.

Speed of play is acceptable, if not blistering, and the graphics do the job well enough, but compared to the royalty treatment dished out to most soccer games, this effort can at times have a rather basic look and feel.

On a positive note, the pre-game options are excellent, and the player can

elect to alter a long list of factors affecting play. Wind can be set to three strengths or just turned off, there are five different pitch types including snowy and soggy, and some of the most annoying rugby rules can be turned off.

The knock-on rule is a real pain which results in mysterious penalties. You're not told during the game what a penalty has been awarded for, so turning off this and the offside rule makes for a more flowing game with less swearing.

With its trueness to the rules of the sport and major improvements over existing Rugby games, Wembley Rugby League should do very well among the legions of fans who follow what is still an under-exposed sport.

M

ario and Sonic have dominated the world console scene for the last few years and anyone who thinks good platform games can only be found on the Sega or Nintendo machine is either stupid or naive, or even both.

One of the world's biggest gaming stars is James Pond and although this fishy super hero has made an appearance on no less than 14 formats, his first starring role was on the Amiga.

As well as being a terrific game character, James Pond has had the added advantage of starring in games of superb quality. Both of Pond's adventures have had an incredibly high level of addiction, making it impossible for gamers to put their joysticks down.

Robocod, the second Pond adventure, was perhaps one of, if not the best looking platformer of its era. Millennium have now got a third dose of secret agent platform antics on the way and it's been claimed that this Pond extravaganza is bigger and better than the previous two games put together.

INTRODUCTION



STORYLINE

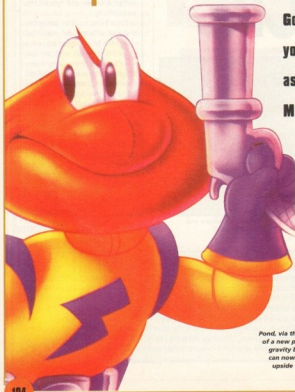
Dr Maybe, following his defeat in Robocod, left the North Pole in search of revenge. Within the hour the evil Doctor has hatched a brand new scheming and devastating plan for world domination.

The idea is to take over the moon which is, of course, made of cheese. A well placed ad in the local Rat City newspaper gave Maybe a new band of vermin to control.

Shooting off to the moon with his army of rats, Dr Maybe was soon transporting the freshly mined cheese back to earth and dominating the world cheese markets.

With the world once again at the Doctors mercy, there was nothing else to do but call in the world's fishiest secret agent to defeat his evil adversary and restore peace back to the galaxy.

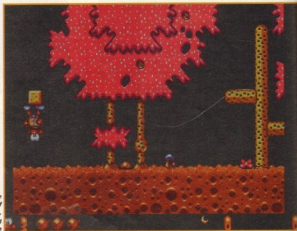
James Pond 3 - Operation Starfish



Good Cod! Perch on your seats and plaice yourself in Jonathan Maddock's position as he has a whale of a time playing Millennium's platform spectacular...



Pond, via the use of a new pair of gravity boots, can now hang upside down



Publisher: Millennium
Developer: In-house
Boxes: 3
Price: £29.99
Genre: Platform
New disk inside: No
Control System: Joystick
Supports: A1200/A600
Recommended: 68020



GRAPHICS

The adventures of James Pond have always had a cartoon feel to them, but in this third instalment this style has been emphasised even more. The graphic artists have concentrated a lot more on the animation and look of the characters.

The backgrounds in Robocod were bright and colourful, but for the third part of the Pond series they've been toned down to a simple black background with a few stars dotted around the screen for good measure.

This simple look makes the characters a lot more prominent and as a result the game, as a whole, is a lot more pleasing to the eye.

James Pond as an actual character has been improved dramatically and is now capable of doing a lot more. The enemies look better than they did in the two previous Pond games and it's obvious that a lot of work has gone into designing them.

Each section in Pond 3 has a different theme and the background graphics change accordingly as you go from level to level. One minute you're running around Custardy plains and the next you're stuck in a swamp, but no matter what section you're in the graphics look absolutely superb.

Millennium's fishy adventure is one of the best looking platformers I've seen since the stylised beauty of Flashback and it could easily compete with, and possibly beat, it's console counterparts.

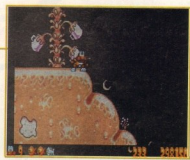
85%



James must smash one of Maybe's communication beacons before he can move on to the next level



Between levels Pond can select and revisit locations by using this Mario style map



The graphics in pond are big, bold and beautiful, making the game a lot more pleasing to the eye

FLASHBACK

The first game that immediately springs to mind is, in fact, Pond 3's predecessor, Robocod. This brilliant platformer had some of the best graphics and sound of that gaming era and more importantly, had an absolute wealth of playability and addiction contained within it.

There are about a billion other platformers I could mention when asked for comparisons to Pond 3 and words like Zool, Rainbow Islands, Woody's World, Superfrog, Soccer Kid, Chuck Rock, Magic Pockets and New Zealand Story just roll of the tongue, proving that Millennium's game might be a good platform romp, but in terms of originality it's nothing special.



Just one of the many enemies that James is up against include members of Dr Maybe's army of rats

SOUND

The tunes found in Pond 3 are very similar to those found in Robocod. For those first-time Pond users, the music in Robocod basically ripped off the James Bond theme, but was a lot more bouncy. On the sound-effects front, there are a few select noises here and there, but nothing to scream and shout about. You do get a small snippet of a sound sample before you start each level, when Pond's boss, F, tells Pond to "Get ready" or announces that "We're depending on you Pond".

I, for one, was a bit disappointed that there weren't more sound effects, but thanks to the superb tunes you forget all about this little discrepancy.

75%

OPINION

85%

Highly original it might not be, but fans of the previous games and platform lovers will be absolutely besotted with the third instalment of James Pond.

The game contains over 111 massive levels. It's one of the harder platformers I've had the pleasure of playing and I guarantee that it will take even the most experienced gamer a long time to complete.

The major difference between Robocod and its successor is that Pond 3 contains a high puzzle element to it and is not a case of simply getting to the other side of the screen to the exit anymore.

The game also has a brand new character in Finneus Frog, one of Pond's fellow

secret agents. This adds a whole new dimension to the Pond series and you literally get two games for the price of one.

Graphics-wise, I can't fault James Pond 3 as it looks exquisite. Although the graphics are brilliant, the game really shines in the playability and addiction stakes. I, for one, haven't been able to put it down since it came into the office.

Don't forget that James Pond 3 is for the A1200 and CD32 only, and that's simply because the game is far too big to fit onto the A500/A600.

For sheer enjoyment and lastability you'd have to go far to find a better platform game than Millennium's tasty third fishy adventure. If you're yearning for some fast, frenetic platform jumping fun then I suggest you splash your cash on James Pond 3. You will not regret it!



Like *Avion*, this action animation is highly impressive visually even if it is a little unclear in showing exactly what is going on

system essentials

This month, **System** inspects two reissued titles for the CD32 – **Gunship 2000** and **Chuck Rock II**. Adam Phillips boots them up for a close-up view of the prospective action...

One of the biggest questions in the office was how on earth all the controls for flying a helicopter could be incorporated on the minimal amount of buttons available on the joystick. Microprose have bypassed the problems by creating a series of menus that can be accessed while the game is paused.

Maps can be viewed and waypoints set, ground detail altered to give maximum speed, differing views selected and time can be accelerated for those long trips to reach certain mission destinations.

Although a little fiddly at first, weapon selection and engine control become second nature after a time, to leave the player able to focus on the gameplay of which there is plenty.



Gunship 2000

While the in-game presentation of Microprose's latest cannot possibly hope to see off the big boys in the graphics stakes, when it comes to out and out gameplay, the all important ingredient that stands head and shoulders above swanky images, even Silicon Graphics would start to sweat. This title is a seriously addictive and challenging slice of strategic action.

Let's get one fact clear – this version of the classic A500 game is hardly different to the original. It's a little faster and smoother but not bigger. The voice samples are crisper and a highly attractive introduction animation has been stuck on the front end to somehow weakly qualify it as a CD title.

Does it matter though? Not even slightly – this has and always will be one of the best releases for the Amiga range, and after the initial disappointment of nothing particularly new on the horizon, the intense gameplay soon makes you forget any regrets.

After the intro has flashed its ray-traced delights, the player is presented with a control room where they can either take part in training missions or press ahead with the two theatres of war available – Central Europe or the Persian Gulf. Choose a pilot and then it's into the thick of the action. One mission briefing later and you're out on the pad waiting for take-off.

Each campaign is split into dozens of missions. Destroying enemy platoons, wiping out runways, taking out oil refineries, radar stations and scout sites are the main staple diet of the warmongering helicopter pilot, and with a large array of weaponry on offer life is made a little easier for yourself but not the enemy.

The basic principle behind *Gunship 2000* is to ascend the ranks and gain medals galore. Each mission has two goals – the primary and the secondary.

It's not strictly necessary to do the second but, if you want to look like a viable candidate for promotion, com-



A missile impacts with its target. UN-1 Saddam: 0. Or is it?...

pleting both guarantees a commendation and firm pat on the back. Earn enough accolades and you'll be put in charge of up to five helicopters per mission – a worthy reward for hard work in the line of duty.

The graphics obviously play a large part in convincing players to suspend their disbelief and be absorbed into the scenario. While *Gunship 2000* may not look like TFX, the polygon graphics depicting valleys, mountain, roads and trees are effective and move smoothly enough to be convincing.

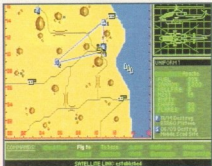
The differing views of your craft, and the option to follow a launched missile directly from behind and see it impact with its doomed target works well, but it would have aided realism to see some kind of shadow cast by the airborne vehicles.

The sounds are excellent with clear samples of missile warnings and the explosions are accompanied by healthy noises of destruction.

As the first flight simulation released on the CD32, this is hardly a bold step forward for CD-ROM and how it is perceived by the game playing public, but as a tough, strategic helicopter title, this is as good as it gets on the Amiga and is well worth spending many hours airborne playing it.



77%



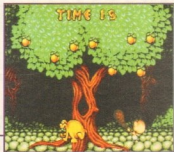
Plot your waypoints on the map and use the time accelerator to get there in a hurry

Publisher: Microprose	Developer: In-house	Clicks: 1	Price: £24.95	Genre: Simulation	Hard disk install: N/A	Control system: Joystick	Supports: CD32	Recommended: N/A
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Guide Chuck Rock Junior over the many landscapes to rescue his dad.



Knock the apples from the tree for the dog to eat, in one of the three sub-games featured in Chuck Rock II



The end-of-level-bosses are impressive with their massive limbs and heads



Publisher: Core Design
Developer: Io-Inter
Blocks: 1
Price: £29.99
Genre: Platform
Hard disk install: N/A
Control system: Control pad
Supports: CD32
Recommended: N/A



Chuck Rock II

Chuck Rock, the original rock basher on the Amiga, was a huge hit on its release and was subsequently converted across to other formats because of its instant appeal. Chuck Rock II seemed a logical, cash-earning idea and continues in a similar vein of presentation and game style.

Featuring the club-swinging love child of Mr and Mrs Chuck Rock, the plot revolves around the success of Mr Rock with his car building and subsequent kidnapping by failed arch rival automobile manufacturer, Brick Jagger.

The player controls Junior's attempts to rescue his father over a series of platform-based levels. The title begins with a highly impressive cartoon sequence that echoes back to the days of the Flintstones with resounding accuracy.

Core Design seem to be one of the few companies that actually know how to construct a highly effective, imaginative and well told animation.

After seeing the story, it certainly whets the appetite for the following game, as Junior smashes his way out of his cot with a toy club to embark on the arduous quest, while his mother runs round the room screaming (in true sexual stereotyping form).

The platform action is based over six different levels with numerous zones and there are also three sub-games for extra gaming spice. Guide Junior through the various obstacles, smashing dinosaurs and natives round the head, destroying rock walls for bonus points and picking up life-giving baby milk.

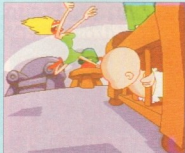
Starting in the Stoneage suburbs, your travels take you across jungles and ocean-dwelling dinosaurs to murky waterfalls with sea-spitting octopuses.

The attention to detail is very high with some refreshing novelties, such as being able to ride on the backs of freed dinosaurs and even large crane-like

birds. If you come across a gaping hole with spikes at the bottom and no apparent way of getting across, look for a rock that can be belted across with your club to act as a bridge, or whack a lazy lizard so that its neck sticks out across the abyss.

One of the minor, but extremely handy and thoughtful inclusions is Junior's loss-of-life routine. Instead of dying and restarting straight away, the player is able to lie low wailing his eyes out until, with the appropriate press of a button, he can be reactivated after the danger has long since waddled away. It may sound small but it shows that thought has gone in to the game design.

The sub-games are an interesting addition to the action as well. In the first one, ride on the back of what appears to be a dog and knock apples from a tree. The canine must then eat them all before the timer runs out. Graphics and sound are up to the



A clip from the excellent animation at the beginning of the game

usual high standards of most Core games, with an impressive array of tunes and colours adding an appealing edge to the title.

The end of level dinosaurs are superb looking and, coupled with the lush parallax scrolling, make the title look as if it just rolled off a Super Nintendo or Mega Drive. That, alas, is where Chuck Rock II's main weakness lies.

With the likes of Sonic and Mario continuing to hold the crown of platforming excellence, the likes of Junior and his amazingly versatile club pale in comparison.

While attention to detail is extremely high, there is still a feeling of repetition running through the game – the same ideas crop up again and again but in different guises and the lack of any interesting power ups or extra features relegate looking for secret levels to that of a secondary concern.

From what I've played, there was nothing that made me leap up from my seat in genuine excitement and want to see more. The novelties mentioned earlier are just that – they're fun while they last but you don't come away feeling as if you stumbled across anything particularly new.

Needless to say, while Chuck Rock II may not have the intangible addictiveness of its rivals, it's still a fun and polished platformer that offers a healthy fix for any platform fanatic.

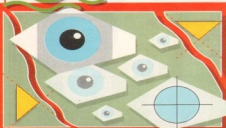
On the other hand, if you're looking for a platformer that can sell the CD32 in bucket-loads the way Sonic did for the Sega machine, then this simply isn't it. Roll on Chuck Rock III with a strong female lead...

71%



00000

system preview



From the makers of *Laser Squad* comes a game where strategy and arcade meet in the middle to produce what is potentially a classic. Adam Phillips reports...

The earth is in trouble. The year is 1999. Over the past few months, the sightings of alien space craft have risen at an alarming rate. All attempts at communication with the aliens have been met with bloody killings, kidnapping, terrorism and worse. Battles rage across the earth as the human race try and push the hostile invaders from the surface of the planet.

All the nations, forgetting the wars, missiles, sanctions and fear waged against each other over the last few millennia, decide to join forces and create a combat unit, XComm, to counter the extra terrestrial threat.

On first booting up, an impressive looking earth fills the screen. Clicking on one of the several icons spins the planet round and allows you to zoom in, revealing continents and city names. Establish XComm's first base and the game begins proper.

Through various menus and screens, a comprehensive network of bases can be built up around the planet. Radar, stores, research labs and other items can be made in a mini SimCity-like system - even alien autopsies can be carried out to learn about the xenomorphs differing features.

For successful gameplay, it's vital that you keep a constant vigil on the whole planet. Countries feeling hard done by, with continual alien attacks and no defense,

the ship from a distance, enter into three different modes of combat or pull away and leave it to continue its voyage unhindered.

Go in too hard and the alien spacecraft may decide to hit the hyperdrive and leave you eating its jet stream. Alternatively, it's possible to shoot the UFO down into a crash landing or, if you're exceptionally lucky, blow it to pieces.

If you have successfully managed to track the ship to its landing site, troops can be sent to intercept the aliens and



The warehouse holds a large number of aliens and brainwashed civilians - strategy is essential...

Placed in control of this elite force is you, the humble player. At your fingertips at the beginning of the game are a limited amount of soldier-carrying aircraft, a base for developing weapons, craft and other facilities and a serious amount of corporate cash donated from each country. By expanding and building multiple bases, a strong vanguard can be constructed to monitor the world's UFO affairs.

The game itself is split into two very distinct sections - a strategic global management simulator and a tactical hands-on battle field game, where you must confront the aliens at first hand with your individually controlled troops.



UFO

withdraw their funding thus making life more difficult.

When a UFO is detected entering the atmosphere, craft can be dispatched to intercept it. The action is displayed via a simple control panel that shows the distance of the spaceship from your interceptor.

With fingers crossed that the fuel won't run out, the player has a variety of choices, represented as icons, open to him - simply track



Autopsies of the enemy provide useful information

the game moves on to the second phase.

Presented in an isometric view, found in Sabre Team. The display shows the area round the flying saucer. Playing in turns, move your soldiers out of the personnel carrier, armed to the teeth with assorted weaponry and hunt down the exact location of your foe.

The object is to kill all alien life-forms and enter the ship to find relics and artefacts that can be examined later to give valuable insights into the unearthly culture.

The control system is simple enough, giving each soldier a certain amount of action points for each round. Shots can be fired, the area scanned, doors opened and closed and weapons swapped.

One of the game's strongest points is the feeling of suspense, as the aliens' whereabouts only become apparent on sight, so stealth and strategy are vital to any successful campaign.

All different terrain types are included, from the snowy plains of the Antarctic to the sprawling slopes of the Sahara. If your monitoring of enemy activity is slack, UFOs begin to invade entire cities.

With only a handful of men, you must clean out the infested areas of buildings, shops, warehouses and residences. Even the citizens of the towns can be brainwashed into working for the extra terrestrials, giving the game a true B-movie feel.

Attention to detail is high - windows can be shot through, entire walls blown apart by missiles and crates exploded with misplaced bullets. There are also different ground levels on offer - mount the stairs and you'll be shown the first floor of the building.

This mixing of gaming styles and painstaking detail has made UFO both a commercial and critical success on the PC version. The Amiga looks set to follow in its forerunner's footsteps. A classic in the making... hopefully.

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Alex Gian winds up his guide to the Amiga's integral inter-process language



Video 157

Adam Philips on how to look after that vital (and expensive) video equipment



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A closer look at Notator-X as Paul Overaa gets a bang out of bass clefs



Comms 161

Phil South wonders what sort of cars we'll be driving down the fabled information highway



Amos 163

Co-ordinates are the key to artistic accuracy for Phil South and his Amos mailbag



Publishing 165

Ben Pointer looks at ways to get the best from your fonts and your printer



Up and Running 136

Start your own magazine empire with Phil South and a model rocket club



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Steve White offers a few tips and tricks for the Shell user



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Snag up a second hand bargain in our readers' own advertising spot



A typical newsletter layout



Choosing your options is easy with PageStream

There comes a time in a man's life when his thoughts turn to publishing. Either he's always wanted to be a published writer or his work is so rubbish that nobody wants to print his stuff, so he prints it himself.

Maybe you want to make a newsletter for your local club, or do a better job of publishing an Amiga magazine than we do! Or perhaps you want to publish a magazine that nobody is doing at the moment. Some of the biggest mugs in history have started this way.

So here we have the Amiga Computing Guide to everything you ever wanted to know about personal publishing but were terrified to ask. There are basically three ways to go:

- A4 newsletter

- A4 folded newsletter/magazine
- A4 proper magazine

The first is a collection of A4 sheets all nicely photocopied and stapled at the corner. The second is basically the same, except the sheets are A3 and folded down the middle and stapled.

The third method is the same as the others but is professionally printed, not photocopied. This version could also have a colour cover, and perhaps spot colour inside. All these things can be produced on your common or garden Amiga, with certain limitations.

The first limitation is the usual with any Amiga application: memory. Yup, you'll need a 1Mb Amiga just to load most of the existing DTP programs, and certainly to rock'n'roll with Professional Page 4.x you'll have to have at least 3Mb of free RAM.

The second limitation is that you have to use a monitor, as your TV just won't cut it. Tiny text and lines will blur and fuzz all over the place.

Finally there is design sense. It's all very well to put the technology to make a DTP document into the hands of non-designers, but if you try and do fancy pants design without training it will look really rubbish, so don't even try. Instead why not follow our easy tips for design excellence? Your

basic newsletter is the easiest thing to put together. You design the pages, slap them in a photocopier and boos yer uncle. Well no. You have to think about it a little bit first.

EASY

There are reasons why people do them like this – that is single pages stapled at the corner. Either they want the mag to be easy to produce so people will be able to copy it and pass it on, they don't have access to a photocopier that produces over A4 in size, or they didn't really think about it and this was the first thing that came to mind. This is

Phil South looks into making your own magazine using the Amiga's DTP abilities.

Design excellence –

It's easy to think that just because you got yourself a little DTP program, you can produce something that looks like a cross between Mondo 2000, ID and The Face.

Well forget it, because, unless you've spent any time at design school, the chances are that what you turn out will look more like an Amateur DTP magazine.

But don't despair, because here are some helpful hints to stop your magazine turning into the design disaster from hell.

- First and foremost, start out with an idea of what you want the overall design of your magazine to look like. Find a magazine that exemplifies your idea of good design, and steal all the ideas. Oops.
- Things to look for: the use of text and pictures. How many pictures on a page? Where are they on the page? Is the text easy to read? How big are the headlines, and what font is that? And what the hell is that picture of a banana doing there?
- Use only two fonts for your text, usually a sans serif font like Helvetica or

Professional results on the Amiga needn't cost the earth

Amiga Computing
JULY 1994

not an ideal method of producing a magazine/newletter because it looks unprofessional and home made. If you want it to look nice, then the best way is to make an A4 folded.

A folded newsletter is a whole new Murphy Richards or Piranha altogether, a little recursive logic puzzle which turns previously strong men into wobbling idiots who can't make simple decisions.

Before you tap anything into the word processor or lay out a single page, you have to decide several things:

- How many pages should the magazine have?
- Do we want a coloured paper or full colour cover, or indeed are we looking at a newspaper-type thing with no cover at all?
- Is the magazine going to have illustrations or photos, and if so how are we going to get them into the Amiga? And

going to have a picture on the cover, and is the cover going to be a different colour paper to the pages inside?

In my case, I use a different colour cover for each issue and the pages are printed on white stock. This gives a good effect and is very cheap.

If you don't want to spend the extra 2p per issue to have fancy coloured paper on the cover, then you could make a newspaper-style affair, with a big headline and text on the cover, more like a conventional newsletter.

But if you want to make your publication look more like a real magazine, then you'll have to have a cover with a picture on it.

I print out the cover pictures using Art Dept Pro, using the PrePrinter saver. The reason for this is so I can get a nice half-toned result from even a 24-bit grab, which photocopies really well, and I can also crop

modrocs
The magazine of Model Rocketry - Issue 6 - Autumn 1993

World Cup
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Report and
feature trial
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The magazine of Model Rocketry - Issue 8 - Winter 1993

Dudley's
Electric
Rocket
Boosting gliders
by 400ft

Postcard
from
Libbyenne

T-shirt
Field Report

Plus much
more...

be darned

how do we get the text into the Amiga from our contributors?

- How are we going to produce the artwork for the finished magazine and how is it going to be printed?

The answer to the first question is to put you, based on how much paper you can afford to pay for. But it has to be a multiple of four, because thinking about it, if you fold a sheet of A3 paper you get four sides of A4. My own mag is about flying model rockets, and is 16 pages long.

The second question is a basic stylistic question: what do you want the mag to look like when someone picks it up. Is it

it to exactly the right size using CROP_VISUAL.

Half-tones come out really oddly with Pro Page, as they print at the highest resolution of 360dpi on my BubbleJet. This is good for text, but not for pictures, especially if you want to photograph them. Then I output the cover lines, cover logo and everything else from Pro Page and stick the picture on the page with Pritt stick.

Very low tech, eh? It's a good thing to use DTP to produce text and graphics in perfect harmony, but you should always keep in mind that it's usually better to use

the best of both worlds - the DTP world and the paste and paper one.

It's easy to tie yourself in knots with these things, trying to do everything on the computer rather than just taking the easy way out. Don't be afraid. It's generally quicker and gives better results if you just cut stuff out and stick it down, if that's what it takes. Computers are supposed to save labour, not make it.

Photos in my mag are generally grabbed from video tape as 16 colour hi-res images, using either a Rombic or Viab digitiser. These pictures are then pasted directly into the mag as IFF files.

PICTURES

I can get pictures scanned in but this is usually too much trouble. I also get pictures off BBSS, and especially nice is the CompuServe Space Forum, which has lovely pictures of rockets and space ships of all kinds, including my favourite cover star, the Space Shuttle.

There are a lot of PD pictures you could use for your magazine, but do be sure that they are PD before you use them. Another source of pictures is our old friend PhotoCD, whereby I take pics on camera and send them to Boots for addition to our PhotoCD.

Then I use the PhotoCD to feed the picture into the Amiga for conversion and printing in the mag. This is good as I don't have to shell out £500 for a scanner.

Any line illustrations can be shrunk down on the copier. Even better, produce line illustrations using Art Expression or Pro Draw, or scan in pictures with a hand scanner and trace them with the Trace program which comes with Pro Draw. This

Up and Running



gives a very smooth result and the pictures can be reproduced instantly at any size.

Getting text into the mag is easier. As long as contributors supply their text on Amiga and MS DOS disks, we're smiling. If they send Mac or PC High Density disks we are in big trouble.

This is mainly big trouble, because it means sucking up to a friend who has a PC with HD disk drives, and you know we hate to do that. Some people, no matter how many times we ask them to submit copy in ASCII text format, insist on sending it in Word Perfect format.

This is okay though, as I recently remembered that TransWrite and Article Editor have WP filters built in. It's handy to have a PD program which changes Carriage Returns and Line Feeds (CRLF) and converts between the standards used on Mac, PC and Amiga.

Finally how do you produce the "camera ready" artwork, and what the hell does "camera ready" mean? In the old days when all mags were produced using paper and paste, the pages were photographed and the photographic negatives were used to create the printing plates for the offset litho machines which printed the mag. In this sense, we are

quick and dirty guide

Futura for headlines and subheads, and a simple serif font like Times or Palatino for the main text.

I know there's a lot of flashy fonts around, but they are for big text and are to be used sparingly. Also be consistent! Use the same fonts throughout your mag, or people will get annoyed. The eye can't settle down if there's too much going on. Keep things simple and easy to read.

- You can use flashy fonts like Mazama, Tribeca and Polo for headlines and logos if you like, but keep the use to a minimum until you know what you're doing.

- Draw a little thumbnail sketch of the page layouts on paper before you commit them to the computer. Don't just wade in and start designing on the screen. It helps if you design pages to match up with facing pages, and ensure that the pictures and text look even on a two-page spread and don't clash.

- Otherwise, anything goes! Try not to go too mad with your design or you'll end up looking like an explosion in a pizza factory.

Jargon buster

A3 and A4 – Paper sizes. All A paper sizes are the same aspect ratio, but half the size of the previous one, so A0 is twice as big as A1, and A1 is twice as big as A2, A2 is twice as big as A3 and so on.

Bromide – Thin photographic paper used in image setters to print images from computers up to 2400dpi or so.

Film – Big sheets of photographic film used by image setters. See bromide. Film is used to make printing plates for printing on offset litho machines.

Flat plan – A plan of how a magazine is laid out. On smaller mags this is simply to let you see how the pages lie, where the page numbers fall and what's on them.

Halftone – A picture made up of dots which looks like grey scale from a distance but is, in fact, only black and white. This means it can be reproduced on a photocopier and retains the grey tones. The bigger the dots the better it comes out, so 300 dpi is about the limit.

Thermal Image Printer – An expensive way of getting colour postscript output onto a page and making it look better than the print you get from lesser colour printers.

Serif and Sans Serif – Serifs are the tiny crossbars you get at the ends of the strokes of letters in some type designs. Sans serif ("sans" being French for "without") fonts do not have them. There is a school of thought which says that sans serif faces are easier to read, although frankly who cares what they think? I prefer serifs, myself.

➤ producing sheets ready to be put into a photocopier.

You make your magazine using a flat plan, which is a fancy way of organising your pages into some order, and in professional mags it's how they figure out where all the colour pages go amongst the black and white ones.

CONTENTS

In my case, I have a 16 page mag, so I draw a flat plan which tells me which are facing pages and which are not, what is on each page for when I write the contents, and it gives me something to tick off as I've finished laying out a page.

When each page is laid out on Pro

page, I print them out on my handy A4 Canon Bubblelet and then stick the pages together in twos ready for printing.

This is the worst logic puzzle of all, because you don't stick pages 1 and 2 and 3 and 4 together. You have to stick them together in the right order so when the mag is assembled it all falls into place.

The easy way to do this without making your brain squish out of your ears like guacamole is to follow the Golden Rule:

Ensure you have a page number at the bottom left and bottom right of the two pages. Ensure that the two numbers add up to ONE MORE than your total page count.

This means that pages 1 and 16 are

stuck together – the cover and back cover – with a piece of tape up the back, adding up to 17. The cover goes on the right and the back page goes on the left, so when the cover is folded the cover page ends up on the front and the back page ends up on the back.

Then you stick together pages 2 and 15, the inside front and inside back cover, with page 2 on the left and page 15 on the right. This means when the two pages are copied onto the back of the A3 sheet containing the covers, page two ends up on the back of the cover where it should be, and the inside back cover ends up on the reverse of the back cover. Confused? Just wait till you do this yourself!

OPPOSITES

As long as you have two page numbers opposite each other at the bottom of the sheets and the two numbers add up to one more than the full page count, you can't go wrong – unless you mis-number the pages, in which case you'll have more problems than we can fix here. (Being a laughing stock will be one of them. Ed)

It's a fairly simple process after that. Of course you have to position the pages in the photocopier so they come out back to back, with the text the right way up, but that depends on what photocopier you're using.

The man who prints your mag can often sort this out for you, as they are used to doing this.

The only way, as an old pop song has it, is up. From producing your own magazine you can end up getting successful and producing a proper magazine. By this I mean something which is produced in the same way as Amiga Computing.

You would make up your pages in Pro Page just the same, but would send off the files to be printed by a bureau on an image setter on bromides or film, rather than running them off on a Bubblelet or laser printer.

Then your finished pages would be sent to a printer who will print up the sheets on expensive paper and use colour inks. This is an expensive business and usually out of the range for most of us, unless we can get someone with big money to give us a suitable budget.

There are however some halfway points if you want your mag to look more expensive on a tighter budget:

- You could have your covers printed on an A3 colour photocopier, for example. You'd have to have a colour printer or

access to a proper thermal image printer to produce the original artwork, but the results you get with this process can look very professional.

- As the page count goes up, the edge of your mag will look very scruffy when folded. To avoid this you can pay to have the mags gullnoted so that they are flat and neat.

- You could also use a laser printer to produce the artwork for the inside of the mag, but have the cover printed properly on shiny paper stock.

This again makes the mag look more professional with minor outlay, in comparison to full-scale magazine repro bills anyway.

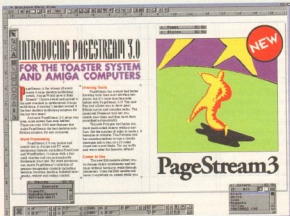
The main thing is to use your Amiga as an all purpose tool for the job in hand, and not just limit yourself to doing it all on the one DTP program.

If you try and do everything by DTP, you'll end up with a magazine that looks very stiff and mechanical. Try a more flexible approach.

By using a number of Amiga programs and more traditional techniques to do treatments of pictures, fiddle about with text and other tricks, you'll end up with something which looks good, reads well and that people will enjoy buying. **AD**



Use a good printer to get the best results



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U0025 Act-Picker
U0026 Cost Comparison
U0027 Set your own Disk
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U0035 SoftV1.1 Disk Copier
U0036 1001 Business Letters
U0037 Disk Emulator (Not A1200)
U0038 Disk Archive
U0039 Disk Archive Printer Drivers
U0040 V-Copier V1.0
U0041 Canon Printer Support V1.2
U0042 Amiga V2.0 (A286)
U0043 Workbench Utilities V2.0 (Tutorial Disk)
U0044 Net Explorer
U0045 Disk Safe v2.0
U0046 Utility Disk Master V3.0
U0047 HCKAP V2.5
U0048 Enhanced PRO V4.0
U0049 Workbench V3.0 V1.0
U0050 Workbench V3.0 V1.0
U0051 AMOS HD Input Disk (WB2)
U0052 Letter Input Editor
U0053 Enhanced Tool V1.1.8
U0054 Optimized Tool
U0055 Amistator Pro V1.1.8
U0056 Spectrum V1.7
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U0058 Accounts Master V2.21
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U0071 LSC Transfers Disk Vol. 6
U0072 Tools Diskmaster V1.0 (WB2)

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U0075 Amritouch V1.2
U0076 P-Rules Connect v1.1 (WB2/3) - Brillant
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U0083 Call Adventure Games
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D0001 Desktop Music Disk
D0002 Assorted Back to School
D0003 BWWI Hyperbook
D0004 Assorted Back to School
D0005 Funniest Demos (NOT AGA)
D0006 Amiga World
D0007 Photography - The Dark Room
D0008 The Life Begins
D0009 CTF for kids
D0010 Learn and Play Plus (Agas 5.1 WB2)
D0011 M1 Men Stories (Agas 5.1 (NOT AGA)
D0012 Read & Learn Vol. 1
D0013 10 of 10 Maths Demo
D0014 English Using Nursery Rhymes
D0015 48 Fun Trivia
D0016 Computer 101 MAMAL
D0017 Language
D0018 Deluxe Paint Tutor
D0019 SeaQuest
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EDUCATION

E0001 Assorted Back to School
E0002 Assorted Back to School
E0003 BWWI Hyperbook
E0004 Assorted Back to School
E0005 Funniest Demos (NOT AGA)
E0006 Amiga World
E0007 Photography - The Dark Room
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NAUG - Pre Sound Samples

NAUG 1 Assorted Back to School
NAUG 2 Assorted Back to School
NAUG 3 BWWI Hyperbook
NAUG 4 Assorted Back to School
NAUG 5 Funniest Demos (NOT AGA)
NAUG 6 Amiga World
NAUG 7 Photography - The Dark Room
NAUG 8 The Life Begins
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NAUG 11 M1 Men Stories (Agas 5.1 (NOT AGA)
NAUG 12 Read & Learn Vol. 1
NAUG 13 10 of 10 Maths Demo
NAUG 14 English Using Nursery Rhymes
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NAUG 100 SeaQuest

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Amiga Computing

JULY 1994

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Install error

Apologies to all those single drive A1200 owners out there who had problems with the install DF0: command printed in the first AmigaDOS 3.0 tutorial.

The problem is that the install command runs from the Workbench, so every time you run it install tries to install the Workbench disk. The good news is that there's a solution.

Boot your Amiga with your Workbench disk write enabled. When Workbench has loaded select Execute Command from the Window menu. Type the following in the requester:

```
ed startup-sequence
```

This will load up the start-up sequence text file which, when executed, sets up the Workbench environment. You will see a Resident command and this is the command we will be using in order to get the install to work correctly.

Below the last Resident command, type in the following:

```
Resident Shell: C:install PURE
```

Save the start-up sequence by pressing Esc then x and finally Return. Now reboot your Amiga with the Workbench disk write protected.

When Workbench has loaded, insert MyDisk into DF0: and using the Execute Command (you could alternatively use the Shell before inserting MyDisk in DF0:) from the Window menu type in:

```
install DF0:
```

This will successfully install MyDisk. The Resident command places commands into RAM so that they needn't be run from the Workbench disk every time it is called.

Also, on page 171 of issue 74, the box out that explains how to create a Prefs, Env-Archive and Sys drawer should be preceded with MyDisk: and not Sys: which is the root directory.

In this, the third instalment of our AmigaDOS 3.0 tutorial we will be discovering how to get a printer up and running from MyDisk.

Before you can actually copy the main printer files across to MyDisk, you should first copy a few necessary commands to the C directory and change the start-up sequence.

From the shell, type in the following commands:

```
copy c:makedir to MyDisk:
copy c:copy to MyDisk:
```

The Copy command is needed to copy the preferences file in ENVARC to RAM:ENV and the Makedir command is needed in order to create RAM:ENV. Clipboards and T when the start-up sequence is executed.

We now need to complete the start-up sequence with an assign to Ram:ENV and an

Stepping into

assign to Printers. When the printer drivers are loaded AmigaDOS will look in the assign PRINTERS:

Load up MyDisk's start-up sequence in Ed and below the line Makedir Ram:ENV type in the following commands:

```
Assign ENV: Ram:ENV
Makedir Ram:ENV/Sys
Assign PRINTERS: Devs:Printers
```

Save the start-up sequence by pressing x and then Return.

We now need to copy the necessary files across to MyDisk so that we can run the Printer preferences and select an appropriate printer driver.

We first need to create an icon for the Prefs drawer we created in the last issue. The best way to do this is to copy an existing icon, in this case the Prefs icon on Workbench. Type in the following command:

```
copy sys:Prefs.info to MyDisk:
```

Drag the Printer program from the Prefs drawer on your Extras disk into RAM. Insert MyDisk and then drag the Printer program across to the Prefs drawer on MyDisk.

If you have previously saved your Printer configuration you can copy that file too. The Printer configuration file is called printer.prefs and is stored in the Prefs/Env-Archive/Sys drawer - the same drawer that ENVARC points to.

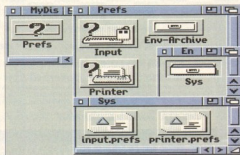
Copy the file across with the following command:

```
copy sys:prefs/env-archive/sys/print
er.prefs to MyDisk:prefs/env
archive/sys
```

In order for the Printer program to work correctly the ifparse.library is required. To copy this library, type in the following:

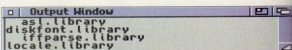
```
copy lib:ifparse.library to MyDisk:lib
```

The Printer program is now ready to run.



You can check that you have all the necessary Prefs drawers and files by using the Show All Files option from the Windows menu

Steve White explains how to get a printer up and running in the final instalment of his AmigaDOS 3.0 tutorial



Libraries invariably cause the most problems when copying programs. Use SnoopDOS to locate which libraries are needed

However, at the moment there are no printer drivers on MyDisk. So, to finish off the printer set up you will need to make a directory in Devs called Printers where you can store all your drivers.

Notice that the assign PRINTERS points to dev:printers. Type in the following:

```
makedir MyDisk:devs/Printers
```

The following command will allow you to install your printer drivers on MyDisk:

```
copy Printers:printer driver name2 to
MyDisk:devs/printers
```

You can use the above command for all your printer drivers. You should now be able to change your printer settings and print out documents using your preferred printer driver.

The above techniques can be applied to all the different Prefs programs, although you may find that different programs require different libraries. The best way to find out which libraries are required is through trial and error.

Load the program and if any needed libraries are missing AmigaDOS will inform you which one. The program may crash your Amiga, but at least you will know which library is needed!

As you become more proficient with

AmigaDOS you will gain a better understanding of libraries and will make fewer mistakes when copying programs.

That concludes our AmigaDOS 3.0 tutorial. If you have any queries or problem with AmigaDOS write in to ACAS at the specified address and we'll do our best to sort out any problems you have.

Finally, what follows is a compilation of common AmigaDOS related problems and their solutions.

AmigaDOS commands and syntax are not case sensitive. This means that when you are typing commands into the Shell or creating a script file, you are not required to include upper case characters.

```
ed startup-sequence
```

will be interpreted in just the same way as:

```
Ed Startup-Sequence
```

Secondly, aliases have always been a neglected element of AmigaDOS but can provide some time-saving AmigaDOS shortcuts.

Aliases are loaded every time you run the Shell. They are basically used to assign personalised labels to legitimate AmigaDOS commands. You may want to use q instead of EndCl or eds instead of Ed S-Start-up Sequence.

Aliases are entered in a script file called Shell-Startup which resides in the S directory. To add an alias you need to load this file into Ed. Type in the following:

```
ed shell-startup
```

When the Shell-Startup loads you will notice that a selection of aliases have been supplied. Below the first line type in:

```
alias q endcl
alias eds ed startup-sequence
alias eds ed user-startup
alias format format drive [ ] name Empty
NOCONS
```

AmigaDOS 3.0

Save the Shell-Startup by pressing x and then Return.

The first three alias commands are fairly self-explanatory – alias, the label and then the AmigaDOS command. The fourth command is a little more complex.

The brackets [] indicate the position where the user is required to enter a parameter – in this case either DF0:, DF1:, DF2: or DF3: Brackets can be used anywhere in an AmigaDOS command where input is required by the user.

To run the alias format command you would type in:

```
format df0:
```

To make the aliases active you need to close the Shell and then reload it. Try out the aliases you have entered.

Thirdly, when copying or deleting files, AmigaDOS supports the ability to include what are known as wildcards. Wildcards allow you to work on several files at once, through the use of special character combinations.

As an example, let's say that you had several picture files named Pic01 to Pic10 which you wanted to copy across to the RAM disk.

Obviously, it would be rather time

```
Ed 2.00
Echo "This is my auto-booting disk"
Makedir Ram:1
Makedir Ram:Clipboards
Makedir Ram:ENV
Assign ENV: Ram:ENV
Makedir Ram:ENV/Sys
Assign PRINTERS: Devs:Printers
Assign KEYMAPS: Devs:Keymaps
Assign CLIPS: Ram:Clipboards
Assign T: Ram:1
Copy >NIL: ENVARC: Ram:ENV ALL NOREQ
LoadB FONTS: MyDisk:FONTS
EndCLI >NIL:
```

Here is the finished start-up sequence. It creates a minimum system environment but you can enhance it as your understanding of AmigaDOS 3.0 grows

consuming to actually copy each file individually, so we employ the use of wildcards. The following line would copy all the files across in one go:

```
copy Pic01 to Ram:
```

The #1 is a wildcard and matches everything up to the wildcard entry. Here is a list of the other wildcard patterns and their effects:

- # Match any number of the following character
- ? Match any character
- * Match everything up to next character
- | Combine patterns [logical OR] only works in groups
- [] Group patterns
- ~ Reverse action of next wildcard or pattern group (NOT wildcards). Parenthesis must enclose patterns when NOT is in effect
- % Match an empty string [NULL]. Compare this to ? which must match at least one character
- [...] Character class. Match just the characters enclosed in []. So [abc] matches only A, T or X. This is not case sensitive
- [#...] Zero or more character class. Match just the characters enclosed in []. See above
- [~...] Character range. Match characters [from-to]. So [A-Z] matches all the letters in the alphabet, but ignores numbers and special characters.
- [#...] Zero or more of Character range. Match characters [from-to]. See above

e.g.

- #? anything
- ??? any file with three letters
- #a a, aa, aaa, aaaaa, etc.
- #?info all dot-info files
- ~[?#] nothing
- 7~[U]? anything NOT containing U at the second position
- S?T? SAT, SPAT, SEAT and anything else similar

```
Ed 2.00
Save Shell-Startup 38 13 (13 2 22)
alias whilsey echo "Steve White, Amiga Computing, Europress Enterprise"
alias x whilsey
alias ed ed
alias ed ed start-up-sequence
alias ed ed start-up-sequence
alias Clear "echo "">ENVARC;rm -f "
alias Copy "copy CLONE "
```

The Shell-Startup allows you to customise your Shell, adding short-cut labels to AmigaDOS commands

Jargon buster

S: Contains script files including the start-up sequence and Shell-Startup

C: Contains all AmigaDOS commands such as MakeDir, Dir etc.

DEVS: Contains the device driver files for the devices that are currently active on the Workbench

LIBS: Contains files that are called by programs in order to perform certain functions

L: Contains the device handlers, software modules that act as intermediate stages between AmigaDOS and the devices used by the Amiga

T: Used to store temporary files

ENV: Used to store the environmental variables

DEV5: Clipboard device: Controls the writing and reading clips to CLIPS

DEV5: Parallel device: Controls access to the parallel port

DEV5: Printer device: Controls access to the printer device

DEV5: Serial device: Controls access to the serial port

DEV5: System-configuration: Contains basic default preferences such as printer, colours and resolution

L: Port-handler: The AmigaDOS interface handler for SER, PAR and PRT devices.

LIBS: Diskfont.library: Library modules for finding and loading font files

LIBS: Asl.library: File, font and screen mode requester modules

LIBS: Iffparse.library: Module to read IFF text and graphic files

FONTS: Stores fonts and their descriptions

ENVARC: Stands for environment variables archive and points to the location where all the preferences default files are stored

Command syntax

Install [Drive] [NoBoot] [Check] [FFS]
 Makedir [Drive] [Path] [Directory Name]
 Assign [Name:] [Drive] [Path] [Directory Name] [JUST] [EXISTS] [REMOVE]
 [DISMOUNT] [DEFERR] [PATH] [ADD]
 [VOL:] [DIRS] [DEVICES]
 EndCLI
 Dir [Drive] [Path] [Pattern] [ALL] [DIRS] [FILES] [ENTER]
 LoadWB [-DEBUG] [DELAY] [CLEANUP] [NEWPATH]
 Copy [FROM] [Path] [Pattern] [TO] [Path] [Pattern] [ALL] [QUIT]
 Ed [FROM] [Path] [Pattern] [SIZE] [WIDTH] [Pattern] [WINDOW] [TABS]
 [WIDTH] [HEIGHT]
 Version | | | |

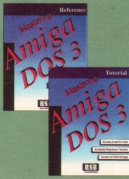
AmigaDOS 3.0 Part 3



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Before I start, I'd just like to say how much easier it is to type in this text now I've switched to Wordworth. It's so much better than Final writer! (and available at all good computer shops NOW!)

Also, I must ask all of the big games publishers to leave me alone. They've been calling me up all hours of the day and night begging me to let them publish our version of Pacman, but I keep telling them it's not for the general public, only readers of my articles. So please Ocean, Renegade, Pygnosis and the rest, give up.

Now on to more serious matters. The game is starting to take shape. Next we need to put in the actual screen graphics, and have pacman move in the paths. To do this we need to detect when pacman has run into a wall and prevent him from going through it.

As with everything in machine-code, there are several ways of achieving this. First of all I tried using the hardware collision detection to detect when the sprites had collided with the wall, but this proved to be more difficult than I had thought it would be, so I tried another idea.

What happens now is that, depending on which direction pacman is moving in, the pixels in front of him are tested and if they're set pacman is touching a wall and is prevented from travelling any further.

That sounds simple and it actually wasn't too difficult to code, but as always problems came up.

When testing the program, I noticed that it was very difficult to get pacman to turn into another path as you had to get it pixel-perfect. What was needed was an overhaul of the control method.

I wanted to have it so that, for example, if pacman was travelling right and you pressed up on the joystick, at the next opportunity pacman would turn up a path. This makes it much easier to manoeuvre pacman through the paths.

Anyway, after literally hours of sweating over a hot keyboard I managed to get this to work, and the results are on this month's CoverDisk for you to play with (pacman2.s is the source-code and 'pacman2.exe' is the executable file).

You may notice that the pacman sprite doesn't actually touch the sides though. I did this intentionally, as I thought it

Time to

The Copper

I've briefly talked about the Copper in the past months. It has two main functions: it can wait for any vertical line and can move a value into a hardware register (though some registers are protected from the copper). We've already used the copper to set up the screen (see source-code on disk).

In a copper-list you can wait for any vertical scan-line with the line

```
dc.w $yy01,$f100
```

The 'yy' is the scan-line you want to wait for. You can also wait for a point horizontally on the screen (only every 4 pixels though), but we won't need that.

The second word is the mask. This is used to disregard any bits we don't want by ANDING it with the contents of the video beam counter.

The copper-list ends with the line:

```
dc.w $ffff,$ffe
```

This waits for horizontal position \$fe on scan-line \$ff. This will never be reached as the horizontal position has a maximum value of \$e2. When the beam reaches the end of the screen the copper-list is restarted again.

To move a value into a register you use the line:

```
dc.w reg,value
```

with 'reg' being the register (offset from \$dff000). For example, the register colour0 (\$dff180) would be entered as \$180. 'value' is the value you want to put into the register.

So, for example, if you wanted to wait for scan-line \$90 and then change the background colour from green to red, your copper-list would look something like the list opposite.

Copper-list:

- dc.w xxx,yyy,zzz,etc. - set-up screen (number of bitplanes, size of screen, etc.)
- dc.w \$180,\$0f0 - original background colour = green
- dc.w \$9001,\$f00 - wait for scan-line \$90 (horizontal position masked out)
- dc.w \$180,\$f00 - set background colour to red
- dc.w \$fff,\$ffe - end of copper-list

You can easily build up a copper-list that gives your screen a multi-coloured rainbow effect. You can try this for yourself.

Load up 'core.s' (the first month's source, on the May coverdisk) and add to the copper-list the lines to change the background colour like I've shown above.

You can change it as many times as you want though. You can also use the copper-list to change other registers controlling the screen, not just the colour registers.

Finally, you could have the screen changing from a low-res one at the top to a hi-res one at the bottom, or from a 8-colour screen to a 32-colour screen, etc. That's the basic uses of the copper-list, but there are some more, complicated ways of using it.

You can also set the Blitter registers with the copper-list, to scroll the screen every frame for example, or even draw lines or fill polygons. This frees up the main processor to do other things and therefore speeds up your code.

Or you could even call an interrupt from the copper-list, to play some music every frame for example, but these things are beyond the scope of this article.

would look better if there was a one-pixel gap between pacman and the walls.

However, for the collision-detecting routines to work the pacman sprite must be in contact with the sides at all times, so

how does that work?

Quite easily really! If you look at the copper list you'll see that colour 1 is set to black, the same colour as the background. If you change that to a bright colour, for

example, purple (\$f0f), then assemble & run the program, you'll see a whole load of new lines appear, guiding pacman through the paths.

Obviously, when the colour is set to the same as the background colour, they become invisible!

In addition to all of this, I've also put in some other small routines.

The first is the number of lines remaining, which are shown in the top left corner of the screen. As the ghosts have not been put in yet, pacman can't actually lose a life, but when the ghosts are put in it will be ready.

The second new feature you may have noticed is the score which appears at the top of the screen. Again, as there are no dots yet for pacman to collect, old pacsy can't get any points, but the routine will work when the score is added to. If you



move out



Bits tested for collision (with invisible track)

Blitter registers

BLTCON0 (\$DFF040) - Control register 0
BLTCON1 (\$DFF042) - Control register 1
BLTAFWM (\$DFF044) - First word mask (A Channel)
BLTLWM (\$DFF046) - Last word mask (A Channel)

Blitter Pointers (A-Q, low & high words)
BLTAPT (H&L)-BLTDPT (H&L) - \$DFF048-\$DFF056
BLTSIZE (\$DFF058) - Blitter size (width in words + 64 x height in lines)
BLTAMOD-BLTMOD - \$DFF060-\$DFF066
Modulus Registers
BLTADAT-BLTDAT - \$DFF070-\$DFF074
Data Registers

Mark Jackson continues recreating Pacman by showing you how to manoeuvre him round the screen

Assembler



are wondering how that line came to be under the score, that's been put in using the copper (see box).

If you were to take the top off your Amiga, apart from the main processor (a 68000 on a A600), you would see several other 'custom chips' which control other parts of the Amiga's hardware. Probably

after having a few drinks, someone at Commodore decided that it would be a good idea to give these other chips their own names, and so was born Agnus, Paula and Denise. (This was probably the same person that came up with the name 'Pop-tarts' for Kellogg).

Denise controls the colour palette,

hardware sprites and the video output, while Paula is in charge of the 4 audio channels the Amiga possesses as well as the disk drive(s) and interrupts.

The Agnus chip, (or Aggie to her friends) contains the Blitter and Copper co-processors, which is dealt with in the copper box.

Double your speed with the Blitter

The Blitter is a great chip, not only does it save us the trouble of writing our own routines for copying graphics around the screen and drawing lines, it actually does it a lot faster than you could do yourself (in normal copy-mode it can move data approximately twice as fast as the 68000).

I won't go into how you use the blitter to draw lines or fill polygons at the moment, as the pacman game doesn't really need them.

However, the main function of the blitter is to copy graphics around the screen. If you look at the source-code on the cover-disk, the blitter is used to copy the 'are you ready?', 'paused' and 'game over' graphics onto the screen.

Before they are put on the screen the data under them is saved into a buffer, then after that data is copied back to restore what was under the 'paused' graphics, etc.

Don't be afraid to use the blitter. Like I've said before, if you get it wrong you may crash your Amiga, but it's only through experimenting with things that you learn about them.

So load up the source-code into whatever assembler you are using, delete all of the

routines except the pause-game routine and play about with the blitter bit.

The blitter is quite easy to use really. It has 4 DMA channels. A, B & C are source channels - what you want to copy - and D is the output channel where you want to copy it to.

The reason there are 3 source channels is that the blitter can perform logical operations on the source data. This is essential if you are drawing a blitter object (BOB) as you need to mask the data onto the screen, otherwise it would have a black border around it.

What I mean is that if you were blitting a circular shape onto the screen, the 4 corners would obliterate what was underneath them and the BOBS would look like they were in boxes.

To avoid this you use a 'mask' which is the same shape as the object you are blitting, and any spaces in the mask are filled with the data which is underneath it on the screen.

If you were just doing a straight copy of data from one part of the screen to another though, you don't need to mask it.

You set the A pointer to the source (e.g. the 'paused' logo), the D pointer to the destination

(where on the screen you want to put it), set some other registers which define the width of the BOB, what operation you want to perform (in this case a straight D-to-A copy) and finally set the size of the BOB. The size is always set last as the blitter starts when it is set.

If you are serious about learning machine-code on the Amiga you should really get hold of a copy of the 'Hardware reference manual' (sometimes known as the Amiga coder's bible).

It covers subjects like the Copper, the Blitter, hardware sprites, etc. in a lot more detail and really is invaluable.

Now you've read all this, load up the source-code and look through that, reading the comments on each line, and play about with it. You'll learn more that way than you ever will reading this.

● Next month: The reason for pacman living is to collect dots. Without them he may as well top himself, so we'd better put them in before he does something drastic. We'll also need to detect when the dots are eaten and add to pacman's score accordingly.

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Last month we started looking at the basics of function hosts, and today we will look at a small piece of example code that will bring all our observations together.

You will notice that the code we use (Listing 1) is an adapted version of the "command host" that we described back in the May issue, except that it can now operate BOTH as a function host and as a command host.

This not only demonstrates the differences between the two approaches, but also the great amount of similarity in the code. As we will see in a minute, the facilities provided by this host can be used either as ARExx commands, or as ARExx functions.

The first 20 lines or so of the program initialise the information necessary for rxgen.library so we won't go into them at all. The next few lines – from `RXCOMM...` to `$RXARGMASK...` – specify values that are used in the `rm_Action` field of the `RexxMsg`.

For the purposes of this summary, we can say that the first two bytes of this four byte value are used to code the type of the message: i.e. whether it is a command invocation, a function, a special message etc.

The last half-byte (4 bits) is used to indicate how many arguments (to a maximum of 15) the message is carrying. The remaining bits in the middle are used for the so-called modifiers, which give more specific information about an REXxMsg. For more information, consult your REXx or other ARexx programming documentation.

`RXFB_RESULT` and `RXFB_NONRET` are two examples of modifiers. The former, which we have already seen, indicates that an `AREXX` packet contains a result string, while the latter indicates that a packet (usually modifying a special command to `REXX`) does not need to be replied to.

An example of this is when we add a function host. There is, of course, a very small chance that something might go wrong, and since the message will not be replied to, we would not be informed of this; nevertheless, if we are careful in our programming, it is not too unreasonable a risk.

The next five lines open the libraries we are going to use as well as our message port, and then we get to the point where we actually register the port as a function host.

We discussed this in the last issue and there are only a couple of points to add here. The code fragment presented last time would have registered the host, but would not have given it a name. To correct this – ahem – deliberate omission, a pointer to a C style null-terminated string must be placed in the `rm.Args[0]` slot.

Due to small limitations with ARexx, the string

has to be built explicitly by concatenating a null byte to our port name. This is then copied into a buffer allocated with the `GetSpace()` function and the pointer placed into the argument slot.

I use `GetSpace()` rather than `AllocMem()`, as `AllocMem` will de-allocate the space automatically when it is finished – otherwise you have the responsibility for freeing that memory yourself!

Our program then goes into the familiar loop where it waits for messages. It is obvious that at this stage, it makes no difference whether incoming messages are commands or functions, as they will all be received at the port.

It is up to our program to determine the nature of the incoming message, and this is done in the next few lines. If the message is neither a command or a function we ignore it.

The code is much the same as before, except that the simplistic method for extracting arguments is only applied to commands. We will see arguments to functions in a minute.

By the way, you can see that ANY function which has not been resolved in the program itself will be passed as a message to our function host.

Try adding the following simple line of debugging code in the place marked `/* ... */` in our program:

SAY 'Message type is' MsgType

and, then calling any unknown function e.g. `hello()` and you will see that our host registers it. Even function-style macros, which you already have in your REXX drawer, are first checked against the function host, as this is the way the `ARexx` hierarchy works.

Having extracted the message, our host proceeds to processing it as before. However, now you can call your command/function in two

The final example in our tutorial on implementing ARexx interfaces. It's shown in ARexx so you can adapt it to your favourite language.

[illegible]

```
PORTNAME = 'MYPORT'
CALL GenOpenLib("exec",0)
CALL GenOpenLib("rxxsyslib",0)
CALL OpenPort(PORTNAME)
port_addr = GenACall("exec","findPort",PORT-
NAME)
```

REGISTER THE FUNCTION HOST :

```
packet =
GenACall("rensyslib","CreateRexxMsg",port_add
r,"",{})
```

Listing 1

Zwei bier,

distinct ways, so that:

OPTIONS RESULTS; ADDRESS 'NYPORT' HELLO; SAY
RESULT

will have exactly the same effect as:

```
547 bellu()
```

The same goes for our "BYE" command/function.

"SUMSQ" has been altered to behave differently depending on whether it is made available as a command or a function!

This illustrates the possible flexibility. If it is called as a command, it merely returns some text, but if it is called as a function, it automatically calculates the number of arguments, goes into a loop that sums their squares, and the sum is returned as the result.

This is the last article in my current ARexx series, and looking back over the last couple of years I am happy to see that just about every aspect of the subject has been covered.

I hope you have enjoyed it and got a few useful ideas from it. ARexx is undisputedly the best way to link all your system facilities together - it allows you to customise the Amiga very easily, without the need for a degree in computing science, and thus achieve a high level of productivity.

In closing this series I would like to present a few ideas/tips which I have found to be useful when learning to use ABEX.

I. ExperimentI: The main thing to remember when customising your environment with ARexx, is that you are not limited to ARexx alone.

If you have any other utility or command, whether it is part of AmigaDOS or some other programming environment, the chances are that you will easily be able to link it in to your purposes using ARexx.

It is good to start off with a confident attitude that whatever you want to do (within reason) can be done. Remember that "historically," ARexx became a part of the Amiga's operating system because so many established users

were finding it useful – it won its place, and was not just placed there arbitrarily.

2. Choose utilities with *Alrex* interfaces. That is, if you ever think you might want something done automatically. New computer users find the mouse invaluable, but as they move more towards productivity work, it's nice to be able to automate repetitive tasks.

Some applications provide their own (non-ARexx) scripting facilities, but on the Amiga this is simply daft as there is already an established standard.

The utilities that most benefit from ARexx are probably:

fill the Arg slots:

```
ActionCode = BitSet(READONLY, REFS, NUMBER)
CALL ExportOffset(packet, 28), ActionCode, 4)
NT_name= PORTNAME || "00"
p_NAME = GetPacketLength(NT_NAME)
CALL ExportArg_NAME, NT_NAME)
CALL ExportOffset(packet, 40), p_NAME, 4)
```

check REXX is available and send message:

```
rexx_addr = GenCall("exec", "FindPort", "REXX")
CALL GenCall("exec", "PutMsg", rexx_addr, packet)
```

DO FOREVER:

```
CALL GenCall("exec", "WaitPort", port_addr)
packet = GenCall("exec", "GetMsg", port_addr)
IF packet = Null() THEN ITERATE
```

get action code and determine what type it is, and if result is requested:

```
AREXX_ActionCode = Next(packet, 28)
PARSE VALUE GetArg(packet) WITH message
SELECT
WHEN BitTest(AREXX_ActionCode, 24) THEN DO
MsgType = 'C'
```

An easy way to allow up to three arguments. [commands only]

```
PARSE VAR message message ar1 ar2 ar3 .
END
WHEN BitTest(AREXX_ActionCode, 25)
THEN MsgType = 'F'
OTHERWISE ITERATE /* not com or func */
END
REFFlag = BitTest(AREXX_ActionCode, REFF_RESULT)
...
```

```
SELECT
WHEN message = 'HELLO' THEN DO
res = 'Hello, the date is 'date()
RexxArgString =
GenCall("rexxsyslib", "CreateArgstring", res, Length(res))
CALL ExportOffset(packet, 32), '00000000', 4)
CALL ExportOffset(packet, 36), RexxArgString, 4)
END
WHEN message = 'SUMIS' THEN DO
IF MsgType = 'C' THEN DO
res = 'See My issue for command code'
RexxArgString =
GenCall("rexxsyslib", "CreateArgstring", res, Length(res))
CALL ExportOffset(packet, 32), '00000000', 4)
CALL ExportOffset(packet, 36), RexxArgString, 4)
END
ELSE DO
```

If MsgType is 'F' find the number of arguments:

```
ArgNum =
cld(BitAnd(AREXX_ActionCode, REARGUMASK))
res = 0 ; OKResult = 1
DO i = 1 TO ArgNum
arg = GetArg(packet, i)
IF "datatype(arg, 'Num') THEN DO
OKResult = 0
LEAVE
END
res = res + arg * arg
END
IF OKResult THEN DO
RexxArgString =
GenCall("rexxsyslib", "CreateArgstring", res, Length(res))
CALL ExportOffset(packet, 32), '00000000', 4)
CALL ExportOffset(packet, 36), RexxArgString, 4)
END
ELSE DO
```

Return error code 10

```
CALL ExportOffset(packet, 32), '00000000', 4)
CALL ExportOffset(packet, 36), '00000012', 4)
END
END
```

```
OTHERWISE DO
CALL ExportOffset(packet, 32), '00000000', 4)
CALL ExportOffset(packet, 36), '00000000', 4)
END
```

If a result exists, and it is not required, it MUST be deleted:

```
IF "REFFlag AND Symbol("RexxArgString") =
'VAR'
THEN CALL
GenCall("rexxsyslib", "DeleteArgstring", RexxArgString)
CALL GenCall("exec", "ReplyMsg", packet)
DROP RexxArgString
IF message = 'BYE' THEN LEAVE
END
```

..clean up remove function host etc.

```
CALL ReInit(PORTNAME)
CALL ClosePort(PORTNAME)
call GenCloseLib("rexxsyslib")
call GenCloseLib("exec")
EXIT 0
```

AREXX



Alex Gian leads you to the final post in the last of his interfaces series

mine host!

Note that the same datatype check is used as before, and an error code is returned if one of the arguments is not numeric.

The code we have presented here is really a hack, designed to illustrate – as simply as possible – the principles involved in AREXX interfacing. Several checks and additions are required before it begins to approximate robust coding. However, there is a second principle

which I hope this code has demonstrated, and that is, how much easier everything becomes if you use existing utilities, rather than coding everything yourself from scratch.

Even the mere act of opening and closing a port correctly can occupy several lines of code, so why not use routines that are already tried and tested, and require only a simple function call? Several such utilities are available and

many PD houses do dedicated compilations. All these utilities, for instance "rexxhostlib" and "rexxapplib", take slightly different approaches, and ultimately you will choose the one most to your taste.

However, under no circumstances would I recommend trying to write your own interface, without at least studying and adapting some of this code first.

- Communications software (for modern users)
- Text editors/word processors (for programmers and wordsmiths)
- Graphic manipulation programs (for graphics presentations, video work, and image processing)
- DTP (for customising actions, templates etc.)
- There are also lots of potential uses for spreadsheets (microcos) and databases (queries), but sadly, this kind of software is not the forte of the Amiga.
- 3. Learn the unique features of the language: AREXX has many BASIC-like features, and these alone would be

more than enough to make it a great environment to work with.

However, it also has some unique dynamic features that set it apart from the "BASIC" mould, and bring it closer to true text processing languages.

I particularly recommend that users familiarise themselves with the PARSE instruction, [which would require several lines of code in most other languages to achieve the same result] and especially the versatile "PARSE VALUE expr WITH temp1" construction.

Other important constructs include the INTERPRET

instruction which provides a mini interpreter within the program itself. On the minus side, it is important to remember that AREXX is slow when it comes to intensive processing.

4. Use AREXX extensions: Even the most novice user can benefit by adding a simple AREXX controlled graphical resource, to eliminate repetitive keystrokes.

Likewise, if you are preparing something which is to be used by novices, it is always better to provide them with a graphic interface – several AREXX driven utilities exist for this purpose.

If you're using a camcorder for filming a wedding or out on a shoot directing actors, equipment can have a short life expectancy if not looked after and cared for properly. Listed here for your perusal are some guidelines to help safeguard your hard earned goods.

Camcorders



- Insure it.
- Never try and force a tape into the cassette housing. If it won't fit then make sure that the tape is in the correct position, that there are no obstructions, and, if still unsuccessful, go along to your local dealer to have it repaired professionally. It's always best to use a manufacturer's official servicing agent.
- If there is a clear indication of picture deterioration the heads may need cleaning. It is always advised to let the dealer do this for you. If not, make sure that you follow the cleaning instructions in the manual down to the last letter.
- If you have a damaged tape that is creased, polluted or chewed, never reinsert it in the camcorder. This may well cause a blockage or damage the recording heads.
- Try and keep the viewfinder out of direct sunlight, which has been known to melt the plastic and rubber inside.
- Regularly clean the viewfinder with a cotton bud.
- Never leave the camcorder too near a video lamp unless you fancy your camera over heating!
- Always make sure that the casing is as clear of dust as possible to reduce the chance of it entering the machine.

Looking after your equipment

Tapes



- Always keep your tapes in their boxes. The only time they should see the light of day is when you're loading and ejecting them from the camcorder.
 - Keep video boxed tapes in an upright position at room temperature. Make sure that the room is dust free and dry.
 - It is possible to splice tapes if they have been damaged at a certain segment. Make sure that you use proper equipment for the job otherwise the tape heads can be damaged by a badly cut piece of tape.
- Unfortunately there will always be some visual distortion at the point of the cut.
- Keep tapes away from strong heat, magnetic sources (transformers for example), dust and humid conditions.
 - Equalise the tape tension on a half-used tape by fast forwarding it to the end and then rewinding.
 - Contrary to popular opinion it is, in fact, not harmful for tapes to be exposed to metal detectors and modern X-ray equipment as used at air and sea ports.

Lenses



- Insure everything.
 - Keep everything in sturdy, made-to-fit cases.
 - If you have to use the equipment in humid conditions then make sure you store them with silica gel in each carrier. Dry the silica bags in the oven to reactivate them for further use.
 - Don't operate equipment from the mains during electrical storms. Don't shoot outdoors during lightning.
 - Make sure you're powered down if changing batteries or connecting accessories.
 - Use the correct value fuses of the type specified.
 - Always watch the amount of power and polarity with external power sources being used - it's possible to blow the electrics.
- Above all, use your common sense and don't treat the equipment roughly. Follow the rules and you'll have many years of happy camcording.

- Whenever you're not shooting, keep the lens cap on.
- Never shoot directly into the sun. There is a good chance that it could permanently damage the camera.
- When cleaning, use a lens tissue and blower brush.
- Use a UV filter to protect the lens.
- Never use the focus ring if the camera is auto focusing as this simply puts strain on the focus motor. This also applies to the motor zoom.

Lamps



- Insure them.
- Turning the lamp on and off continually shortens the life of the bulb. Only switch off if the lamp is shooting exceeds 10-15 minutes.
- Never use lamps in wet conditions. A single drop of rain can make the bulb explode.
- Change the fuse each time as well as the bulb,

as any failure puts strain on it.

- Always wear cotton gloves when replacing the bulb - touching it with your bare fingers can shorten its life considerably.
- Never leave a lamp close to anything that is even vaguely flammable. The bulbs and surrounding frame can become very hot.
- Wear gloves when moving the barn doors to save on third-degree burns.
- Always let the lamps cool down before returning them to their carrying case.

Batteries



- Always avoid over charging a partly finished battery. This will reduce the life span.
- Never burn dead batteries.
- Never use a video battery for power on other equipment, unless it is a battery-belt pack that may be used to run a portable video lamp.
- Always use all the power in a battery whenever possible for the most effective recharging.
- Never short-circuit battery terminals.

Adam Phillips reports on how to care for your valuables so repairs and replacements don't become a regular habit

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The new version of Music-X has been getting plenty of pre-release publicity over the last couple of months but we won't know whether this is justified or not until the finished package arrives.

Both the new Music-X and its companion module Notator-X are essentially finished, although last minute changes are still being made, even as I write this month's column.

What has amused me over the last few weeks is the short memories some Amiga pundits have. A lot of them, and a lot of Amiga owners, seem to be under the impression that the original Music-X was the best sequencer around.

It wasn't! There are admittedly a lot of Music-X users but this, to a large extent, was because the price of the package fell through the floor within a relatively short period.

You don't have to be a genius to work out that this happened because Amiga owners didn't expect flock to buy the package at its original price!

Now, if you think I'm going to spend this month knocking Music-X then forget it – I was just making a point. Basically, from release 1.1 the package was fine but if lessons are to be learnt then they relate to marketing and price point setting.

What is already clear with the new release is that these type of marketing slips are not going to be made second time around. If nothing else, the current economic climate has one advantage – it forces companies to adopt realistic pricing policies!

So what can we expect from the new release, and who is going to benefit? We'll be getting a Music-X package which is similar to previous releases but with one especially important addition – the inclusion of another module called Notator-X. This is a score writing and editing program designed to run alongside, and interact with, Music-X.

While a number of Amiga sequencers can display music using standard notation form, software which allows editing of sequences in this form is still thin on the ground.

Why are these sort of facilities useful? Well, musicians who are able to read and write music obviously prefer to work with a conventional score rather than a list of sometimes less than meaningful sequencer events. It's not just



The Music-X sequencer displays are very familiar

The second coming...

competent musicians who benefit from score editing facilities, because with a little understanding of what the dots and squiggles mean, and a bit of practice, even a beginner can get on in the act.

Check out your local music store – you'll find sheet music for the latest hits, the classics, buskers books containing hundreds of established standards, and excellent beginners books containing simple melodies, easy chords, and a bit of musical theory to get you started.

Whether you use Midi equipment or sampled sounds, you should, with a little care, be able to use these ready-made song arrangements to create songs that sound good. To start with, enter

the chords on one track, the melody on another. Then perhaps brighten things up by using the notes of the chords to add a track containing arpeggios (broken chord patterns where the individual notes are played one after another instead of together).

Song creation can become as creative as you care to make it and you'll learn as you go along what sounds good and what doesn't.

This sort of experimenting is both easy and good fun – it's also a good way of learning how to read and write music or just generally improving your musical skills.

Being able to edit and print scores, and create songs directly from sheet music, is obviously useful for a musician but there are plenty of other benefits as well.

Enhancing chords by adding notes and changing inversions is just one example of something that is a pain to do from conventional sequencer event lists, but a doddle with a notation-based editor.

The fact that the two main components of the package, Music-X and Notator-X can also be run independently will doubtless help users with limited memory.

I'm looking forward to seeing the finished package because, make no mistake, the scoring facilities should give Music-X a much needed boost.

How much will it cost? £149.99 with upgrades from Music-X version 1.x and Music-X Junior being £79.99 and £99.99 respectively. The price looks right and potentially Music-X 2 looks to have a lot going for it. What we must do now is keep our fingers crossed that there'll be no last minute hiccups to spoil things!

For more details on Music-X contact The Software Business on 0480 496497

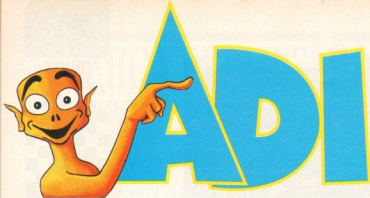


Notator-X should bring more than a glimmer to Amiga musicians

MUSIC



Are you prepared for it? Paul Overaa explains why you should be



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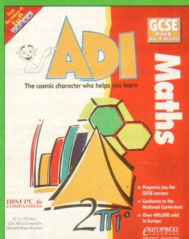
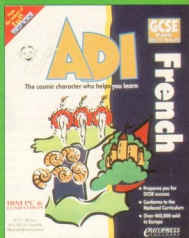
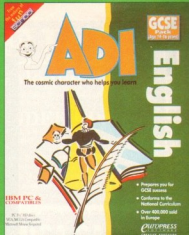
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Some people may have told you that the future of computers, especially games computers, is like the connections to the Information Superhighway – a supposedly vast world-wide computer network which is going to change the way we all live, educate ourselves and work.

This would be fine if it all works out, but of course I'm a cynic. I know that anything which pretends to serve humanity and improve our standard of life will only do so if someone somewhere is making huge donkey-choking wads of cash.

This was borne out recently when a journalist asked one of the huge multi-national communications companies if the Information Superhighway was a force for good, or was it just another excuse for his company to make a fast buck from technology-hungry public, who always want the Next Big Thing.

He laughed and said that he was a businessman and his first and only motivation was to make money. He did also add that he would like to do this in a humanitarian way, "if possible".

You hear a lot about the information highways and how they are going to change the world. You know that something is a media hobby horse if it turns up on crap, popular-science TV programmes, put over in a jolly way for the hard of thinking.

Magazines and newspapers are also getting in on the act, with non-computer journalists trying to get their heads round it, striving to explain something which is so far outside their experience that they might as well be talking in the language spoken by carrots.

As you and I know as users of modems and Amigas, the Information Superhighway is here and now. Dressing it up as a new thing is just



Movies on demand will be one of the biggest uses of the super highway

COMMS



Cash on demand

Comms fan Phil South looks forward to the information highway and the advent of games on demand

trying to market something that already exists.

Not only does it already exist, in the form of the Internet, Fidonet and CompuServe, but it isn't owned by anyone, at least the Fidonet and Internet aren't.

On-line action

We are used to paying for our comms, as we all pay the phone bill, but imagine paying for on-line time every time you want to use a computer, run a game or watch a video.

Games On Demand and Video On Demand are two buzzphrases being whizzed back and forth in the corridors of power at all the major telecommunications companies. They all want a

piece of the action. And they'll get it too.

All these "products" and "services" that they are going to try to sell you will take time to become widespread in this country. The infrastructure to make the systems work, a sort of cable TV network, is far from being nationally installed in the UK.

The aim is to sell people the service and give them a box to put on top of their TV set, like a CD-i unit or a CD32, only it'll be a single format unit owned by the comms company.

These set-top boxes are looking to replace the computer in the home as the single source of information and entertainment, cutting into TV and home computer markets, giving people with no interest in comms or computers access to the technology in an easy-to-use format, much like an on-screen programmable VCR.

It all sounds quite good and plausible, but then again so did the laserdisc, first time around. It was a perfectly good idea, but then again did people really want to trash their video machine? No.

What I like about the Internet and Usenet is that they allow anyone to have a say and join in. When a big company owns a network of any kind, they govern what is sent down that network. It's all out of the user's hands.

So let's sum up about the information highway: it won't be free, it won't be private, it won't be easy to contribute to it.

All you will be able to interact with is your credit card number. What on earth is supposed to be the attraction of that?



Shop from your armchair over optical cables

Possible futures

It's easy to be alarmist about this sort of thing. Companies are always trying out new ways to get "their money out of our pockets", and I guess expecting that to change is a bit much.

What I don't like is that these bright ideas of a "new thing to sell" might backfire on the real comms world. If the Information Superhighway turns out to be the Betamax of the late 90s, what is this going to do for the perception of comms as a pursuit?

It will cost you plenty, and as far as I can see the services will be less than useless to a person not really used to gathering electronic information.

Like the mutated Nintendo machines it will run on, it will be all frills and teases but no real benefit to anyone. Also, do people really want to spend all day in front of a computer and then spend their leisure time surfing the Superhighway? I don't think so.

Those fat cats at AT&T and BT had better come up with some pretty convincing arguments (or a free Amiga adapter) to get me involved in the sort of thing they have in mind. I hope people are grown up to admit that they just don't need it.



The old AMOS mailbox is bulging again. (Oh, is that what it is? - Ed) This month's doings is by Graham Moody of Plumstead, London who has sent me a very cute program for converting screen/hardware co-ordinates).

I seem to recall this was in response to a query I had about screen co-ords and how to convert them. The program was written in Easy AMOS, so should work with most other versions, even AMOS Pro.

Please note: in order for this program to work you need to Spack a picture into bank 10. So first we get everything initialised:

```
Set Buffer 120
INTSCREEN:
  CL0 0 : Hide
```

by starting a label called INTSCREEN. We start by hiding the mouse, as we're about to do something fancy:

```
Screen Open 0,320,260,32,Lowres
Unpack 10 To 0
```

We open a screen and unpack an IFF pic to it:

```
Double Buffer : Bob Update OFF : Autoback 0
CL0 0 : Screen Swap : InPhysics : NoLogic
Dim CO_HARDS(3200),CO_HARDP(3200)
Dim CO_SCREEN(3200),CO_SCREENP(3200)
Pen 1 : Paper 0 : S120=20 : Degree
```

Then we swap screens and define an array or two. Note: we are working degrees not radians:

```
For BAB=180 To 0 Step -512E
  For N=1 To 360 Step 1
    S=COS(PI/180)*BAB+161
    T=SIN(PI/180)*BAB+151
```

Cos calculates the cosine of any angle specified in radians. Sin calculates the sine of any angle specified in brackets resulting in a floating point number:

```
Screen Copy S,X,Y,X+512E,Y+512E To 0,X,Y : Wait Vbl
```

Screen copy makes copies of chunks of your screen. The first screen number you select holds the source image, and the second one is the number of the destination screen.

You can use optional coordinates for the rectangular source chunk of graphics and for the destination position. The effect is really good, so be patient. Obviously, this would be faster if the program was compiled.

Finally you can include a copying mode:

```
Next N
Next BAB
Radian
COORDINATES:
Screen Swap : Autoback 1
Limit Mouse X Hard(13),Y Hard(17) To X Hard(311),Y Hard(209)
```

The limit mouse will limit the mouse in the area of the picture x hard and y hard, will convert screen coordinates to hardware coordinates and restrict the mouse movement to the limits of a given rectangle on screen. You set up the size of this rectangle by giving its coordinates:

```
X Mouse=X Hard(13) : Y Mouse=Y Hard(17)
```

It's all at the Co-Ords!



A source picture waiting to be coordinated

seed the mouse to the corner:

```
Locate ,1 : Centre "Coordinates"
Locate 2,30 : Print "Press Mouse Key To Store or 0 To Quit"
Locate ,31 : Centre "this was written in Easy AMOS"
Show
```

Now you can show the mouse again:

```
Repeat
  X=X Screen(X Mouse) : Y=Y Screen(Y Mouse)
```

And this is how we convert the hardware co-ordinates to screen coordinates (x screen converts a hardware x coordinate into a current screen coordinate). If you include an optional screen number inside the coordinate brackets, then the current coordinate will be relative to that screen number:

```
X=X Hard(0,3) : Y=Y Hard(0,3)
Locate 2,27 : Print "Screen X Co":X
Locate 20,27 : Print "X Hard X Co":X
Locate 2,28 : Print "Screen Y Co":Y
Locate 20,28 : Print "Y Hard Y Co":Y
```

Graham has located the results under the picture, so they can be seen. It helps if your source picture is 200 lines tall, so this row of figures fits under the pic:

```
If Mouse Key 20
  X Mouse=X Hard(13) : Y Mouse=Y Hard(17)
  CO_HARDS(NUM)=X
  CO_HARDP(NUM)=Y
```

Which stores the hardware coordinates:

```
CO_SCREEN(NUM)=X
CO_SCREENP(NUM)=Y
```



The final coordinated result

And then store screen coordinates:

```
End If
Wait Vbl
Until LokeyS="e"
```

Then check for the QUIT keypress, and:

```
FILEIT:
  IF CO_HARDS(1)=0 : Gate F20 : End If
  THUM=NUM : BUG=0 : IF Exist("Coordinates.Asc")
  Then BUG=1
  IF BUG=1
    KILL "Coordinates.Asc"
    Goto FILE9
  Else
```

Then we casaveout the co-ords to a ASCII file:

```
FILE9:
  Open Out 1,"Coordinates.Asc"
  Print #1,"Hard Coordinates Screen Coordinates"
  For NUM=1 To THUM
    Print #1,"X Hard Co":STR$(CO_HARDS(NUM)) : X
    Screen Co":STR$(CO_SCREEN(NUM)) : Print #1,"Y Hard Co":STR$(CO_HARDP(NUM)) : Y Screen Co":STR$(CO_SCREENP(NUM))
    Next NUM
  Close 1
  End If
  F20:
  Default : Edit
  End
```

As Graham said in his letter: "This program may not be brilliant but it shows how coordinates can be converted from one type to another. For an example, check out the limit mouse (in the main program)."

I think it is a good program, which illustrates some cool uses of some obscure functions, especially writing ASCII files.

Write stuff

If you have an AMOS question, or a routine you'd like to share with the world, then please write to Phil South, AMOS Column, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP.

AMOS



Phil South looks at co-ords with the help of a program from an Amiga Computing reader.

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Beginners to publishing are almost always indistinct about the difference between text and graphics. Don't be daft, you scream at me, words are words, pictures are pictures. Aren't they?

Well, no, they are not. With most publishing programs – and that includes word publishers like Final Copy, Final Writer and Wordworth – the highest quality output is produced by sending each page to the printer as one massive graphic.

In technical terms, the page is first 'rasterised', turned into a two-dimensional bitmap, which is then copied, pixel by pixel, by the printer to produce an accurate duplicate of the document.

The pages need to be rasterised for two reasons: Firstly, because your printer will probably not contain the exact fonts you have used, and secondly because you may have used many different point sizes and whatever fonts are resident in the printer will be available in only a few small sizes – they are not scalable in other words.

Some printers do contain scalable fonts. Epson's Stylus range contains a handful of fonts that can be used in a number of sizes, from about 8 point up to 36 point, in 2 point steps.

Wordworth 2/3 and Protext 6 support the Stylus's scalable fonts, and when you print documents using these fonts you really are printing text, not graphics.

What gets sent to the printer are the plain ASCII codes for the characters on the page, plus the formatting instructions – margins, point sizes, text styles and so on.

Because the page does not have to be rasterised, and because, as a consequence of this, much less data has to be sent to the printer, printing times are very fast.

But you still have the problem that the only fonts you can use are the ones that are resident in the printer, and although you can scale them you can only do so between 8 point and 36 point.

If there are any pictures on the page they will still have to be rasterised before the printer can print them. Mixing rasterised data with ASCII data never works very well, as Pen Pal and Wordworth owners who have tried this 'mixed printing' feature will attest.

Raster graphics

It is very difficult for the program to position pictures correctly because there is no two-dimensional bitmap of the whole page into which the picture can be slotted. In a nutshell, the program makes a guess.

PostScript printers also contain scalable fonts. Normally a PostScript printer will contain 35 fonts, which comprise various styles of seven or eight classic typefaces, plus symbols and dingbats fonts. PostScript fonts are truly scalable. In the same way that you can make them any size you like on the screen, PostScript fonts can be printed at any size, including fractional sizes like 9.375 points or 123.987 points if you really need to.

INSTRUCTIONS

And you are not limited to just those fonts which are resident in the printer. PostScript fonts can be downloaded to the printer, thus adding to the list of resident fonts, and these 'soft' fonts are just as scalable as the resident ones.

The data sent to the PostScript printer by the program during the printing will be the plain text in the document, plus exact instructions about

where each character or word should be positioned on the page, at what point size, and so on.

What happens next is what makes PostScript printers so special. From that list of instructions, or 'page description' as it is called, the processor inside the PostScript printer creates a raster – a two-dimensional bitmap of the entire page.

But because the rasterising is done inside the printer by a dedicated processor (rather than by the Amiga, as is the case normally), the bitmap is created very quickly and a page of beautifully crafted text files out of the printer in a few seconds.

If the document contains imported bitmaps – i.e. IFF-ILBM graphics for example – then the program that is doing the

Resolutions

A resolution of 180 by 180 dots per inch creates 32,400 dots for every square inch of the page. So 360 by 360 dots per inch is double this? Not A resolution of 360 by 360 dots per inch creates 129,600 dots for every square inch of the page – four times as many, so it will take four times as long to create the raster and four times as long to transmit the data to the printer.

And I'm talking B&W and Greyscale printing here. For colour, the raster has to be calculated four times – once for each of the four primary printing colours.

So if a page takes five minutes to print at 180 by 180 dots per inch in Greyscale, it will take at least 16-times longer at 360 by 360 dots per inch in colour – well over an hour.

printing first to convert the bitmap into PostScript's bitmapped graphics format and insert this data, plus the relevant size and position data, into the page description.

Naturally this slows down printing as extra work is being asked of the Amiga. If the graphic is scaled to 100% then no further work is asked of the PostScript processor, apart from turning it into a raster that is, but if the graphic is any other scale – even a small change like 99.9% or 100.1% – then the PostScript processor has to do a lot of number crunching.

For very large graphics, scanned ones for example, this can take hours. Happily, the latest PostScript printers contain very powerful processors that deal with bitmapped graphics much quicker, but older devices will have older and slower processors in them, and may take longer to print a page than if the Amiga itself did the rasterising.

The Amiga will take varying times to rasterise a page, depending on the type of font that is used and the requested output resolution. Naturally, the higher the output resolution, the more dots per inch have to be created in the raster, so the longer it takes.

Obviously, the faster the raster can be created, the faster the page will print, and the only effective way to speed the creation of the raster is to throw a more powerful processor at it, either by buying a modern PostScript printer or by accelerating your Amiga.



Getting the right fonts to turn words into graphics is all important. Ben Pointer puts you in the picture



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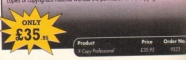
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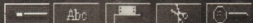


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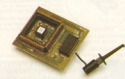
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