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**The A1200 finally
makes it back
to the shops**

December
1995

AMIGA
COMPUTING

Requires at least WB 2.04, 1 Mb RAM

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The excellent commercial database
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version 7.17
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- BangerMenu - Early startup menu

December
1995

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Requires at least WB 2.04, 1 Mb RAM

MainActor

A fully-registered version of this
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PLUS:

- MultiCX 2.06 - most versatile of commodities
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PLUS

- Final Writer 4
- Falcon 040
- Real 3D v3
- Reno CD-ROM
- Piracy report
- Fears
- OS overview
- Hypernauts
- ECTS report

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IOEXTENDER



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A500 2MB RAM

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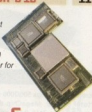
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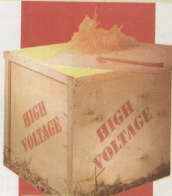
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We cover the
triumphant
return of the
world's favourite
home computer
in this six page
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Subscriptions



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Computing's subscription
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NEWS

By Gareth Lofthouse

Amiga back at last

The Amiga will be back on sale in UK shops by the time you read this piece, on schedule to compete with PCs and consoles in the all-important lead-up to Christmas. The first A1200 to be produced since Commodore's demise 18 months ago came off the production line at the Amiga Technologies factory in Bordeaux on 11 September.

John Smith, Amiga Technologies' UK General Manager, confirmed the rumour reported last month that SDL and Leisuresoft will be distributing the new two Amiga bundles. "SDL are long-time partners of Commodore, very professional and very well respected," he told Amiga Computing. "We've obviously had the

The new Amiga bundle in shops for Christmas



demise of ZCL recently so we needed a replacement and we think Leisuresoft offers a lot of expertise and dynamism."

Smith was confident that Amigas will have a strong high street presence before Christmas, announcing that Tandy has already agreed to stock the A1200 in 130 stores and that another chain may be on the verge of making a commitment.

He has also said that firms like Game, HMV and Virgin will probably be reached through SDL and Leisuresoft, though

there will be no direct relationship between them and Amiga Technologies.

Silica, SDL's retail arm, hope to boost sales of the pack with the announcement of an additional 'Chaos' software pack that will come with the standard bundle at no extra cost. The games included will be Chaos Engine, Syndicate, Pinball Fantasies and Nick Faldo Championship Golf. It's envisaged that while none of these titles are new, they will make the bundle more attractive to gamers than in particular.

As Christmas approaches, Silica will be releasing several A1200 peripherals, including the Amitek Swift range of RAM boards and a Microspeed trackball.

Plans for US

Information for our American readers from Amiga Technologies is still sparse, but Gilles Bourdin, the company PR manager, was able to make a few key revelations about their US strategy to Amiga Computing.

Bourdin confirmed that there were no plans to export the A1200 to America, explaining: "We don't think there's enough demand. But there is still definitely a good market for the 4000T."

The 4000T will cost between \$2600-2800 for the 040 version, says Bourdin, which will make it cheaper than its UK equivalent. At the time of writing, it is in production and due to go on sale in America mid-October. Bourdin also



Gilles Bourdin

revealed that the American 4000T's will come with the same 'Magic Pack' software bundle reviewed in this issue, except they will also include Scala MM300. This is good news since UK MD Anderson previously expressed doubts that his bundle would ship to America as well.

There is no news yet of a distributor or partner for Amiga Technologies in the US, though the company is still looking to make a deal with another party. Information on the number of 4000T's allocated to America was also unavailable.

Needless to say, we'll bring our American readers more news as soon as it becomes available.

Amiga developer disappears

The Amiga may be back, but yet another supporter of the platform has disappeared forever. Rasputin, the game developers that made Base Jumpers and Charlie J Cool, stopped trading at the end of July according to the firm Tri-Logic who were using them as publishers.

Rasputin is the latest Amiga company to vanish after ZCL, the distribution and retail giant, collapsed this summer. Amor, makers of the wordprocessor called Protex, also went bankrupt last month. However, the staff of Rasputin have been taken on by Soundscape Multimedia, including Rasputin MD, Mark Stevenson. Whether the team will publish Tri-Logic's Limbo of the Lost game, previewed in this magazine earlier this year, is now unclear.

According to Limbo's designer, Steve Bovis, Rasputin's failure to publish their game puts it in breach of contract. Soundscape Multimedia may take the project up, but no new contracts have been signed yet and Tri-Logic have already approached Ocean and Mindspace to offer them the game. Any other parties interested in publishing the title are invited to call Steve Bovis on 01622 677158 or Tim Croucher on 0973 512657.

Mark Stevenson was unable to clarify what had happened to Rasputin at the time of going to press, though he confirmed he is working for Soundscape Multimedia.

No stand at ECTS

The ECTS, Europe's Computer Trade Show, attracted a total of 10,359 visitors and 114 exhibitors, but enthusiasts hoping to see a stand set up by Amiga Technologies were disappointed. Though the company's UK team attended, MD Jonathan Anderson claimed it was not the right time to take an official presence at the show. He did say, however, that they plan to be at the Spring ECTS.

Fortunately, Leisuresoft had the new A1200 magic pack on display, giving trade its first general viewing

of the bundle in the UK. Amigas, though scarce at the show, were displaying games on some other developers' stands as well.

On a different note, despite the fact that the show was perceived as a success, it seems not everyone was pleased with the technological developments on display.

A strange note was found in circulation from the Society Against Computers in which the New York-based group claimed that computer technology is out of control.

"There are three months to

Christmas," the leaflet stated. "This year, more than ever before, there will be a massive push by giant corporations to sell their products to the domestic market, to get computers firmly established in our homes. Their goal is to make us all dependent on these machines... somebody must make a stand now."

For a full guide to the industry's world domination antics at the ECTS, read our full report in this issue on page 30.



News briefs

Amiga recruitment

As one Amiga company disappears, another is born. Intersect Developments are a brand new development team for the Amiga that is promising great things for the platform, including games that will push its AGA capabilities to the limit.

First up from the company comes *Atrophy*, a new shooter due for release in a month's time, but there are other games already in the pipeline. As a consequence, the company is now looking to recruit graphic artists, particularly those

Those interested in applying should call Frank Tout on 01803 690174.

Going once, going twice...

The earliest known computer goes on sale at Christies this October and is expected to fetch a staggering £50,000. Invented by Cambridge maths professor, Charles Babbage, it never got past development stage because of a dispute over payment with his engineer. His bad luck continued, because although he started on another version this also was never finished.

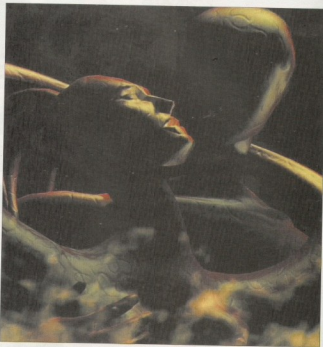
Animation firsts

The UK's first annual animation directory is set to see the light of day via Venue Publishing.

Titled Animation UK, it will contain details on the those who make it happen, whether individuals or large production houses, through all stages of production.

Targeted mainly at advertising agencies, commissioning editors and funding bodies, the directory will promote all aspects of animation. It will be priced at £10. Venue Publishing can be contacted on 0117 942 8491.

Bit.Movie is always home to the most avant garde animations going



Arena for animators

For all those artistic Amiga users out there, another outlet for the creative urge comes in the form of the Multimedia Bit.Movie competition scheduled for 4-8 April 1996. For the last few years Bit.Movie has been giving animators and designers a forum in which to explore the new ideas, techniques and narrative forms rising from the digital images created using computers.

The competition takes place in Riccione, Italy, each year, but it attracts entrants from countries all around the world. In previous years, Amiga users have been winners or runners up, so if you've been working on an animation it's worth sending off.

There is also a poster image competition for which entrants are invited to send in images. The deadline for this is 15 November 1995, and you should take into account that customs delays could hold up your submission by up to two weeks.

Work should be sent to BIT MOVIE '96, Via Bergamo, 2-47036 Riccione. For more details call Carlo Mainardi on +39 541 643016.

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Forthcoming from EMC is a new CD called Phase 2, to be released on 6 November 1995. It's to be priced at £24.99 and will contain a vast range of fonts, clipart and images that are unavailable on any other EMC CDs. The disc will also include thumbnail preview screens.

As a further offer, EMC are offering Phase 2 at a pre-release discount price of £19.99 + p&p for all orders received before 3 November 1995.

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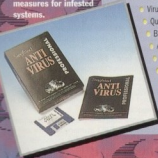
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Birthday celebrations for Soft-Logik

SoftLogik Publishing, better known to Amiga owners as the company behind the powerful DTP program PageStream, are currently celebrating their tenth anniversary. PageStream has somewhat led the way for DTP packages, so much so that a new version is in development for Macintosh and Windows. Amiga owners can look forward to a new Amiga version which is planned for next year.

Doron Kazmaier, SoftLogik president commented: "PageStream has become the number one Amiga and Atari DTP program by being the best program available. The Macintosh and Windows markets have entrenched market leaders, but our extensive experience as a pioneer in the DTP field will help

us succeed where recent Mac DTP newcomers have failed."

And for our American cousins...... SoftLogik have announced that they have cut the price of their upgrade for PageStream3. Previously, the price for upgrades was \$135 which has now been cut to \$95. For those on a budget, however, they will be able to purchase a cut-down version for \$60. This will omit the Pantone colour libraries and the printed manual. However, PageStream 3 includes a comprehensive help system, so is easy to use without a manual. SoftLogik have taken these steps because they believe in increasing PageStream3's user-base so that they can continue

development of this program.

They are taking this still further by cutting the price of the North American version of the current version of Wordworth 3.1. If you get friends of other SoftLogik programs has been lowered from \$120 to \$99, and the new suggested retail price reduced from \$135 to \$110. Top seller Organizer has also been cut to \$85.

SoftLogik are also offering loyal American readers a special deal for Wordworth 3.1. If you get friends to buy the package they will only have to pay a reduced price and you will get \$20 back off your next purchase from SoftLogik. A similar deal applies with PageStream 3.

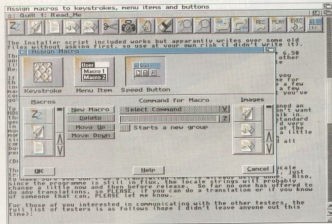
Editor's choice

Another Amiga product from America comes in the form of Phantom Development's Digital Quill. According to its makers, it's a fully-featured text editor designed to meet every text processing need with "grace and ease". Quill will put editing functions at the user's command with a user-definable Keystroke, Menu, or SpeedButton. The designers say the program will be equally useful for working on book reports for the classroom as well as for writing C and Assembly language programs.

Several default macros are included which support many popular compiler environments such as SAS/C, DICE, and Benchmark Modula 2. It will include a wide range of features including user-definable icons, menus, a style guide-compliant GUI, AREXX support, Auto-indent for programmers and online help.

"Quill is not only brand new in the sense of it being a new product," the developers said, "but it also brings a brand new attitude to text editors, and applications in general, to the Amiga. Quill is a user-centered design, that is to say it was designed from the start with a high degree of usability in mind, to provide a ground work that is comfortable and easy to use, while at the same time being fast and powerful."

Digital Quill is priced at \$59.95 in the US but it should be available with international Amiga software dealers soon. Contact Phantom Development LLC, P.O. Box 572 Plantsville, CT 06479.



Can Digital Quill fill the gap in the text editor market?

Comeback in Canada

With tales of woe for many Amiga-dedicated companies, it's good to hear that Wonder Computers, one of North America's largest Amiga-only companies, have just expanded. Wonder Computers, Inc. not only expanded their corporate headquarters and added a new multimedia dealership, but have also formed Lazarus Engineering, a development arm dedicated to the creation and refinement of Amiga products.

WCI's new headquarters keeps them based in Ottawa, but creates 3,000 extra square feet for the expanding administrative office needs of the company. The former HQ will continue to be used as a retail outlet, with larger floor space, more storage, and a full-time Amiga lab for classroom activities run by WCI's Information Technologies division.

Coming off the heels of a successful show at AmiJAM '95 in Western Canada, Wonder Computer have opened their fifth Amiga dealership in Vancouver, British Columbia.

With the addition of the Vancouver store, Wonder Computers occupies 13,000 square feet of Amiga-only business nationwide. In order to meet the demands of the global Amiga marketplace, Wonder Computers decided to add a new product development division to the team on the form of Lazarus Engineering.

In addition to original, in-house projects, Lazarus are hard at work revamping and improving the product line WCI purchased from New Horizons Software last spring. According to Wonder, popular packages such as Flow, QuickWrite, and DesignWorks are being brought up to the standards of the latest Amiga operating system as well as improved to compete in today's marketplace.

"Under the ministrations of Amiga Technologies, the Amiga marketplace has a changing face," the company's Promotional Director Jason Compton claimed. "Wonder Computers, Inc. is taking the steps necessary to ensure that Amiga users worldwide are prepared for the future and are supported in their needs today."

For more details e-mail Mark Habinski, President and CEO at mark@wonder.ca, or Jason Compton, Promotional at jcompton@wonder.ca.

Top titler

Amiga owners can now learn more about how DTV titles work through a £14.99 software video tutorial on Amiga based titling produced by GV Broad Enterprises.

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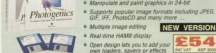
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3

Burning wildfire

DKB have been creating Amiga hardware since the very beginning. Their Insider 1Mb board for the Amiga 1000 was one of the first reasonably priced A1000 RAM boards back in early 1986.

While most of the other Amiga hardware manufacturers in the States have shut down or moved into the Intel world, DKB's still on the cutting edge, releasing the first North American 68060 accelerator board. The WildFire 060, surprisingly enough, isn't designed for the A4000 or A3000, but for the venerable Amiga 2000. The A2000 has the greatest penetration into the professional market on this side of the Pond, as a large percentage of the machines are used as Video Toaster platforms. And when you're rendering frames in LightWave, you need all the horsepower you can get.

The WildFire 060 features true 50MHz 68060 architecture - it's not an 040 board redesigned to accept the more advanced chip. The 060 can access

Denny Atkin reports on a US manufacturer still supplying hardware for the Amiga

memory 64-bits at a time (compared to 32-bits at a time on the 040, and 16-bit access on the basic A2000), and the WildFire board can support up to 128Mb of memory in mixed combinations of 4, 8, 16, and 32Mb SIMMs in standard 72-pin modules.

The board boasts a 32-bit Fast SCSI-2 controller. Its DMA access means over 90% of CPU power is still available when reading and writing. The AutoConfig board also sports an Ethernet controller that supports both twisted pair and thin coax cables, with transfers up to 100Mb/second.

The board lists for \$1699, and DKB will follow up soon with a model for the A4000 and A4000T. In the meantime, it's rather ironic that - for a short time -



the A2000 may be the fastest Amiga on the planet.

DKB has also mentioned that they're developing a multi-I/O Zorro II board. The current plan is to include one parallel and four serial ports, with an optional expansion module that will add another set of one parallel and four serial ports.

For more information, contact DKB at (810) 348-3821.

Text effects

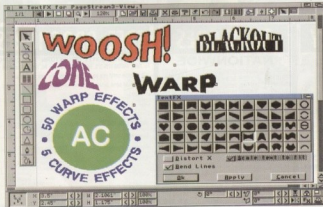
PageStream 3's quirks are nearly ironed out now, and version 3.1 with all promised features implemented and the bugs ironed out may be out by the time you read this. SoftLogik will then wrap up the Mac port, which should be out this Winter, to be followed by a Windows 95 release in the second half of 1996.

SoftLogik aren't jumping ship, though. Along with distributing Digi's products in North America, the company are also continuing to develop add-ons for PageStream. The latest is TextFX, an add-on module that finally does away with the need to load SoftLogik's quirky and discontinued Art Expression if you need to create a fancy text splash in your document. TextFX is a PageStream3 extension and

fits seamlessly into the PageStream3 interface. A new button will appear in the Edit palette for text objects to access the TextFX requester.

It has the capabilities of Art Expression's text effects features and then some. It can warp text inside any of the 50 pre-defined shapes, and you can warp text in your own shapes via Arrex macros. It can even warp multiple lines of text inside shapes. TextFX can even convert TextFX objects and any frameless text object to graphics.

TextFX is compatible with Compugraphic, PostScript and SoftLogik DMF fonts. (It also works with TrueType fonts if you have SoftLogik's optional TrueType font engine.) It sells for \$50, and Art Expression owners can purchase it for only \$40.



TextFX adds over 50 text-shaping and warping effects to SoftLogik's PageStream 3.0

In brief

SoftWood are answering the cries of Amiga users who don't have the memory or horsepower to run Final Writer 4, but who do want an updated word processor. Look for Final Copy 4 this winter, with the improved interface of Final Writer 4, but lacking a few features.

Amiga owners looking for an all-in-one scanner solution should contact MiGraph. Their MS2400 is a one-pass scanner that scans at up to 2400 dpi, while the MS1200 is a 3-pass, 1200 dpi scanner. The kits include the scanner, SCSI cable, ColorKit Pro software, and MiGraph OCR for the Amiga. MiGraph can be reached by voice or fax at (206) 838-4677.

If you're looking for photo backgrounds for your desktop video or publishing work, Canada's Legendary Design Technologies have released ProPic's, a 120-image set of 24-bit pictures stored in IFF, BMP, jpeg, and Toaster Frameset formats. The CD even includes viewers and image-processing programs for both the Amiga and PC. Call Legendary Design Technologies at (519) 753-6120, fax them at (519) 753-5052, or e-mail legend@lo.org.

There's still no definite word on Amiga distribution in the U.S., but it appears non-exclusive licenses to distribute the A4000T may be issued to CEI and SMG (the company that handled Commodore's US repairs during its last few years of existence).

It's a small world, they say, and apparently its getting smaller all the time. Physical transport networks have made it possible to travel between continents in a matter of hours; now the Internet will take you all over the world in a matter of seconds.

Yes, providing you've got a computer and a connection, the world's your oyster – or so the magazines keep telling us. We've all read – and in my case written – the endless articles about the online revolution coming our way courtesy of the Internet, the technological leap that supposedly represents the 'zeitgeist' for the 21st century.

After all the talk, it's not surprising if your first visit to the web is disappointing. The amount of information out there is so vast it defies human comprehension and, unfortunately, a large proportion of it is utterly useless garbage.

The Internet's advocates often point to the fact that anyone can use it as a publishing medium as one of the Web's great strengths. They are probably right, but anyone who's ploughed through site after pointless, boring site will realise it is also one of its great weaknesses. There is no-one to censor the free expression of opinion on the Web, but there's also no-one to weed out the sites where the content's so weak it doesn't merit the expense of a visit on your phone bill.

IN THE SLOW LANE

Add to that the fact that the software and connections are still far from stable, and that access times just seem to get slower and slower as more people jump on the bandwagon, and the Internet is clearly far from being the Information Superhighway we've been shouting about. Some say the Web is instantly fascinating and addictive, but newcomers with limited patience for the foibles of computing may well fall at the first hurdle through frustration.

Magazines have churned out articles that glorify the Net to a degree totally disproportionate to the benefits most people can derive from it in its present form. How can it possibly match up to the great expectations we have built for it?

The paradox of the Internet is that it gives 30 million people the means of

Web of lies

*The internet connects you
to millions of people around
the globe, so how come
surfing can be such a boring
and lonely experience ?
Gareth Lofthouse debunks
the myths surrounding the
World Wide Web*



communicating with each other from all around the world, yet surfing is as lonely and isolated an experience as computing ever can be.

What about all those Net romances, all those friendships struck up between individuals from different nations, you may be asking? Well, I don't know about anyone else, but my experience of the IRC channels has been so dull it's put me off for life. Even the sex channel I visited was populated by computer nerds and literates tapping away in a discussion about as saucy as assembler code.

Unfortunately, the people who voluntarily trade in time they could spend socialising with friends for the alternative of wittering on in Internet discussion groups are usually not the sort of people you want to befriend.

The problem with IRC groups is that they allow the social inadequates, the bores and the know-it-alls to hide behind the

anonymity of grey text pages. The net is the great leveller, a communication medium that allows Kevin from Bedford to pass himself off as Axeman the cool dude. But people who need call signs and an expansive vocabulary of smileys to make an impression should probably be avoided.

More seriously, we journalists are causing as much as much damage to the credibility of the new medium as anyone else. Meaningless waffle and naval gazing is almost endemic among journalists writing about the Internet.

The danger is that Jo Public will be bored and disillusioned by the Web long before it reaches a state where it matches most of the claims made for it. If, as enthusiasts, we want this technology to reach its potential, perhaps it's time we stopped trumpet blowing, took a step back, and started looking at things a bit more objectively.



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CIRCULATION DIRECTOR David Wren
COMMERCIAL DIRECTOR Dennis Wright
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Tel 01625 878889 Fax 01625 850632

E-Mail contacts
Editorial: edit@comp.demon.co.uk
Advertising: ads@comp.demon.co.uk

CHAIRMAN Richard Hease
MANAGING DIRECTOR Ian Bloomfield

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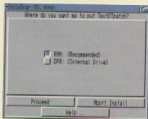


Extracting CoverDisk files

If you have already booted this month's CoverDisks, you may have noticed a slight change to normal. We are now using Commodore's installer utility to try and make extracting the archives as easy as possible for you.

To extract any single archive, simply double-click its icon and follow the on-screen instructions. If you want to quickly extract the program to RAM, select the NOVICE level on the welcome screen and press proceed once on the current screen, and then again on the next. The program can now be found in your RAM disk.

You also have the option of using a floppy disk. If you pick this option make sure you have a blank formatted disk at the ready, and if you only have one disk get ready for lots of disk swapping and a long wait.



The Amiga installer needs to be told where to extract the files to. Simply click on the appropriate destination

THE Cover

A myriad of utilities for you this month, including two complete products - the excellent database, Final Data, and a fully registered version of the tremendous animation package Main Actor

The double

Final Data

Author: SoftWork
Workbench: 2.04

The first of our two product give-away for this month is Final Data, a comprehensive and extremely nice looking database manager. Hard drive users can extract the archive straight onto their hard drive because it is ready to run, while floppy users must copy it onto a floppy, boot with their Workbench disk, and then run Final Data.

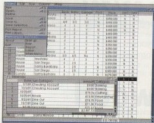
If you want to get a quick idea of what Final Data is like to use, load one of the example databases. The database looks very much like a spreadsheet, allowing you to view a lot of entries at the same time.

You will quickly notice that individual columns can be resized on the fly,

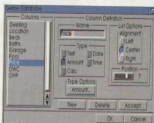
an entire row or column can be quickly selected by simply clicking on its button, and individual entries are easily edited, again by just clicking on them.

To start a new database select new from the project menu, causing a requester to pop up. Whenever you wish to make a new column, you use this requester, but first you must select what type of data the column will contain. Final Data can handle five different types, and these first three are fairly self explanatory - being text, date, times. The other two, Amount and Calc, do need a little explanation.

The Amount datatype tells Final Data that what will be entered in this column is numerical data, therefore allowing calculations to be performed on it. You can specify whether it should treat the amounts as currency and also how the



Final Data's real power is in the amount of information you can view at once



Make sure you select the text gadget before accepting any of your changes

rDisks



Still Due column shows off the use of Calc functions

amount should be displayed. The total value of all the entries in the column can be displayed at the bottom of the window and also on printed reports.

Calc columns allow you to perform calculations on any Amount columns you have previously defined. If you have a number of Amount columns and try to create a new Calc column, you will be presented with a new requester with various gadgets and list views. The group of radio buttons in the bottom right-hand corner let you add standard math functions and numbers.

So to create a new Calc column called Debt, which involves subtracting the amount Payment from the amount Cost, you must first click on Cost in the list view, then click on the minus button and then on Payment.

If at a later date you want to adjust a column's attributes, use the redefine function in the columns menu. After you have made a change, make sure you activate the Accept button by clicking in the text gadget containing the column name and pressing return. Otherwise any changes you have made will be ignored.

Final Data has fairly straightforward search and sort options. The sort requester lets you choose which column the database should be sorted by and whether this is high to low or vice versa, and the search and replace function is the same as any text editor.

Potentially the most powerful feature of Final Data is its comprehensive ARexx port which allows you to not only write ARexx programs that can alter Final Data's interface and the way it works, but will also let you easily share data with other ARexx programs – the primary one being Final Writer, which would allow you to do mail merges very easily.

Colors

Author: Ian J Einman
Workbench: 3.0

Want to find out what the colours on any of your screens are? Oh, well anyway you can with Colors – yes it is an American program, hence the spelling. Featuring a font and screen-sensitive window, Colors does look very nice, and has the ability to jump onto any screen and will automatically adjust to whatever resolution it is displayed in.

There are plenty of options to allow you to mess about with screen colours, in both RGB, CMY and HSI. You can also load the palette in from any picture files, because Colors will look for the CMAP chunk in an ILBM file and load it in. Before you try to use Colors, make sure you have the systemplus.library installed, otherwise it will crash.



Being font and resolution sensitive, Colors is a '90's program

Author: Ian J. Einman
Workbench: 2.04

From Workbench 2 a new drawer was added to the Workbench disk, that being the WBStartup drawer. This made it a doddle to get programs up and running along with Workbench, without having to mess about editing your startup sequence. It is even possible to specify which programs should be run first using the STARTPRI tool type.

So why would you want to replace this great function? Well, AutoStart adds a number of useful new facilities along with a number of advantages over the normal WBStartup. For starters, AutoStart can run any of the following: Workbench, DOS and ARexx programs along with Amiga DOS Scripts. It is even possible to specify a number of DOS commands on the same line.

Faulty CoverDisks



If you should find your Amiga Computing CoverDisk damaged or faulty, please return it to:

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Please allow 28 days for delivery

ABBackup v5

Author: Denis Gounelle
& Reza Elghazi
Workbench: 2.04

I would hope all you hard drive owners out there have a stack of disks tucked away somewhere with a backup of the contents of your hard drive stored on them, and if you have not why not? You just know at the most inconvenient time your hard drive will crash and you will lose some vital data, and then you're going to be cursing yourself.

Well, ABBackup has got to be one of the best hard drive backup programs around, and this latest version gives the old interface a complete overhaul for a much nicer font sensitive one that works equally well on either Workbench or on its own custom screen.

Installation is nice and easy, using the standard installer. Once done you can take a quick look at all of ABBackup's features, which include tape and file backup support. This has the ability to specify exactly what compression it should use, including direct support for the XPK compression libraries, and ABBackup also allows you to use external compression programs such as Lha, if you wish.

AutoStart

You are best off using the supplied install script because there is a new library to install, and before you all start groaning, it's only small and is needed for Colors to work as well. Once installed you should move all your old WBStartup programs back to their original locations. Then, run the preference program and simply drag and drop all the programs you want to run at startup into the preference window. It could not be simpler.

You can then prioritise the programs by using the + and - buttons to move the programs up and down the list, the highest programs being run first. One very useful addition is that you can tag certain programs that should not be run if the mouse button is being held down at startup time. This allows you to boot up with a minimal system which is very useful when you want every byte of memory available.

Banger Menu

Author: André Trettin
Workbench: 2.04

Here is another useful system enhancer for your hard drive. Banger (no sniggering at the back, if you don't mind) Menu lets you choose to run various different scripts or programs when you boot your machine. When you reset your machine, hold down the caps lock key and voilà, Banger Menu's little window will appear with your various boot up choices. Just click on the option you want.

This is pretty helpful because if you want a number of different boot-up sequences it is a good way of getting an easy-to-use interface. Currently, I have three alternatives to the standard startup sequence ~ two for booting the CD and another for running with a minimal system. Banger Menu provides a perfect way of choosing which alternative I want.

To install Banger Menu you need to add a line early on in your startup sequence to run it. You will also need to adjust the preference file to suit your own needs. To do this you will need a good text editor, like CygnusEd. What a stroke of luck ~ we gave it away last month.



NewMode

Author: Andreas Linnemann
Workbench: 2.04

One of the nicest features of AmigaDOS is the ability to have many different screens open at the same time. This makes it so much easier when working with different applications because each one can reside on its very own screen, with each screen being capable of having its own resolution and depth.

Reminder

Author: Richard Ambridge
Workbench: 2.04

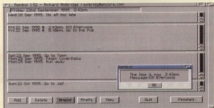
If you are always forgetting to do things during the day then you need this small commodity. If you drag Reminder into your WBStartup drawer, each time you start your computer it will check for any messages you have entered into it. These messages can be viewed and edited from the main window.

Reminder provides you with a number of different message types, depending on how often you need to be reminded to do something. Persistent is simply a daily reminder that will not go away until you delete it. Along with this there are weekly, monthly, yearly and a birthday reminder. This is the same as the yearly one, but with the addition of an extra note, reminding you it is someone's birthday.

Helpfully, there are also relative reminders, so if you get paid on a particular day of the month, say the last Monday of the month, this can be set. This is also possible for yearly relative dates. It is also possible to specify a particular time of day for the reminder requester to pop up, like 5.15pm which is when I can hobble off home. There is also the option of executing another program, say a sample player.

All these adjustments are easily done through Reminder's interface using the proportional sliders to adjust the day and weeks. There are also keyboard shortcuts available for all the operations, but you will have to read the documents to get a run down on all of them.

Reminder does provide a few other services, along with a good preference section where you can view all forthcoming events for a specific time span.



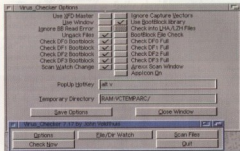
Just some of the nasty tasks I have to carry out

Virus Checker 7.17

Author: John Veldhuis
Workbench: 2.04

Virus Checker has just undergone a complete overhaul, so has jumped up a new revision number. The major new additions are locale support for different languages, and a completely new interface design.

Gone is the large single window of the old design because it has been replaced by a more elegant selection of buttons, each of which leads you off to the various different sections of the program. Virus Checker now uses the standard installer program, which can be found on the first CoverDisk. There are a lot of files to copy across and you should use it. Personally, the best place to put the actual Virus Checker program is in the WBStartup drawer. You should note that this version is not compatible with the old configuration files, so if you have problems running it, check in your 'S' directory and delete any virus configuration files.



This is great until programs start opening screens that you do not want to work on ~ especially older programs which give you little or less of changing the used screen mode. This is where NewMode comes in.

Each time a new program tries to open a screen, NewMode will pop up and ask if it should change the original screen mode ~ if at all. It provides you with various options, ranging from completely ignoring the program to allowing you to choose a screen mode each time the program is run. The control over what type of screen



The powerful mode promotion window gives you access to any screen mode you could wish for

is opened is extremely comprehensive, allowing you to choose the amount of overscan, screen depth, and whether an extra halfbrite or HAM screen should be used. This is as well as the normal screen mode choice. There are plenty of other options available and you should read the provided document for full details.

Tiff View Patch

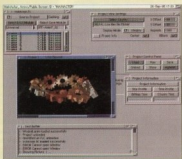
Author: Bert Wynants

If you bought last month's issue you will have got your grubby little mitts on the excellent utility, TiffView. Well apparently, there is a big bug in the IFF save routine, which means only TiffView can reload any images that it saves out.

This will correct that bug. To use it you will need to open a shell and change directory to where you have placed the patch directory. Next, copy the TiffView executable into the same directory, and then type **spatch TiffView** ~ this will alter the original program to remove the problem.

As if one full program was not enough to keep you occupied, this month we have the fully-registered version of Main Actor. This is such a large program that only users with over 1.5Mb of hard drive space will be able to use it.

To install MainActor boot up with your hard drive and double-click on the **InstallKey** icon. This copies the special Main Actor key file across



You can even play animations in a window

ASP

Author: Zeno Montresor

Workbench: 2.04

Magic User Interface required

The Amiga's operating system is a fairly complex beast, with lots of different aspects of it running in the background, hidden away from the user. Things like libraries, devices, tasks, processes, ARexx ports and interrupts can all be opened, closed, created and disappear without you knowing a thing about it.

For any one who is curious enough, this Amiga scan program will let you prod and poke and investigate all these things and probably crash your machine, if you are not too careful.

One of the most helpful things about the program is that if a program should crash, leaving its windows and screens open, ASP will let you recover those resources by allowing you to close the redundant windows and screens. There are two versions on the disk, one for Workbench 2 and the other for version 3.

Miser Print

Author: Heinz-Gunter Boettger

Workbench: 2.04

HP Desk Jet printer required

This must be a favourite with all Desk Jet owners out there. For anyone that does not know what it does, Miser Print makes your paper go a lot further by allowing you to squeeze up to eight A4 pages onto a single piece of paper. So using my vast mathematical skills, with Miser Print you can use an eighth of the paper you would usually use.

How is this law of physics-breaking feat achieved, I hear you cry? Well it is quite simple. Using one of the tiny fonts

MainActor

Author: Markus Moenig

Workbench: 2.04

Hard drive required

to your L: directory and will give you access to all of Main Actor's features, and remove all the annoying 'please register' requesters.

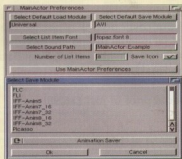
To install the main program, double-click on the **MainActor.lha** – to use this you must have the installer program in your C: directory. If you do not have this it can be found on the first CoverDisk in the C drawer – drag it across to your hard drive. Make sure you select expert install, otherwise you will only be able to choose RAM as the destination.

Once on your hard drive you will have to add an assign line to your user startup, that being **Assign MainActor:**. This allows Main Actor to locate all the extra files it uses.

When you get Main Actor up and running you will access either a sequence of pictures or a complete animation. Luckily, Main Actor accepts

a wide range of animation formats along with the normal IFF Anim format, such as AVI, FLI and FLC.

The real power behind Main Actor is its ARexx port. A number of example scripts are available for you to play about with, along with a short example animation.



MainActor supports a wide range of Anim formats

built into the Desk Jet, you can squeeze around 170 characters across a single piece of A4, and as most text is only 60 characters across you even have room to spare.

If you then use the other side of the paper you can squeeze up to eight pages onto a single piece. This is perfect if you need to print out a large manual, because it is easier to browse through, plus you have the added bonus of saving paper.

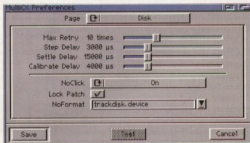
You also get the ability to specify what range of pages should be printed, and can view a preview of how each page will look.

Multitck Prefs

Author: Michael Barsom

Workbench: 2.04

One of the problems with MultiCX is that in trying to keep the program as small as possible, all its preferences are stored as tool types in the program's icon. Seeing that there are so many functions built into MultiCX, this makes for a daunting number of tool types. This preference



At last you do not have to go mad messing about with all those tool types

Multitck 2.08

Author: Martin Berndt

Workbench: 2.04

This is Ben Vost's favourite program in the whole world. He loves it to bits, he does. MultiCX, if you did not know, is one of those do-it-all-in-a-single-program programs. The main advantage MultiCX has over all the others is its diminutive size, and the fact it has been written in a highly compatible way.

Well, what is new for version 2 then? Martin has added the very useful assign wedge so you can do assigns from Workbench, and it gets rid of another program from your WBStartup drawer.

For ShapeShifter users there is a freeze

ShapeShifter function. When the ShapeShifter screen is pushed to the back it will freeze the program, therefore stopping graphic card screens being corrupted. There is also a function to make the right button equal a Mac double-click, but I have been told this is pretty useless.

Another two new additions to MultiCX are lock pens for MagicWB users, so you will never lose those lovely icon colours, and Newedit hook which allows you to cut and paste to text gadgets, among other edit functions.

Of less use, but still quite nice, is opaque window moving and resizing. If any of you have seen the Acorn Archimedes in action, when you move or resize a window the entire window is always visible – you never have the rubber band effect.

Final Data

Now that you've had a chance to try out Final Data 1 on our cover disk, why not get the full 100 page official manual to find out more, or even upgrade to the latest version - NEW, Final Data 3? The Final Data manual costs only £12.95 whilst you can get the latest Database from SoftWood for the special price of just £36.95!

Features of the Official Final Data 1 Manual

To make full use of your Final Data 1 coverdisk you may wish to order the full Final Data 1 manual.

This informative 100+ page manual will:

- Provide a set of exercises in the tutorial chapter.
- Clearly explain all the menu and requester actions.
- Detail all the print options available.
- List and show examples of AReXX commands Final Data can use.

The easy-to-use manual includes clear screenshots, step-by-step guidance and a comprehensive index.

Another major benefit when you purchase the manual is that you will be registered as a SoftWood user which entitles you to other special SoftWood offers and gives you access to SoftWood's highly acclaimed technical support phone line.

All this is available for only £12.95!

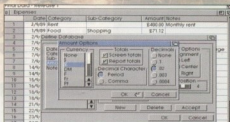
Upgrade to NEW Final Data 3

You may prefer to purchase the complete new Final Data 3 package. As well as the benefits of a manual and Softwood registration, this advanced database program includes all these additional features:

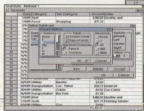
- **Running Calculations** - ideal for producing a bank statement style database.
- **Memo Data Type** - enter as much text as you want in a separate window.
- **Database Queries** - define simple or complex search criteria to produce a sub-list of required data.
- **Non-Contiguous Selections** - you may now select rows and columns that are not adjacent to each other. This is useful for copying, saving, or printing only the rows or columns you require.
- **Views** - save, sort and search definitions by name for easy recall.
- **Hidden Columns** - for occasions when you don't wish to display or print certain columns.
- **Datatype Support** - under Workbench 2.04 or above, Amiga graphic, sound & animation datatypes can be viewed/played within Final Data 3.
 - **Conversion of Data** - for example, change text columns to amount columns.
 - **New AReXX commands.**

Final Data 3 also offers the optional use of Amiga file requesters, has additional program preferences and includes various automatic resizing of column widths.

The complete Final Data 3 package is available for only **£36.95!**



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Getting people to take the Amiga seriously has always been an uphill battle. Even now, when it's creative capabilities have been proven beyond dispute, mentioning the machine to anyone in business will often draw a contemptuous reaction: "Amigas? Weren't they games machines?"

The popularity of this view is not surprising, despite the fact that it does the computer a gross injustice. For a long time it was marketed as a games machine, and Commodore scarcely attempted to challenge the PC's age-old domination of the office-oriented market.

Against all odds, however, the Amiga's good value and powerful software has pushed it into some of the most surprising corporate markets. It's key roles in numerous famous film and TV productions alone has received a great deal of well deserved coverage from Amiga Computing in the past.

This is not the limit of the Amiga's success in the commercial world, however. It's simplicity and natural prowess for creative work make it the natural choice for all sorts of companies requiring multimedia, presentation, design and audio-visual tools. Over the next few months, Amiga Computing will be focusing on some of this remarkable machine's more interesting achievements.

Revamping history

The Imperial War Museum in Lambeth is one of the most highly regarded of our national institutions, a place where artefacts and sources from some of the most momentous events to shape history are dynamically presented by state-of-the-art multimedia technology.

As one of London's most popular tourist attractions, the Imperial War Museum has had to keep abreast with the times. Cabinets full of uniforms and weaponry may have their place, but visitors to major museums demand exhibits to feature simulations, videos, sound and interactive displays to bring history to life.

Given the high tech demands required to impress evermore jaded visitors, even

Broadcaster Elite made the videos on the WWII Homefront possible



Corporate

those well versed in the Amiga's multimedia talents might be surprised to hear that this common home computer is a key tool in developing and running the interactive exhibitions.

To start with, Scala is at the heart of the museum's public information service, with Infocan channel distributing information about the museum's services and exhibits to

screens conveniently dotted around the museum.

Then there's the Scala driven touch screen display located at the heart of the Civilian Dead exhibit.

A sense of how far reaching the destruction was on an everyday basis can be gained from entering family names to discover if anyone with your surname – possibly a relative – was killed in the German bombing campaign. Scala



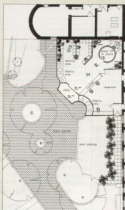
The draughtman's contract

Architecture, defined in the Oxford English Dictionary as the art or science of designing and constructing buildings, actually holds a rare position straddled between these two often uncomplimentary disciplines. Its practitioners require an understanding of the laws of physics and a grasp for detail, but the best of them will also possess the creative vision of an artist.

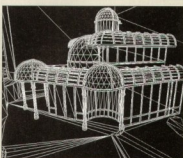
Modern architects have used computers for some time as tools in the process of design. Many were discontent, however, with the engineering-based software they were forced to work with on PCs – until someone had the bright idea of using Amigas.

Visualisation of a building project is one of the most important elements in the design because it's the stage when the architects and the property developers finally get a solid idea of what a building will look like, and of what needs adjusting.

Previously, however, the architect's clients would commission about half a dozen drawings or watercolours for this purpose, and for good quality work they would expect to pay around £2000. Now, Wales-based company Delphus Visuals offer an Amiga-based service that will revolutionise the process. Mark Thomas, the man behind the project,



This is the Wildin project, a plan for an entrance scheme which is now under construction. Delphus Visual's Mark Thomas built his models on the basis of plans, elevations and site survey drawings drawn at 1:100 scale, giving him enough detail to assess the complexity of the computer model



The wire frame stage can give the architect a first impression of the plans, then it was surfaced and textured accurately enough to depict the finishes of things like carpets, ceilings, blockwork and even the specific detail of the reception desk.

has a background in the profession having studied at Cardiff University's Welsh School of architecture for two years. Dissatisfaction with traditional methods of visualisation put him at odds with the established method of work, and this ultimately led him to

abandon his course before completion. "I felt I was restricted by the tools they were using," Thomas explained to Amiga Computing. "I was limited by using AutoCad and traditional PC-based tools."

So where did the Amiga come in, then?

contender

The Amiga is no office workhorse, but its talents have sold it to companies working in all walks of life. Gareth Lofthouse introduces a special focus series



A visitor using an Amiga-based touchscreen presentation

interprets information sent by the touch screen and then Superbase searches through its database for entries matching the name it uses. It's a simple but effective use of technology that brings history into a closer perspective.

FILM FOOTAGE

Even more impressive is the impact White Knight Technology's Broadcaster Elite, the non-linear editing tool, has had on the museum's use of archive film footage. According to the head of the museum's audio-visual department, Alan Morrow, it has opened up whole new possibilities when it comes to their video displays. According to Morrow, a short

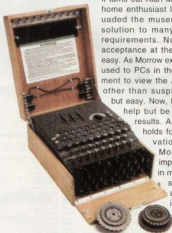
film about life on the home front during the second world war, for example, was much more easily compiled and edited using Broadcaster Elite than it would have been using other systems. And this sort of display is integral to many of the exhibitions to be found in the museum.

In addition, Broadcaster was used in the mock wartime cinema, in which trailers for films audiences would have been watching in the 1940s are edited together to give visitors an authentic experience.

The War Museum has also used Bars and Pipes to create music for presentations, plus Deluxe Paint and Morph Plus for animation. So why did the bosses decide to invest so much in the Amiga?

As is often the case with these stories,

Scala is at the heart of the public information service, with infochannel distributing information about the museum's services and exhibits to screens dotted around the museum



it turns out Alan Morrow was an Amiga home enthusiast long before he persuaded the museum it was the best solution to many of its multimedia requirements. Not that the Amiga's acceptance at the museum has been easy. As Morrow explains, getting people used to PCs in the corporate environment to view the Amiga with anything other than suspicion was anything but easy. Now, however, they cannot help but be impressed with the results. Asked what the future holds for technological innovation in museums,

Morrow stresses the importance of multimedia in making exhibits accessible. Touchscreens are becoming very important because they inform visitors while allowing them to proceed at their own pace, so there are now 25 in the museum.

Technology can also give visitors more information and more choices. The Imperial War Museum has the second largest 20th century English art collection in the country, for example, but space limitations dictate that only a small number of paintings can be exhibited at any one time. Now, however, people can look at pictures they particularly want to see on computer.

Some might argue that the multimedia museums are going for popular gloss and sensation at the expense of content. Morrow argues that this is completely untrue for the Imperial War Museum, and points out that the AV department has always avoided flashy graphics and gimmicks. And, he adds, the museum's subject matter is so strong and extensive it can only benefit from imaginative but sensitive presentation.



"CAD - computer aided design - is for engineers to do their plans on. It's all done in 2D and it doesn't apply to architecture in the slightest, but that's what we've been forced to use on the PC."

But then Thomas got Imagine for his Amiga, and realised the potential it gave him for a new approach. "Imagine is a 3D modeller that's based round space, and space is the sole tool of the



At the final stage the artist specifies how the building is to be 'photographed' and what areas the animation will walk clients through. A few days later the animations were complete and the entire presentation was put to video, again allowing the architect to have input into the editing.

architect - controlling it, moving through it. And there are other things in programs like Imagine that are so much more applicable, like the ability to add textures and lighting."

Thomas explained how it suits the architects because they can think and work naturally in 3D, but it is equally helpful for the clients. "The property developers like it because we can work very flexibly and can be flexible about price." He went on: "It's basically a lot to do with impact. It allows the client to walk through a building and get a good idea of it. You see, when architects are looking at each other's plans, even we can find it difficult to envisage really what the designer has in his mind. So with the old way of doing things the clients are often left clueless."

The models are put on VHS tape and animated with accompanying music and titles, and the clients can take it away as something tangible to relate to. It's so detailed that a client's first reaction might be something like: "Oh, the chairs are the wrong colour," yet it's so flexible that Thomas can make small alterations within minutes.

Once again, then, the Amiga is offering a company high class presentation tools at a reasonable price. Mark Thomas concludes: "To be able to have affordable computer graphics, which at the end of the day is still regarded as high impact imagery, is a key attraction. Anyone who has the opportunity to get that jumps at the chance."

Contacts

Delphus Visuals:

01633 613300

White Knight Technology:

01920 822321

Scala:

01920 444294

It happens twice a year. The European Computer Trade Show, a place where the industries' movers and shakers exhibit their latest products for the retailers, journalists and other trade parties all interested in checking out the future of the computer entertainment industry.

Over the years it has become more an exercise in the large companies flashing their bigger bank balance over their smaller competitors in the form of flashy stands, glossy demonstrations, and the hiring of attractive bimbos and himbos to adorn the stands. Initially it was a show designed for the European market, but it has grown so much that it attracts visitors from much further afield. And this year's show was bigger and noisier than ever, with over 114 exhibitors and 10,359 visitors over the three day stint.

OFFENSIVE

The build-up seemed longer than usual too, with adverts in the trade paper, CTW, spanning over four or five weeks. The adverts themselves have also become more alarming, with companies relying on shock tactics more than flagging their products. Take, for example, the show edition of CTW. First page news was the revelation that CTW were calling upon the industry to take steps against Virgin Interactive, saying that they sicken with their offensive advertisements. Then turn the page and there it is, an ad from Virgin showing black and white movie footage of a shot of an eyeball being cut with a razor blade from Bunuel's, *Un Chien Andalou*. It was yet another marketing ploy.

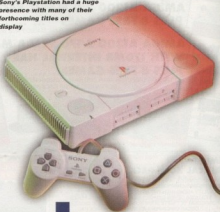
Turn the pages still further and you come across a Gametek advertisement for their latest road racer with a picture depicting a crash helmet with blood pouring out. Then a picture of two young, trashed-looking teenagers with blood splattered from their noses to advertise the game *Wipeout*. And finally, an SCI ad with a blonde "crumpet" (sic) posed suggestively over their PR manager with the slogan "...we don't have to blow our

Virtual glasses played a significant part - some see it as the way forward



PlayStation

Sony's PlayStation had a huge presence with many of their forthcoming titles on display



The show must



Conversions of Amiga hit *Super Skidmarks* are in the offing on other formats

own trumpet." Okay, so they did their job in creating a pre-show stir but when it came down to it, was the actual event any good? Well, Virgin continued their movie theme with an impressive stand in the form of a cinema, complete with ush-erettes. Acclaim had an eye-catching stand promoting their latest Batman game with a lifesize bat mobile, and the GT Interactive suite had a theme of heaven with angels on the reception desk. Impressive though it is, a lot is merely gloss and a visitor would do well to take more than a cursory glance to see if the actual product is any good.

On the Amiga side of things, it was more positive than you might expect for a platform that's just getting back on its feet. No stand from Amiga Technologies though, which although unsurprising was a little disappointing according to some. Product-wise, on the other hand, things did look brighter.

Longstanding supporters of the Amiga, Team 17, displayed some of the few actual Amiga machines of the show,

and demonstrated on them were *Worms* and *Alien Breed 3D*. Around the machines, people flocked to see the games and it was good to see that Amiga titles still generated as much



One of the more distinctive ads from CTW before the show

Standing ovation

ECTS is a trade show, although looking around you wouldn't think so with the huge, expensive stands and gimmicks that are more geared to a consumer event. Ah well, it's their money and at least it provides entertainment for the visitor. *Amiga Computing* looks at some of the highlights.

Virgin – Virgin, not renowned for their subtlety, opted for a cinema-style front to their stand with games actually featured as film presentations. The theme was continued with usherettes.

Acclaim – Acclaim's stand featured a lifesize bat mobile spotlighted for dramatic effect. The other side of the display had a more sporty feel with appearances from The Harlem Globe trotters and The London Monarchs.

GT Interactive – a rather foreboding entrance led to GT's original suite which was themed around heaven.

Receptionists were dressed as angels and the ethereal music provided a nice change to the hustle and noise outside

Warner Interactive – taking up a large space, we found Warner Interactive. Crammed with their latest titles, their was little room for anything more. Unfortunately, there were no Amigas in sight despite their release schedule showing both Flight of the Amazon Queen and The Chaos Engine 2.

Microvalue Flair – a graffiti-style stand was used to promote their forthcoming game, Shockwaves Express. Nul points.

The entertainment computer industry is forever changing. One way to keep up with it is to visit the bi-annual industry event, the European Computer Trade Show. Tina Hackett reports on the latest

GO ON

interest as some of the new generation stuff.

Amiga Computing took the opportunity to talk to Andy Davidson, programmer of Worms, to find out his views on the show and the Amiga. He explained that Worms was produced on the Amiga and without this machine, the market would be a lot worse off: "The Amiga has been responsible for the majority of original games. It's a cheap, easy-to-use computer and without it there will be no new talent entering the market." As for the new generation of machines he stated: "There are games coming out for them that are good but a lot are very unoriginal titles simply dressed up. It doesn't matter how many silicon graphics you chuck at a product, it's gameplay that matters."

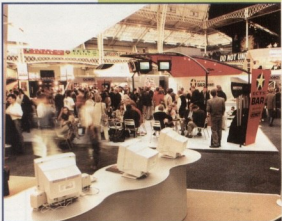
Reassuring stuff, especially when you take a look at some of the visually stunning products on display. Beneath the hi-tech appearance it's gameplay that counts, and it was particularly interesting to see that among all these

Longstanding supporters of the Amiga, Team 17, displayed some of the few actual Amiga machines of the show

games for the PCs and consoles are titles that were on the Amiga first. At the risk of sounding like a gushing Amigaphile, it was pretty good to see things like Super Skidmarks and Sensible Soccer all being converted onto the new platforms, and it goes to show that Amiga owners are trusted for their opinions on games.

Binary Emotion's Ian Jolly was at the show and he commented: "If Amiga owners don't like a game then it's no good. They test the market."

So Sensible Soccer now has rendered scenes and commentary. So what? It's the same game. It was also ironic to see that the latest game for the PlayStation is Lemmings. It's been



Once again, Ocean sponsored the ECTS bar. Their deal with Team 17 resulted in a joint stand



Over the three days a record attendance of 10,359 was clocked up



ECTS played host to 114 exhibitors with some of the biggest names in the computer industry

altered to make it 3D but the gameplay is pretty much the same.

Other games that are being released on the Amiga could have been shown, but disappointingly their PC counterparts were on display instead. These included Ascon's racing management game, Pole Position, which already looks rather impressive on the PC. We are assured, however, that the Amiga version should look pretty much the same, although the rendered race scenes have yet to be finalised. Domark had the eagerly-awaited Championship Manager 2 and Total Football on display, the Amiga versions of which will be seen in the next few months. Total Football will be reaching many formats, and Acclaim's show promotion for their SNES/Mega Drive release was backed up with a guest appearance from Les Ferdinand.

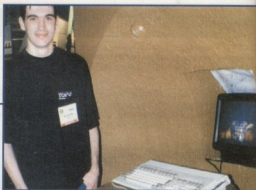
CLONES

Ubisoft's surprise announcement to bring Street Racer to the Amiga, was supposed to be backed up with a demo. However, the Amiga version wasn't ready in time but a chat with the programmer from developers, Vivid Image, confirmed that the version is now on its way, and he intends to keep it on two disks with very limited disk swapping – something they achieved previously with First Samurai. At the moment there will definitely be a two-player split screen option, but he is also working on how to keep the four-player split screen so the Mega Drive version is compromised as little as possible.

If there's a record for how many Amiga products you can have on one stand it would go to Guildhall Leisure Services. Offering a Software Production and Sales service to companies such as Black Magic, Acid Software and Audiogenic, there was a wealth of Amiga titles on display. Two of these were the latest Doom clones, Fears by Manyk and Gloom by Black Magic. When asked if they found it difficult to promote two very similar products Michael Crook offered: "Not at all, they are both

The Amiga has been responsible for the majority of original games. It's a cheap, easy-to-use computer and without it there will be no new talent entering the market

Developer of worms, Andy Davidson, explains how the Amiga is responsible for a lot of the originality in the games market



very different and are from two separate companies. We promote them both equally." Both titles will be up against competition from Team 17's Alien Breed 3D and Black Legend's Citadel, and no doubt countless others that are all trying to create the PC's most popular game, Doom on the Amiga.

On the more serious side, educational gurus Ten out of Ten Software pledged continued support to the Amiga with a packed release schedule for the next quarter. Titles in development include Spelling and Punctuation, Italian, Spanish and Latin.

Leisuresoft took a stand to promote their latest range of peripherals and accessories and are currently in the process of negotiating a contract for distribution rights to the new A1200 bundle and Amiga Technologies Virtual glasses. Both products were on display. Show announcements included the release of their new Amiga mouse and Tecnoplus joystick.

Leisuresoft were not the only stand to display virtual glasses. The Virtual i-glasses were among other competitors all claiming to immerse the user in a mind-blowing virtual reality experience. The other headsets on show included those from Forte Technologies who announced that they were seeking an injunction against VictorMaxx Technologies, developers of the CyberMaxx headset, claiming they have infringed patent. With all the hype surrounding these virtual reality headsets, it's indicative of the future that people are seeing this technology as the way forward for gaming.

As far as the other platforms fared,

Microsoft were present to promote themselves as games publishers. Emphasis was on their first action game, Fury, sales of which they hope will reach 100,000 in the UK before Christmas. Sony announced their presence in as noisy a way as last Spring's show, and although they took up less space than before, they promoted the launch of their PlayStation with a great many titles on display for visitors to try out.

THE RIGHT TIME

ECTS is an event awash with the latest rumours. One such rumour was that Digital Image Design had been approached by Amiga Technologies to develop a 3D chip for the CD32, but Amiga Technologies state there is no foundation behind this but plans may be made for the machine after Christmas, with changes in specifications and cosmetic design.

We approached Amiga Technologies to get their view on the show. When asked why they didn't exhibit, AT answered that they did not feel it was the right time, but they will exhibit at Spring's ECTS. Jonathan Anderson commented: "We attended the show and had meetings with a large number of software publishers to see if they would port over some of their PC CD-ROM titles to the Amiga. The initial reaction was better than we thought it would be and we will be in meetings over the next two or three weeks to discuss this. Everyone has to be convinced that we mean business and they need to see the product on the shelves."

Forward thinking

The Durlacher report was released to coincide with the show and revealed some interesting findings on the Computer and Video Games Industry. It found that both the European market and UK alike have both suffered a drop in sales but predict growth for 1996. The UK games market has fallen from £797 million in 1993 to £509 million in 1995. However, the report forecasts a rise of 18 per cent which means a retail sales level of £601 million.

What was particularly surprising was how well CD32 sales have held considering Commodore's demise. The CD32 still holds 4.17 per cent of the UK CD games market above the CDI and the Mega CD. There was no real surprise to learn that IBM PCs corner 66 per cent of the UK home computer, but there is still a healthy 32.5 per cent share for the Amiga.

On the company side of things, it was found that Virgin had the biggest market share, followed by US Gold and then MicroProse.



Revered developers Bullfrog are working on a number of new PC games such as Theme Hospital. Who knows whether we could see it on the Amiga



Ascon's impressive Pole Position was demonstrated on the PC - let's hope the Amiga version looks pretty much the same

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Hypernauts are ecologically sound, squeaky clean warriors for the good of mother earth



"Crush them", the chief benchman for the Triad ejaculates



Looking somewhat like extras from War of the Worlds, the Triads' evil robot minions advance menacingly

Foundation Imaging, familiar to readers of any Amiga magazine as the most famous of all the users of the Amiga in a professional situation, have hit paydirt once more. Scheduled for launch in the autumn of 1996, *Hypernauts* will be a half-hour, weekly television show for Saturday morning telly in the States. The show hasn't been bought up for this side of the pond yet, but I think it's likely, given the success of *Babylon 5* on both sides of the Atlantic, that it will appear on our screens fairly soon thereafter.

The basic storyline will be familiar to kids the world over. Each story is based around the same team of three human teenagers and their alien friend (the usual guy in a suit), helping to keep the galaxy safe for the good guys. The bad guys in this story are a bunch of robotic enemies controlled by a group of three really nasty aliens who are in telepathic control of the robots, and who are also linked together telepathically. Each week, our gang will battle their gang in time-honoured fashion, presumably with the usual outcome.

The show will differ from *Babylon 5* in one important respect. Whereas *Babylon 5* is mainly set in space, which is very kind to computer graphics – being easy on things like physics

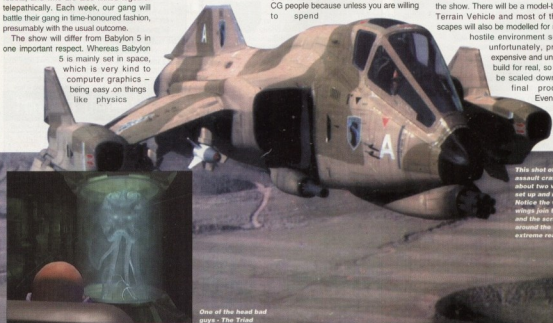
HYPER!

Ben Vost takes a sneak preview of a new Foundation Imaging TV show

and organic structures – *Hypernauts* will have most of the action based on the ground. This poses a very big problem for CG people because unless you are willing to spend

many tens of thousands of pounds on the appropriate software and hardware, generating graphics that look like real trees, grass, water, etc. is difficult, and when it comes to interaction with those elements, almost impossible.

Therefore, à la *Thunderbirds*, miniatures will be used for certain elements of the show. There will be a model-based All Terrain Vehicle and most of the landscapes will also be modelled for real. The hostile environment suits will, unfortunately, prove too expensive and unwieldy to build for real, so they will be scaled down for the final production. Even so, they



This shot of the *Bison* assault craft took about two weeks to set up and render. Notice the way the wings join the body and the scratches around the cockpit for extreme realism

One of the head bad guys - The Triad



The series will be airing in the autumn of 1996 in America, UK status is as yet uncertain

will still be about 12 feet high.

Obviously, if there was no advance on Thunderbirds, Hypernaughts wouldn't be very exciting, but Foundation Imaging intend to combine CG shots with the miniature landscapes they build to enhance the look and feel of the sets. This should help to get around some of the normal problems of apparent scale that made Thunderbirds look so very... well, very modelled.

REALISM

However, this has meant a lot more work for the CG people, ensuring that lighting angles and intensities are correct and that the computer-based models don't simply look overlaid onto the miniature landscapes. At the bottom of the opposite page you will see a test shot of one of the aircraft in the show, called a Bison, which has been composited over footage of the Mojave desert in North America. This picture has been taken from a high resolution printout of the original shot, but even with



A perfect landing, but less than perfect terrain indicates the need to match CG models with live action

these limitations the shot looks impressive. Also impressive is the launch sequence for the drop ship from the mothership our gang live on. The idea is based on a rail-launcher/magnetic accelerator approach and really needs to be seen for full effect. The drop ship sits in a tunnel and accelerates out of the belly of the mothership at great speed.

The series is going to consist of 13 half-hour episodes, each with around 70 CG effects shots, which is nearly twice as many as in a standard episode of Babylon 5, and in half-an-hour as opposed to three quarters of an hour. This



The hypernaughts drop ship plunges through the launch accelerator tunnel

also means there are more in one single show than in the first 13 of the 22 episodes of the first season of Babylon 5 put together. This means that together with the punishing CG schedule that J Michael Straczynski has set for the third season of Babylon 5, Ron Thornton and his team will really have their work cut out for them.

Amiga



RIP Amiga?

Unfortunately, owing to the prohibitive cost and relative slowness of the hardware, Foundation Imaging no longer use the Amiga in any great way for rendering or modelling. Instead, as befitting a company with as much work to do as Foundation Imaging, they use a mixture of three DEC Alphas, nine Pentiums and a couple of MIPS machines running LightWave for the rendering of the CGI

effects in Babylon 5 and Hypernaughts. These machines sit in the 'Engine Room', a specially-designed part of Foundation Imaging's offices that is air filtered and conditioned to make the best possible environment for running the machines. In the only thing the Amigas now do is look after certain aspects of the network - a bit of a turnaround.

The team behind it all, lead by Ron Thornton



This impressive pair were going to be the environment suits, but costs have forced changes to the way they will look

Many thanks to Alan Marques at Magic Camera Computer for getting us these exclusive shots.

Aminet ?



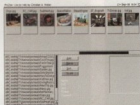
The number of these things now-a-days is jumping higher than a kangaroo on steroids, but since over 500Mb of new Amiga public domain software has been uploaded to the Aminet, they have got a good excuse and at least it proves that Amiga users are still highly active and buoyant – the total

number of uploaded programs recently topped 20,000.

As is usual with Aminet CDs, they try to concentrate on one specific area, and this CD's area is clipart. I have been using Aminet CDs for a good while but usually I use the excellent find tool and AmigaGuide combination. However, seeing I have to do a review, I thought I would have a little nose around all those extra drawers.

It turned out to be well worth my while, because in the list drawer there are a number of AmigaGuides. One allows you to view the most downloaded, and therefore most popular programs for various categories.

The demo guide again organises demos in terms of both their quality and what machines they will run on. So if you own an A4000 you can watch demos safe in the knowledge



Thumbnail viewing of Aminet's Pictures

that they will not crash your machine.

The one thing that grabbed my attention was the PicZoo button. This is a separate program that lets you view all the pictures in a certain category as colour thumbnails, and if you then want to see the full image just click on the appropriate thumbnail. The only downer is that you must make sure you have the NTSC monitor driver running because it insists on it. It is hard to sum up this Aminet

CD as this is the seventh one but all the material is new or updated. If you cannot find anything on this CD that is of use or interest to you, you probably don't own a computer – but then you could use it as a Frisbee!

The bottom line

Product: Aminet 7
Supplier: Emerald Creative
Technology
Price: £14.95
Phone: 0181-715 8866

Ease of use	9
Implementation	9
Value for money	9
Overall	9

Laser guidance

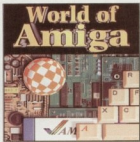
World of Amiga

Done by the same people who did the imaginatively and strangely similarly titled World of Video (see next page), you can enter and lose yourself in the staggering World of Amiga. This is similar to the World of Video in that it is a general CD containing a wide range of programs, games and data files for you to play about with.

All the data files are split into their appropriate drawers and I was a little worried that there was going to be a lot of duplication with the World of Video CD. However, as it happens, only a few of the better animations are on both CDs.

Along with a good selection of animations there is a token picture section and a couple of good programming guides for assembler and ARexx. The assembler guide shows you how to code which is a very good starting point if you want to learn how to write system friendly demos and games.

There is a wide selection of music modules and samples, with most of the samples being of a good quality.



One problem I found with the music section is that the tool types set-up for listening to the modules and samples are wrong. If you double-click on any of the icons you will simply get the cannot run blardy blar program thrown in your face.

This might not be such a problem because there is a huge collection of public domain programs on the disc, covering every possible subject range. So if you want to play any of the modules you can go off and locate either a demo or

It's CD round up time again. This month Neil Mohr takes a gander at an excellent clip art collection, the latest Aminet CD and a couple of titles from US Dreams

OctaMED 5 or run EaglePlayer.

Overall this CD is okay. Everything can be run from the Workbench, except for the problems with the module and sample's tool types. If you have just bought a CD drive then this would be an

interesting CD to get. There is plenty of stuff to look at, and plenty of programs to play about with, and all at a very reasonable price.

The bottom line

Product: World of Amiga
Supplier: US Dreams
Price: £14.99
Phone: 01483 756813

Ease of use	6
Implementation	7
Value for money	8
Overall	7



Big robots, part of the Amiga world?

Phase One



There is a readme file on this CD that is expressing the authors' opinion about the quality of a number of current CD collections and the people that are producing them. The drive of the readme is that the quality is absolutely minimum, basically meaning these CDs are shovel-ware.

You may have actually gone out and bought some of these CDs – if you have you will know what I am talking about. One problem inherent with CD collections is that there is so much space on them, proper organisation of the material is essential, otherwise it becomes impossible for the user to be able to find anything of any relevance.

In the worse cases you get a directory containing a few hundred files – that is if you're lucky – with irreverently named files such as x1898.dms. If you want to find anything you have to first trundle off and locate an index, then search for any relevant material, then open a shell, and then manually un-dms the file to a floppy. The total process takes anything up to 10 minutes for a single disk.

Everything I have just said, I am delighted to say, is completely and utterly irrelevant to the Phase One CD. Indeed, if anything, the Phase One CD is a joy to use. All the files are intelligently and intuitively categorised into relevant drawers with relevant file names.

For instance, you want to find some clipart of a frog. Simply go into the clipart/animals/reptiles/frogs and you can either view a collection of thumb nail previews or the individual images. The actual file names represent what the picture is,

though I'm not quite so sure what the homelyload picoy is all about.

I suppose I should actually tell you what is on this CD. The Phase One CD is a collection of quality clipart, fonts and pictures for all you DTP users out there. The collection has been especially organised for Amiga users, so all the drawers and preview files can be accessed by icons.

The actual clipart on the CD comes in a number of flavours – black and white IFF, scalable encapsulated postscript along with IFF previews, and a collection of colour IFF images. The images are not available in every format, but most packages will accept all formats, and if you have trouble with EPS clipart there are IFF versions provided. All the clipart is of a good quality and they are at a high resolution, including the EPS IFF alternatives.

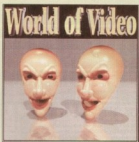
Trying to get any document to look original is going to require access to new fonts, and this CD has got its fair share of them. Covering Computographic, Type One, ProDraw and Coloured IFF clip fonts, most of the fonts are available in all the scalable formats. One point to note is that every font comes with an IFF preview so you can quickly get an idea of what each font looks like, without having to mess about loading it into any package.

Of less use to DTP users, but of interest to video people, are the images on the CD. There is well over 70Mb worth of high resolution full overscan images, all perfect as video backdrops, and again, each properly categorised.

Other things to find on this CD are updates for PageStream 2.21 and version 3 a to h, to OpalVision and Typesmith. There are even full demos for both Typesmith and PageStream. If you happen to be using a CDTV to access the CD, Parnet is included ready to run.

This is an excellent CD. Not only is it full to the brim of quality fonts and clipart but it is superbly organised. It may not have the clever search options of the Amnet disks, but if you are actually going to be using this thing regularly, it is going to be simpler just to follow the drawer organisation. At the end of the day this CD is virtually impossible to find fault with – if you need clipart, fonts or images you need this CD.

World of Video



Not it's not a picture collection of video recorders, and it does not tell you how to care for and love your video. It is in fact a CD dedicated to all things animated and screen related.

This is one of those general Amiga collections, covering a wide selection of areas in the video world. One large chunk of the CD is taken up with Amiga animations, all of which are excellent. Probably the highlight for me was the fact it contains the complete Eric Schwartz collection, along with a number of Craig Collins' excellent animations, such as Last Stand on Hoth and The Ad.

There are also three Rise of the Robots animations which are AGA only, along with a number of Mpegs. Unfortunately, the supplied Mpeg interface flatly refused to play any of the Mpegs, meaning you had to resort to manually running them from a shell. If you are unfamiliar with the Amiga's shell, and the Mpeg player, this is easier said than done.

There are icons for some of the larger animations that allow you to play them spooled off the CD, therefore requiring less memory. However, the problem with this was that the program simply crashed on our A4000. Therefore, if you are low on memory you would have to use Biganim or Viewek yourself.

As usual there are pictures covering various subjects, none of which are at all lewd – just the normal animals, fantasy, plenty of cartoons, and a large raytraced section. In their own section are a collection of good quality high resolution 24-bit PAL backdrops for use in any presentation or video work you want. These include mixture of both IFF and Jpeg, along with HAM8 thumbnail previews.

Probably of more use to raytracing fanatics is a collection of high resolution textures. There is a thumbnail Ham8 preview provided so you can get a quick idea of what they look like, and again there is a mixture of IFFs and Jpegs – the IFFs are either at 24 or 8-bit depths. The quality of both the backdrops and textures are excellent, the Jpeg backdrops are very good quality, but unfortunately, the same cannot be said for the Jpeged textures.

On top of all this there is around 135Mb worth of general and graphic-specific programs for you to mess around with, ranging from commercial and shareware demos, to fully usable public domain programs and utilities.

If you have only ever seen a couple of Eric Schwartz animations, this CD is worth buying just to get his complete collection, not to mention the Craig Collins animations. Overall it's not a bad collection of video-related stuff, not concentrating on any one area but giving a good general spread of material. If you only have a passing interest in Amiga animation this CD is worth considering.



Colour indexes are a very handy addition

The bottom line

Product: Phase One
Supplier:
E.M.Computergraphic
Price: £24.99 + £1 p+p
Phone: 01255 431389

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

The bottom line

Product: World of Video
Supplier: US Dreams
Price: £14.99
Phone: 01483 756813

Ease of use	7
Implementation	7
Value for money	8
Overall	7

"If it sounds like I raved, then I've communicated successfully exactly how groovy this product is".

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CreateFile	227	1073	k/sec
ReadFile	244	1363	k/sec
Seek and write 4bytes (start & end)			
x100	53.6 Sec	4.4 Sec	

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"Without AFS ! -no thanks"

Time marches on, and what once would have been considered top of the range now looks a bit stinky (too much Renn & Stimpy). To be fair to the old Motorola 68020, tens years ago it could be found in top-of-the-range UNIX work stations produced by the likes of Sun and HP, and would have cost as much as the Pentium.

But processor speed continues on its exponential growth, and if you stand around, no-one else is going to wait for you to catch up. Anyone who has attempted any sort of ray tracing will know you can never have a fast enough processor, and even programs such as Wordworth and Final Writer can grind to a halt if documents have a high graphics contents.

So what do you do if your A1200 isn't making the power grade? Well, Power Computing might just have the solution for you in the form of the Falcon.

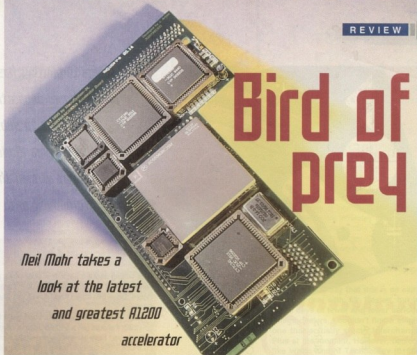
When we first heard of the Falcon 040/060 board our first worry was how on earth they were going to keep the thing cool enough, because the 040 is a very hot chip. We had visions of having to prop the 1200 up on stilts so you could fit a fan underneath it to keep everything cool, but as it turns out the actual solution is very neat.

Unlike other A1200 trapdoor accelerators, fitting the Falcon will invalidate your warranty, as fitting the fan requires you to remove the top casing off your Amiga. This is actually the most time-consuming part of the operation, because removing all those screws does take some time. Once you have got the casing off and removed the keyboard, you can fit the fan.

HOLE-LESS

In the actual documentation there appears to be another screw hole in the Amiga's bottom casing, but on all our A1200s no such second screw hole exists. The only available one is one of the bolt holes used to hold the disk drive in place. As the only alternative is to start drilling holes through the casing, shield and motherboard, you have to remove the disk drive's mount. This does not cause too much of a problem as the disk drive is still held firmly in place by a couple of other bolts.

Once the fan has been screwed into place there is just the matter of forcing the board into the expansion slot. Now I've seen some pretty tight fitting boards in my time, particularly some of the bigger 030



boards, but the Falcon uses every spare millimetre of trapdoor space.

When you come to fit it, angle the edge connector into place, make sure everything is lined up and then apply a 'reasonable' force. If you make sure everything is square the board should slot nicely into place, but it is such a tight squeeze you will need to push the other end down into place – and if you want to replace the trapdoor cover it is necessary to cut a large square out of it, so the memory SIMM can fit. Personally, I did not bother to replace the door.

One interesting point is that the Falcon will not even work unless you have 4Mb of memory. Therefore, you need at least a 2Mb SIMM to get it to work. I think this is actually a good point because there is very little speed increase gained from running accelerators without FastRAM.

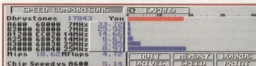
In use, everything worked wonderfully. Windows zipped about, Jpegs displayed in no time, and all the recent games I tried such as Super SkidMarks, Pinball illusions, UFO and PGA European Tour worked with no problem at all. Even the fan is fairly quiet.

This is a great bit of kit, the only down

If you examine the lovely artistic photograph of the Falcon board you may notice a very suspicious looking square block skulking at the end. This is, in fact, a SCSI II/III interface – yes that is correct, a SCSI III connector. Don't know what it is, but it sounds damn impressive.

The only down side to this is that the connector you have to get is a half pitch 50-pin connector which is a little unusual, but Power can supply all the necessary leads.

One thing that took me by surprise is that there is no real-time clock on the board. This is probably due to the fact that there is no room on the board, but just one of those things you take for granted, and when your Workbench clock starts displaying 5.14pm just after lunch time it is a bit of a shock to the system as you want to go home.



It's the obligatory Sysinfo screen grab. Pretty much says it all I think

side being that it's not the sort of board you can be whipping in and out of your Amiga because to remove the board you need to lever the SCSI connector out of the trapdoor.

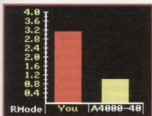
Power supply the board in a number of configurations depending on what your needs are and how deep your pockets are. You can purchase a bare board and get the processor yourself. The 040 options consist of either a full 25 Mhz 040 chip or the LC version, which omits the MMU. So if you don't need to use virtual memory or run Enforcer, you can save 80 quid. The final option is the full 060 memory version which will run up to 70 times as fast as a standard A1200!

Un-optional extras

The bottom line

Product: Falcon
Supplier: Power Computing
Price: Bare: £319
040lc: £429
040: £499
060: £649
Phone: 01234 273000

Ease of use 8
Implementation 7
Value for money 8
Overall 8



The Falcon's memory and integer operations are actually faster than an A4000 – up to three times as fast



Mag comparison

Perfect mag July 95! Both the disks and editorial were excellent. Each month I buy *Amiga Computing* and *Amiga Shopper*. I find *Shopper* normally has very good editorial (no games!), although some of their coverdisks seem to be rather out of date (Protext 4.3). *Amiga Format* is not much better either, flogging the sensible Golf demo twice.

CU *Amiga* usually has good disks, i.e. Image/FX, but their actual magazine is a little disappointing and rather heavy on games content.

Amiga Computing seems to have got the combination near perfect. The first of your 'Utility Heaven' disks was superb. I had just installed Workbench on my new hard drive, so the Multi CX and MUI utilities were both excellent.

The format of the disks is good too. Unarchiving straight to RAM is a great idea; I rarely use a program I can't unarchive and run straight from RAM.

Mark Clatworthy, Herstmonceux

Our second letter from Mr Clatworthy in as many months. We like to think we have the balance right too. I'm pleased you liked our MUI CoverDisk - we've had a lot of mail praising it. As for the format of the disks, I hope you like the installer script that was put on our disks from the September issue, written by our erstwhile CoverDisk editor Neil Mohr.

Amiga Computing has recently become an international publication with a US edition going out to subscribers of the now-defunct Amiga World. It seems from the amount of mail the change has proved quite popular with our American cousins



PC Gamer?

I am writing about a section in your news pages in the September issue. You said that version 2.1 of the Emplant E586DX PC emulator is available and will run games such as Doom. Does this mean it will run Doom II and games like Magic Carpet, Tie Fighter and B-Wing?

What is the price and where can I get it from? Also, I have a bog standard Amiga. Do you think I should get a 540Mb internal hard drive for £174.99 or a CD-ROM drive.

Since you have started giving helpful hints and tips lately, I have a question for you. In Lure of the Temptress I have broken out of jail and gone round talking to people. I went into the wizard's house and found nothing. What else should I be doing?

In *Dune* I have defeated all the Harkonnen Fortress but the palace still stands - am I supposed to get men to do the ecology stuff? SOS please.

PS. I enjoy your mag a lot but I think it could do with a tad more games reviews. Keep up the good work.

Michael Ryan, address unknown

Unfortunately, you would need a somewhat better equipped Amiga than the one you presently have to even be able to run Emplant. For a start, the Emplant is actually a Zorro II card that fits inside a big box Amiga like an A4000, A3000 or A1500.

Secondly, it needs a very swift processor to get anything like adequate performance, I'm assuming you have a base level A1200 as you don't say in your letter. Thirdly, it also really needs a graphics card (which would also need a big box Amiga) for the display to update fast enough. But yes, if you can fulfil all these criteria, you would be able to play the games you mention, although perhaps not as well as you would on the PC you could have bought for the money you spent on your Amiga to make it possible.

As for whether you should buy a hard drive or a CD-ROM drive, there is no question that a hard drive will be of greater benefit to you. Buy a CD-ROM later, there isn't that much by way of good quality CDs yet, so you're not missing out.

I'm afraid I can't really help you out on the games tips, not being a games player, but as to your request for more games reviews, I can say that we would gladly put more games reviews in the magazine if only there were more games out there to review.

PC Amiga, Amiga PC, just like that

My system currently consists of an Amiga 1500, 1Mb RAM, two printers and a Sony TV/monitor. What would you do if you didn't know whether to buy OS3.1 or an EGS Spectrum? That's the decision I'm trying to make at the moment - I just don't know which way to go. So, if you were in my position, what would you do?

Here are my new Amiga suggestions. A range of five or six Amigas isn't going to take over a range of 20-30 PCs worldwide, so why don't some Amigas become part of the PC range. This means they could be an original Amiga and a PC in one box for about half the price of a PC computer. The machine could incorporate PC ports, a PC mouse and joystick, MS-DOS 6, Windows

95, Amiga ports, an Amiga mouse and joystick, AmigaDOS 3.1 and Workbench 3.1. If that was sold for half the price of the cheapest PC, I think Escom would get loads of customers.

For Amigas that were bought before Commodore went bankrupt, there could be plug-in modules for the A500, A500+, A600 and A1200 which would have PC ports on it and would allow standard PC cards to be plugged into the Amiga, all powered from an external PSU. All Amigas that are A1500s and above could have internal modules. These plug-in modules could also be supplied with the new A1200s to make them more expandable.

I also have some questions. Why wasn't

Comms sans modem

I am starting a disk-based BBS called OffNet which has been designed so that users with no money to buy modems can enjoy sending messages to other members. Everyone sends in their messages and I put them onto OffNet and send them out to all members.

If any of your readers are interested in joining (it's completely free, by the way), then please send your name and address, a blank disk and 50p for postage and packing to: OffNet, BBS25 Roslyn Close, St Austell, Cornwall PL25 3UN

Mark Wadham, OffNet

A brave and bold attempt Mark. Amiga Computing wishes you lots of luck in your enterprise. Interested readers should contact Mark at the address given.

Amiga who?

Dear Amiga Action, (*sic*). As the days of the Amiga looked darker the grim prospect of switching to Macintosh or – heaven preserve us – a PC with Windows became more realistic. It's a comfort to most faithful Amiga users that the Commodore liquidation has been settled and the Amiga technology is in safe hands. I, and I'm sure many other Amiga users, hope that the Amiga will keep its unique operating system and it will never lose the user-accessible power that first fascinated us.

I applaud Amiga Action's (*yp*, *sic* again) wonderful coverage of the latest Amiga news, and the wonderful coverage of the different interests in the Amiga world. I only recently discovered your magazine, quite by accident, upon the

extinction of Amiga World.) Good job! Keep it up!

I would also like to suggest an article on graphics effects, animations, and tips and tricks using such common material as Deluxe Paint III or IV. I am a game graphic producer myself and a lot of my professional tricks come from Amiga's World regular feature, Accent on Graphics. Even the average Amiga owner loves to play with DPaint and I'm sure would appreciate such an article. Remember, users of relatively inexpensive paint programs such as DPaint are much more common than LightWave users.

I have a sample disk of my artwork and am currently looking for a game to illustrate in my spare time. If Amiga Action (*he's written this not us*) is interested in including my graphics on the CoverDisk or knows of a PD programmer who needs artwork done, please write back.

Joseph Drippe, Box 495, Bellbuckle TN, USA 37020

I think Mr Drippe must have been out in the rain too long. He addressed his letter to ESP at Amiga Computing, but keeps referring to Amiga Action in the body of his letter. However, I'm sure he is talking to us because when I mentioned operating systems to the guys

Letters please

Keep those letters coming! If you can't be bothered to find a bit of paper and a stamp, why not e-mail us? Simply point your mailer to: ESP@acomp.demon.co.uk
There's a £50 pound prize for the best letter printed as an incentive

at Amiga Action they thought it was a new combat game. We've included Mr Drippe's address for anyone who fancies some American graphics for their program.

Interchangeable letter

I am writing to enquire where I can get hold of a copy of Interchange Plus v3 as mentioned by Mr Whiteley in his video column in your September issue. I am a regular reader of Amiga Computing, so keep up the good work and long live the Amiga.

Mr A J Haslett, Stevenage

I would like to say that this is an easy query to deal with, Mr. Haslett, but in these days of fewer and fewer serious Amiga dealers, I couldn't find a single one that actually stocks Interchange Plus at the moment. However, dealers like White Knight Technology (01920 822321), First Computer Centre (0113 231-9444) and Emerald Creative (0181 715-8866) do deal with American distributors so they should have little trouble finding it for you.

PD beginner

I am a 12-year old would-be programmer and am thinking of opening a PD library. I have already got plenty of PD from magazines – can I use this? I also have plenty of shareware – can I sell it? I have Wordworth 3.1SE, but how can I use it to design an advert?

Please give me info and possibly more.

Sean Talbot, Great Bookham

What you are attempting to do, Sean, will take a lot of perseverance and hard work. You can use the software you find on coverdisks, but only titles which are listed as being public domain or shareware software. If you check the documenta-

tion for every program you want to sell, you should be able to determine whether you will be allowed to include it in your library or not.

One thing to consider getting would be a modem so that you can get software from bulletin boards like 01 for Amiga or the Aminoet sites on the Internet. Advertising in a publication like Amiga Computing is not cheap, but you can print out an ad from Wordworth and send it in for the artwork to be recreated from your layout here. Make sure your spelling and grammar are correct, because otherwise your ad will not look professional and you won't get many customers. Finally, if you do wish to set up a PD library, I wish you the best of luck.

Commodore's saga reported on British TV news? Will all Amiga software run on the new A1200s? Does OS3.1 allow you to run Windows programs on Workbench? Does it allow more software to be run than Workbench 2? Does the Amiga 1500 have a SCSI port, allowing a CD-ROM to be plugged in?

Tony Hall, Gloucester

To take your points in order: Buy OS3.1, but be aware that it really needs a hard drive. You don't have the memory or monitor necessary to run an EGS Spectrum and you wouldn't get full benefit from it without OS3.1 anyway. The Spectrum really needs a minimum of

4Mb RAM to work to its best advantage and a proper multiscan monitor. This would also mean that you would need to buy a flicker fixer for your A1500 so that you could display normal Amiga graphics on the multiscan monitor, along with the Spectrum's graphics.

There is a fatal flaw in your suggestion, as appealing as it seems. The cheapest Amiga is officially about £400, the cheapest (reasonable) PC about £600 including VAT.

How would any company be offered a combined package for around the £300 mark? Also, the ability to plug in PC cards is only really useful if there is driver software written to take

advantage of them for the Amiga. Commodore's saga wasn't reported on British TV news because it wasn't important enough to anyone other than Amiga owners.

No, you would need a PC emulator to allow you to run Windows programs on your Amiga.

Sort of. There are programs that require WB3.x to run, such as datatypes.

Not as standard, as I'm sure you already know. You can buy a hard drive controller card which has an external SCSI port or alternatively, you can buy an internal CD-ROM drive and put it in the 514" bay of your machine and attach it to the SCSI controller internally.

Liana

Are you in need of a fast and very connection between two Amiga's? Liana, the low-cost network solution, is exactly what you want! Just plug it in, install the software, and it runs! Nothing could be easier than that. Liana is the network solution for those with a small budget and big needs. You can even share your hard drives and printers.

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Pablo, was in the (German) magazine 'Amiga Magazine'

(Issue 5/94) test for video encoders.

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- Monitor file compliant with Systems 2.x or higher, resolution selectable using screenmode requester
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2 MB

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Problem programs



I own an A1200 with a 420Mb external hard drive. Whenever I try to run games off my external hard drive they have crashed graphics, but on my friend's internal hard drive the games work fine – why is this?

I have also been trying to run some of my older coverdisk programs, but when I try to run them off the hard drive I get the message *software error 80000005 suspend or reboot*.

If I reboot and then change the chip type to original they work fine. Would they work on an internal drive or do you still have to change the chipset to original?

Keith Whitfield, Kent



A lot of older games and programs that were originally written on the A500 and A2000 took a lot of things for granted with regards to the OS and the graphics hardware. When the A1200 came out with its new OS and graphics hardware, many of the older Amiga programs ceased to work, as they were doing things the new graphics hardware did not like.

One of the side effects is the crashed graphics effect you are seeing. The AGA chipset can display a huge number of new screen modes, but as older programs are assuming they will be run on the old chipset, all the graphics appear corrupt.

When you switch to *original* chipset the A1200 tries it's best to look like a normal A500, which is why older programs will work. If you still have problems you can try turning off the CPU cache in the early startup menu, accessed by holding down both the mouse buttons when you reset your machine. Or try any of the numerous degrader programs such as TUDE.

Running the games off an internal or external drive should make no difference. You do not say what Amiga your friend has. If they have an A1200 then perhaps they have changed the way the program starts or the computer boots up.



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Harrowing hard drives



I have a standard A600 to which I recently added a Gasteiner 120Mb hard drive. The problem I am having is that I now cannot run any of my 1Mb software as the computer keeps saying it does not have enough memory available, even though it does from floppy.

I contacted Gasteiner and, although they were very polite, they were of little help. The engineer did tell me that the hard drive uses up some of the RAM, so 1Mb games will not run from it – even though they do install perfectly. He said the only way to cure this is to add more memory.

Is there any way to get the hard drive to release this memory as it loads in programs? Or are there any other ways of adding extra memory considering the trap door is occupied?

If I cannot add any more memory is there any way of connecting the hard drive through the PCMCIA slot?

D Simmons, Herts



It is true that each hard drive partition you have requires extra memory, for things like disk buffers. The disk buffers help to increase the speed of access to the hard drive but each one uses memory, so the more partitions you have the more memory you will lose.

Generally, you only need two partitions – one to hold your Workbench

files on and the other to hold, well, your other files. Using the *HDToolBox* utility, if you select partition drive and then click on advanced options, you can specify the number of buffers that should be allocated. This should normally be around 32 – any less or much more slows access.

The best chance you have of getting a game to run off your hard drive is to reset your machine holding both the mouse keys down. Then select *boot with no startup-sequence*, type *assign ENV: ENVARC:* and then *loadwb*.

If your games still will not load you can gain a few more K by typing *addbuffers -50*. This removes the hard drive's buffers and can gain you about 60K.

After all that, if the games still will not load the only way is for you to buy some extra memory. In your letter you say your trapdoor slot is taken, but a

properly fitted hard drive should not do this. Perhaps you should double check how the hard drive has been fitted.

The only other options are either to buy a PCMCIA memory card, which you will need to look in a PC magazine for, or buy a bear Overdrive mechanism which fits into the PCMCIA slot. Both of these, however, are far more expensive than just getting hold of a A600 trapdoor memory card, which only cost around £30.

Harrowing hard drives II



I am having a horrendous time with my HD0 boot partition, it seems to have a checksum error on one of the blocks. My HD1 partition

>

Sticky startup



I hope you can help as I seem to have lost the startup-sequence for my GVP hard drive. Basically, when I switch on my computer it continuously comes up with requesters moaning about not being able to find volumes ENV and T, among other things. If I boot from the Workbench 2 floppy then I get some access to the hard drive. What can I do?

R Gray, Orkney



Well, it sounds as if some naughty program has been tinkering with your startup-sequence, which from Workbench

2.04 you shouldn't do anymore. When Workbench starts up a number of assigns have to be made. Without these a lot of programs get very confused and start complaining big style – the ENV: assign being one of these and one of the most important.

There is a fairly simple solution to your problem. All you have to do is replace your startup-sequence with a new copy. So if you boot up with the Workbench 2 disk and open a shell, type *copy s:startup-sequence TO dh0:s* which will replace your corrupt startup sequence with the correct version.



Do you have a problem? Do you sometimes find yourself poised over your Amiga with axe in hand, spouting profanity at the stubborn refusal of your software or hardware to behave properly?

Well, calm down and swap the axe for pen and paper, jot down your problems, along with a description of your Amiga setup, and send it off to Amiga Computing Advice Service, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. Alternatively, e-mail us at ACAS@acompc.demon.co.uk

seems to be fine. Sometimes when I turn on my machine the purple screen appears, asking me to insert a disk. If I then reset my machine it will boot off the hard drive but the startup-sequence does not seem to run, as I only get a 4 colour screen and no DblPAL.

I have tried various recover tools such as DiskSalv, QBTools and AmiBack, but they all seem to find problems and when I try to get them to repair the drive they crash after about half an hour.

It also appears as if all the icons from the drawers are gone, but not the actual Disk.info icon. I can't enter any of the directories using the shell, but none of my programs are saying the disk is not validated, and the disk is not 100% full, which is usually the case of a non validated disk.

R Borst, Netherlands



Oh dear, you seem to be in a spot of bother. I have had my share of validating and checksum errors in my time, but I have never had some of the symptoms you describe.

In this situation I would either just get DiskSalv to do a straight repair, which is normally enough to restore the partition to its original state, or do a Quick format – which does not actually wipe any of the data on the drive – and then try to recover as much as possible. In your case you may have to try the second option.

It is strange that you are getting the purple boot screen, as this is normally

Any questions?

Going nowhere



I am having trouble starting up Epoch Voyager which was on your coverdisk. I have an A500+, and an external drive. When I click on the epochVoyager\iconX icon, the disk drive churns away until I receive the error message 'Cannot find or install Womble font. Make sure you have a font directory.' I have tried renaming the Fonts directory to FONTS and have also put a fonts directory on the program disk itself but it does not help. HELP!

J Hayes, Cardiff



Epoch Voyager is a little strange in that the Womble font it refers to is actually stored in the program. When you first run it, it tries to copy this font off into your fonts directory and if there is no fonts assign you will get the, 'cannot find or install' error message.

Epoch Voyager is trying to use the FONTS: assign to locate the font called Womble.font. The FONTS: assign should point to the directory where the Womble font will be copied to.

There are a couple of ways to cure this problem. If you are booting from your Workbench disk and then running epoch Voyager off your external drive, when you now try to run epoch Voyager, the FONTS: assign has already been made, so it will run.

associated with a hardware problem. The computer is not able to find the hard drive, in fact it thinks the hard drive is not connected. So it would have to be either a really bad software error or a hardware problem.

If a quick format does not do the trick then I can only suggest completely formatting that partition. If this is the case you will have to use that back up you made of your HD0: You did backup your hard drive didn't you? If not, you are unfortunately going to have to reinstall the whole thing by yourself.

the company. After booting I have audio but just a blank screen. This is also the case with any programs written in Amos. As TUDE given away on your cover disk didn't help I was hoping you could give me a tip.

R Hargrove, Germany



The answer is fairly straightforward, if a little perplexing. Amos pro, and any program written with it, will simply not work with an A1200 that has extra memory. The only answer is to rip out your memory expansion.

I would love to know why this happens, as I have also tried all sorts of things trying to get AMOS pro games to work. If you have left your computer off for a good few hours, the AMOS pro programs do tend to work for a longer period, but once they start locking up your computer you can forget it.

If anyone has a reason why this happens, I would love to know, and better still if you have an answer to this problem please send it in.

Amos un-professional



For at least two years I have been sitting on AMOS professional – the original copy with example disks. The problem I am having is that it will not work on my A1200, despite a free upgrade sent to me from

Don't delay, upgrade today!!



I have an A500 with 2Mb of memory, Workbench 1.3, and two external disk drives. I am becoming more and more frustrated that the coverdisks on computer magazines require hard drives and Workbench 2.04, 3.0 etc.

My question is, if I upgrade to OS3.1 by changing my kickstart chip will it effect the memory in any way, or slow my A500 down.

G Barnaby, Gwent



Unless you are exclusively using your Amiga for games then I would implore you to upgrade to the latest version of the OS. When OS2 was first

released I upgraded as soon as I could and never regretted it once, and now OS3.1 is far better than even that old release, with almost every aspect of Workbench being user definable.

Under OS1.3 you are confined to only really being able to use one of the many file utilities and the Amiga shell. The latest Workbench is far more enjoyable to use, and with the addition of programs such as Toolmanager, MagicMenu and MCP or MultiCX, I very rarely have to resort to using things like DOPUS.

This is not to mention the more important side of things, in that almost all 'serious'

software will require you to have at least OS2.04 before it will work. And with OS3 introducing datatypes, MultiView, double buffering, and many graphics optimisations programs are now appearing that are OS3 only.

To actually answer your question, Workbench 3.1 will not effect your memory in anyway, and should appear to actually work quicker than the old operating system, with windows and menus redrawing faster than before. The only thing you should watch out for is that it will probably use an extra 100K or so due to all the new libraries and datatypes that are present.

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(We have a lot more planned for the coming months... stay tuned!)

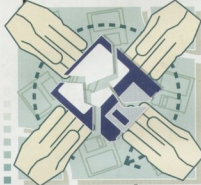
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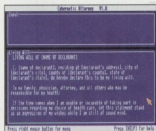
*Strapped for cash? So is Dave
Lusick, but thankfully that
doesn't mean that top quality
software is out of reach...*

Assassins Disk
Helper 9

Programmed by: Various
Available from: Seasoft

This disk contains a really interesting collection of utilities. First up is IconImage, a useful program designed to do a simple task quickly. When run it adds itself to the Workbench Tools menu and opens up an AppleIcon. Now drop another icon onto this and the dropped icon also appears as an AppleIcon on the Workbench. Now drop any other icon onto this AppleIcon and the dropped icon image is replaced by the AppleIcon image. Follow that?

Slightly simpler to explain are EasyWB and Drop 'n Act 2. These both set up an AppleIcons onto which files can be dropped, whereupon predefined actions will be car-

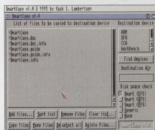


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ARexx Guide

Produced by: Robin Evans
Available from: KEW-IT Software
Disk No. P1021

ARexx is a programming language that can make your Amiga a lot more powerful. ARexx scripts can effectively automate lengthy and tedious tasks, which is why so many Word and Image Processing applications make extensive use of them. It is also possible, for example, to send a file from one program to another, perform some action or other, and then return it to the original application.



Smartcopy, another decent utility
from Assassin's Helpers 9 disk

ried out. This is an extremely good idea, originally employed on the unfortunately buggy DropBox and more recently on DropTool and ClassAction. I still prefer the latter, however, if only because of the greater flexibility it offers. At the end of the day though, any one of these programs (with the exception of DropBox which does strange things on WB 3.x machines) will make using Workbench an awful lot more pleasant.

ToolAlias is another example of a good idea which is slightly let down in its implementation. Running as a Commodory, it

This nicely organised AmigaGuide file explains exactly what can be achieved using ARexx and how to achieve it. The step-by-step tutorials are simple to follow but the guide is certainly comprehensive, as a quick look at the lengthy index will confirm. Since A1200s are not supplied with a copy of the standard printed guide to ARexx, this disk should prove invaluable to many Amiga owners.

While the complete AmigaGuide document is supplied on the disk, it is shareware so you are morally obliged to register if you make use of it. The \$15 registration fee is less than a book on the subject would cost, and is not unreasonable considering the

enables the user to substitute default tools with their own favourite tools. For example, it could be set up so that even double-clicking on a file which had MuchMore as the default tool would result in PPMore or Multiview being called. The program is let down by a slightly irritating interface which makes entering your preferences something of a chore.

Cybernetic Attorney is designed to assist in the preparation of legal documents, providing forms which only need a few relevant details adding before they are ready to use. The documents were originally created for use in the United States, but few changes would be necessary for the program to be usefully employed on this side of the pond. This demo version contains only a few documents, but the registered version includes forms for all manner of situations.

Among the rest are Wasted Time, which keeps track of the time you're spending on your Amiga each day; ClearRAM, which empties the RAM Disk quickly but without deleting the vital Clipboards, ENV and T drawers; and HDSleep, which turns off your hard drive motor after a preset period of time - although quite why you'd want to do this is something of a mystery.

ART
of the month

Lee Majors #7

Produced by: Ben Cowdall
Available from: Ben Cowdall

This is just a little bit silly. Plenty of imagination has been used in the creation of some truly wacky pictures in which Lee Majors advocates all manner of bizarre things from Surfing While Pregnant to The Desert Burial Of Richard Gere, all to the accompaniment of a bizarre tune. My personal favourite, however, is easily Lee Majors advocating in Lone Crusade Against The Post Apocalyptic, Radiation-Soaked Armies

Of Darkness. Don't expect stunning artwork, but be prepared for some serious laughter.

Forthcoming titles from the same man include Stars on Teletext and The History Of Quorn, which definitely sound like they'll be worth looking out for. Textured vegetable protein in particular does indeed have great potential as an object of ridicule.



amount of work that has evidently gone into preparing this excellent product.



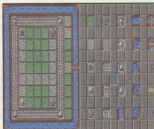
ARexxGuide demystifies the incredibly useful programming language

Assassins disk 240

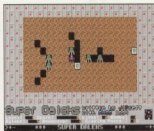
Programmed by: Various
Available from: Seasoft

This Assassins game disk includes three pretty reasonable offerings, Catapults, Muhtar and Super Daleks, which should help while away those long winter evenings.

Catapults is vaguely reminiscent of 1980's action board game Crossbows And Catapults. Two players each construct a castle, and must then use their catapult to destroy the opponent's fortress before



Designing a stronghold before commencing battle in Catapults



Super Daleks has antiquated graphics but challenging gameplay

their own falls. Catapults has an added element, however, in that the population of the strongholds are under threat not only from the opposition but also from possible lack of food or water. To ensure that such subsistence shortfalls do not occur, it's important when designing your fortifications to allow some land for growing food, and to make sure your well is not a position where it can be easily destroyed by your enemy. This is an enjoyable enough game if played with a friend, although it's scarcely going to stun you with its graphics and sound effects.

Muhtar is, as it were, a collect-'em-up. The sole objective is to collect the numerous items scattered around the single-screen levels within the strict time limit. Unfortunately, since this is achieved by simply taking the shortest possible route around the screen, the first few levels prove boringly easy, and when the time limit starts to get really tough things just get frustrating and tedious.

Super Daleks was written by a Finn who says he's never seen Doctor Who, so he's made up a really wacky story as to how the Doctor became involved with the infamous extra-terrestrial warmongers. It's a simple game which I'm sure is based on an age old program, the objective being to lure the chasing Daleks into traps by moving step by step while the mindless baddies follow. It looks a bit dated but it can be quite challenging, requiring a good amount of thought at times.

As individual efforts, none of the three

Glory box

I want to hear from you if you have any program, whatever its purpose, which you consider worthy of review. Whether it will be freely distributable public domain, shareware or licencedware, if you feel it's of sufficient quality to merit coverage then stick it in a jiffy bag or padded envelope and send it in with all haste. I promise I'll at least look at your work – even if it's just another Lottery program or Klondike cardset. It does make my job a lot easier though if disks are clearly labelled. Please also include a cover letter detailing the disk contents and price and giving some basic instructions. The magic address is:

Dave Cusick
PD submissions
Amiga Computing
Media House
Adlington Park
Macclesfield SK10 4NP

games are going to win any awards, but together they stand up fairly well, and at £1.50 a throw it's hard to go wrong.

Assassins disk 241

Programmed by: Various
Available from: Seasoft

Here we have China Tiles, MineRunner and ThinkAMania. The first is a Mahjong clone with attractive graphics, lack of originality being excusable on the grounds that this is a great little game. It also features Help, Cheat and Undo options, meaning that even the most

LEE MAJORS ADVOCATES THE WEARING OF GAUDY JUMPERS WHILE RECLINING ON A BEAN BAG RECOUNTING SCARY STORIES TO A HYPNOTIZED PIMP.



LEE MAJORS' ADVOCATIONS.
Number 13 of 100.

China Tiles:
Mahjong has never been so much fun



The strange world of Lee Majors #7.
What must be going on in Ben Coddall's mind?



The irritatingly addictive ThinkAMania in full interlaced glory

pH Karaoke

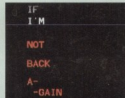
Programmed by: Mark Alliban and Paul Humphries

Available from: OnLine PD
Disk No. OU212

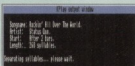
Full marks for originality, because this is definitely the first time I've seen a PD karaoke package. The idea is very simple; stick a tune on CD or tape and load the relevant file into pH Karaoke, then watch the words scroll smoothly up the screen and sing them as they pass across a big blue line.

As the authors say, this is the sort of daft program that could go down a treat at parties or drunken orgies. Drag your unsuspecting chums to the computer and then hit them with REM or Genesis (some of my friends do this unprovoked anyway). The comic potential is pretty great.

I haven't experienced any problems when testing it with CDs, but if the worst comes to the worst and the words on the screen don't seem to match the



...and I hate to
think what Andy
will do to
Rocking All Over
The World



Fortunately, dear readers, you can't hear what we can: Andy Maddock strangling Buchanan Rhapsody thanks to pH Karaoke...

music on your stereo, it is possible to adjust the speed the words scroll at.

The program is supplied with over 30 song files, but users who register for a meagre fiver will receive the authors' latest karaoke conversions and a program allowing them to create their own files.

Entering the week's fixtures is a swift and simple operation owing to Pro Football's intuitive interface



Pro Football, because once again Ali has come up with a brilliant program. It's hard to tell whether you will actually stand a better chance of winning the pools with this result predictor, but this certainly appears to be one of the best programs of its kind.

Fixtures and results are entered using the same intelligent system that Pro Gamble sported – enter a couple of letters of a team name and the program fills

Find the answer within

Ben Cowdall

23 Barn Way, Cirencester,
Gloucestershire GL7 2LY

Cost: £1.25

(Cheques payable to BJ Cowdall)

David Hill,

165 Owen Avenue, The Murray, East
Kilbride G75 9AO

Cost: £10 for registered version

KEW-II Software

PO Box 672, South Croynod, Surrey
CR2 9YS

Tel: 0181-657 1617

LH Publishing,

13 Gairloch Avenue, Bletchley
MK2 3DH

Cost: £5.99

Ali Prior

10 Lovell Park Heights, Leeds
LS7 1DP

Seasoft,

Unit 3, Martello Enterprise Centre,
Courtwick Lane, Littlehampton,
West Sussex BN17 7PA

Cost: £1.50 per disk plus 50p P&P

dull-witted individual can enjoy a quick crack.

In MineRunner, an unashamed LodeRunner clone, the objective is to beat your computer-controlled opponents to the gold scattered around the many single screen platform levels. The graphics and sound are pretty basic but those who value the sort of playability that many old 8-bit games possessed will feel instantly at home with this. There are also some nice options, such as the support for various monitors and for the use of Sega MegaDrive control pads as two-button joysticks.

The final game, ThinkAMania, is a memory test. The aim is to clear a screenful of cards by turning them over two at a time, and removing them if they have matching pictures. Excellent graphics add another dimension to this hugely diverting offering, and I'd certainly recommend getting this installed on your hard drive. As with increasing amounts of software these days, it's shareware, so don't forget about the author when you're sitting in front of the screen late at night trying to remember the location of the other card showing a cute pink bunny rabbit.

Pro Football

Programmed by: Ali Prior

Available from: Ali Prior

Ali's previous efforts, Pro Gamble and Pro Lottery, both earned reviews in these pages thanks to their extreme user-friendliness, attractive presentation and general all-round quality. Therefore, Mr Prior's decision to send a basketful of chocolate footballs and a small plastic whistle along with his latest offering and the trademark fluorescent orange letter seemed a slightly strange one. Not that anybody in the office minded, of course.

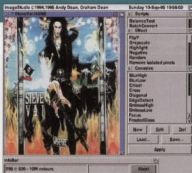
Fortunately, I need have no qualms about allegations of bribery for reviewing

Haunted By You

The king of Shareware image processors, Graham and Andy Dean's ImageStudio, has now reached version 2.2.0. In addition to an excellent range of effects and full ARexx support, it now boasts a colour preview window, and modularised loaders and savers for scores of file types including PNG, EPS, Targa and Tiff. The program is as stable as ever, and represents great value for money at only £10 for the full registered version. Those who have already registered can use their keyfile to unlock the latest demonstration version.

There's also now a printed version of the manual, which is nicely designed and illustrated and costs £5.99. It is supplied with the latest unregistered version of the program and can be obtained from Larry Hickmott at LH Publishing.

Another program which seems to keep on improving at a phenomenal pace is David Hill's disk cataloguing program, TurboCAT. Now with the suffix Pro, it offers the opportunity to have six databases running, allows access to the main cataloguing section and the search section at the start of the program,



Powerful image processing at an affordable price: the all-singing, all-dancing ImageStudio 2.2.0

and has undergone something of an overhaul visually. A PD demo is available, with registration costing a tenner. Those who have already registered can upgrade simply by sending Mr Hill two blank disks and an SAE.



PROGRAMMING + TER

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- **V027 DICE C COMPILER (AR)**
- **V028 ARK PROGRAMS (AR)**
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After an absence of more than a year from the production lines, the Amiga 1200 is finally back in action. The world's favourite 2Mb, 68020-based home computer is back in the shops and now comes with a new bundle of software tools and games as an added incentive to potential buyers. The new A1200 is only different to the machines made by Commodore in one respect. The A1200 now comes with Kickstart and Workbench 3.1 as standard, which means CD-ROM support and bug fixes are now included in the system software.

For those of you who are contemplating buying an A1200 for the first time, some explanation of the Amiga's capabilities might be in order. The A1200 is one of a long line of computers, originally made by Commodore, which are now produced by Escom subsidiary, Amiga Technologies.

The A1200 is equipped with the AGA (Advanced Graphics Architecture) chipset which means it can display hundreds of thousands of colours from a 16.7 million colour palette. It also has an advanced sound chip giving four channels of stereo sound and, perhaps the Amiga's best strength, the A1200 is fully pre-emptively multitasking.

TRADITIONS

The Amiga has a long tradition in video-related areas including art and animation, video titling, and multimedia presentations and image processing, and the A1200 continues this tradition.

The software bundle accompanying the Magic pack contains two art packages, and the A1200 itself is equipped to send graphics straight to video, having a composite output built into the machine. This means you can record your animation and graphics work straight to video without requiring any additional hardware or software.

But let's not forget the Amiga's musical talents either. With packages such as Octamed and a sound sampler, you can create music to suit any taste, from the classical to the down-right ravey. If you already own a musical instrument that conforms to the MIDI standard then you can buy a sequencer package for your Amiga along with a MIDI interface and control your keyboards through the Amiga.

And just because the Amiga excels at art and music, it doesn't mean it is less capable at the more serious aspects of computing. In the software bundle that comes with the new Amiga 1200 you will get one of the top word processing packages available for the Amiga, together with a splendid spreadsheet program, a database, and a personal organiser.

The Amiga is also a talented performer in the lighter side of digital entertainment. Some of the world's most famous game names got their start on this platform, not to mention their games. Titles like Lemmings, Pinball Fantasies, Sensible Soccer and Speedball were first released for our favourite machine, and there is an enormous range of shareware and PD games whose quality sometimes rivals that of the most accomplished software houses.

If you are lucky enough to be able to afford the hard drive version, the benefits are even

greater. Workbench runs a lot faster and is more flexible from a hard drive, and to top it all off, you will receive an extra piece of software called Scala MM300 in the bundle.

Scala is used by multinational corporations and international hotel chains for multimedia presentations, corporate video titling, and much more. That it is so flexible can be surprising, but not as surprising as its ease of use. Within minutes you'll have text and images flying over the screen like a pro.

Want to add graphics to your sister's wedding video? Scala is your program of choice. With all these advantages, it's easy to see why millions of people the world over chose the

It's back!

The Amiga Computing team grab the new Amiga Magic bundle and check out the software that comes with it

HIGH VOLTAGE

HIGH VOLTAGE

Amiga as their computer of choice, and this new bundle will guarantee many more users.

Turn the page to check out our reports on the eight pieces of software that make up the bundle for the A1200, and watch out for tutorials for using your Amiga in the coming months.

The best solution for 24-bit painting on a budget, Photogenics offers unbelievable power for a very low price (well, nothing in fact because it's included free in the bundle - ed). The bundled version that comes with the new A1200 pack has been limited in certain respects, but if you send in your registration card to the nice people at Almathera, they will instantly send you out a disk with a demo of the full version of Photogenics so you can see what you are missing.

So what exactly is Photogenics? Photogenics combines the power of image processing functions with painting tools to allow you to create 24-bit pictures (a 24-bit picture is one that has a palette which can consist of as many as 16,778,216 colours). Photogenics is ideal for retouching scans or video grabs, or just painting from scratch onto fresh digital canvases. The program can be a little slow at times, but this isn't so surprising when you realise the amount of data that has to be calculated.

Photogenics doesn't have any animation facilities because that is not where its focus lies. It concentrates solely on the still image - art for art's sake, you might say. One of the major reasons for upgrading from the bundled version of Photogenics to the complete version would be the enhanced range of file formats that Photogenics can load and save.

In addition to standard file formats like BMP and PCX, familiar to PC users, you can

Photogenics v1.2A SE



also make use of Photogenics' font loader, which allows you to create text inside Photogenics, and its Plasma loader which generates a swirling fractal pattern. But even more important than these are the full version of Photogenics' support for alpha channels and compositing functions.

A technical discussion of alpha channels would be too much to go into here, but if you think of them as being like stencils which allow you to overlay one image over another, masking out parts of the image, you'll have some idea. This extremely powerful technique is used by professionals to allow the Eiffel Tower to appear in the same skyline as the Empire State building and Big Ben, and has as many uses as you have braincells.

For users familiar with Photogenics who are contemplating buying a new A1200, here

are some details of what is missing from the full package:

- No text facility ● No crop facility
- No compose facility
- Limited number of loaders and savers
- No new icons support
- No cybergraphic support ● No twirls
- No printing ● No alpha channels

Comparison

To complement Photogenics, try ImageFX v2.1 from Nova Design (£249.99 from Wizard Developments 01322 272906). It was reviewed in our August issue and highly rated. You will need more memory to get the best from it and a hard drive is a must.

Verdict

The version included has been updated and seems slightly faster than the previous release, but some of the more annoying graphic glitches have been cleared up and it still offers good value for money. (Worth £49.95)

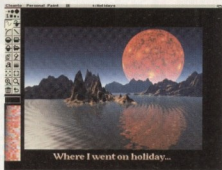


Personal Paint v6.4

The only one of the packages in this bundle to have been included in previous Amiga bundles, Personal Paint is a stalwart of Amiga graphics. Designed to work inside the Amiga's palette range, unlike Photogenics, Personal Paint gives you the ability to work in anything from two to 256 colours, perfect for on-screen work and animation.

Personal Paint also has a few tweaks over DPaint, the Amiga's best-known paint package. These include image processing functions that can be applied to a brush, an area of the screen or the entire picture, giving you effects like embossing, blurring and gradient fills. Personal Paint has more features than you can shake a stick at, including Stereogram generation (both SIPS and SIRDs), colour reduction, image conversion, virtual memory (a system which uses your hard drive as memory), AFexx support and a completely user-definable user interface. Personal Paint still lacks some of DPaint's finer details, like the move requester, but at least Personal Paint is still being developed.

The fun doesn't stop there with Personal Paint. Because it supports the system clipboard, it makes the ideal companion to your icon editor, letting you use Personal Paint's far superior



tools for the creation of your icon, which can then simply be copied and pasted back into the icon editor.

This is just one of the ways in which you can combine Personal Paint with other software. You could take your 24-bit output from Photogenics, load it into Personal Paint which would then convert it down to 256 colours (or fewer if you wanted it to). You could then add a text caption to the picture and save it back out. Once you'd done this it would be child's play to load up Wordworth and load the picture into a document, thus accompanying your text with pictures.

Comparison

To complement Personal Paint, why not try Deluxe Paint V by Electronic Arts. It is available from a wide range of dealers.

Deluxe Paint is the program with the longest pedigree on the Amiga (it was also in the first bundling deal) and was the first to provide an integrated animation and painting environment in one program.

Verdict

Personal Paint is one of those pieces of software that was a bit shaky to start with, but through several years of development by a committed publisher, Personal Paint has thoroughly grown up. The stereogram tools are the best (if not the easiest to use) of any system I have seen on the Amiga, and there are functions that can be performed in Personal Paint that can't be achieved at any price with other Amiga graphics software.

Well done Cloanto and new Amiga owners - you've got a great bit of software there. (Worth £49.95)

Turbocalc v3.5

Turbocalc is probably the best-known spreadsheet on the Amiga these days. Its looks hark back to Gold Disk's Pro Calc, now no longer in production, but is bang up-to-date and brimming with features.

The copy of Turbocalc in the bundle is the full version, lacking only the nice box and proper manual (most of the bundled productivity software has one combined manual) of the normal release. Turbocalc is originally a German program, although the rights to it have been bought by Amiga software giant Digita and further development will bring it more into line with their other products. In Germany it has sold over 50,000 copies over its three year life, which is certainly not bad going.

The changes that have been made to Turbocalc since version 2 are numerous and extensive. The program has been updated to take advantage of all of Workbench 3.1's abilities, including Locale support (for foreign language versions), online help and system clipboard support. Turbocalc's import and export functions are superb and allow the importation and exportation of spreadsheets in the most popular formats (Excel and Lotus 123), along with data compatibility with the other Digita products included with the Amiga 1200 Magic pack. Turbocalc can create charts in a wide variety of formats, from the simple bar to snazzy 3D pie charts and scientific functions like sine waves and hyperbolic curves.

Another of the features that has been improved is the way you can move cell contents around. In common with many packages on other platforms, you can click on the cell or cells you wish to displace, then simply drag the cells to a new location.

Comparison

Once you've put Turbocalc through it's paces, why not have a look at Final Calc from Softwood (contact Gordon Harwood 01773 836781), when it becomes available. Final Calc is the latest in Softwood's software stable and should be graced with the same clean, speedy interface as the other products in the range.

Verdict

Until Final Calc gets released, Turbocalc is the Amiga's premier spreadsheet, afterwards, well, we'll see. Turbocalc can be somewhat idiosyncratic at times, but even as it stands it works well. After Digita get their mitts on it properly, I'm sure Turbocalc will be the friendliest spreadsheet available for any platform. (Worth £49.95)

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The new box
in all its glory



Wordworth 4 SE

Amiga Technologies' emphasis on the Amiga's productivity power will never be taken seriously unless the word-processor comes up to scratch. After all, spreadsheets and image processors serve specialist requirements, but everyone needs to print a letter off once in a while.

Fortunately, Wordworth SE already has a good reputation with Amiga enthusiasts as a good value word-processor, and the few important additions included in the new version can only make it more appealing.

For anyone unfamiliar with the program, SE is a cut-down version of its full priced sibling. It lacks some of its big bro's more specialised features, but retains the most commonly used tools and, most importantly, will run on the standard A1200.

New for this version, Digita have incorporated style sheets and AFexx support. For most users it will be the style sheets that have the greatest impact on the way they work since they allow for drag and drop editing of their document's layout. In effect, they let users manage their page layouts more easily while allowing for greater consistency between all of their documents. Text is formatted instantly by simply dragging and dropping a particular style onto the desired section of your work.

AFexx is the powerful interprocess communication language which opens up new possibilities for the more technically minded users. Basically, it will allow you to control other programs from within Wordworth, a feature that was not available in the last version.

The program's speed has also been improved, though the pretty interface still takes it toll by making SE a tad sluggish for some tasks. File sharing capabilities with Turbocalc are also welcome additions, allowing users to maximise their bundle.

Comparison

SE is a cut down version of the full priced Wordworth, version 4 of which should be available by the time you read this. The flagship program includes advanced features like a table of contents generator or the librarian facility, but then it costs more (£149 for v.3.1) it won't work on the basic Amiga. Final Writer Release 4 is equally incomparable, since it now requires 3Mb of RAM and a hard drive.

Verdict

Wordworth SE was an impressive enough product when released at the beginning of 1995, and this version adds a few valuable extras that will be the icing on the cake for many users.

It's not the most advanced word-processor available for the Amiga, but the combination of a colourful and friendly interface, combined with powerful features like auto-correction and the new style sheets lift it far above the level of poor man's substitute. In all, SE is a package that will serve the average user admirably. (Worth £49.99)



Wordworth SE may be cut down, but many of the design tools are kept in tact

Datstore 1.1

Databases are rather dull by their nature, but they serve a valuable purpose and, as this program proves, they don't have to be as bland as is often expected. Datstore has the advantage of being about the most modern looking database available for the Amiga.

The interface follows the principles set by other Digma programs including Wordworth, which means it fits neatly in as part of the bundle. Users can therefore expect colourful icons, a floating tool bar, and online help to make using the program more intuitive.

Those of you who don't want to spend too much time compiling files of boring information will be relieved to find Digma have included predefined databases that will instantly meet many enthusiast's needs. We have, for example, the usual address book along with others like club membership records, plus supercar collection and recipe files. These are often colourfully designed with



Databases have never looked so good - though at times it's at the expense of speed

pictures. Those that want to start from scratch will find that the normal field creation tool used for slapping down data is accompanied by powerful design features. Records can be made more interesting using the box, caption and picture frame generators - although as with Wordworth, use of pictures tends to slow the program down.

Naturally, a search facility is incorporated, but more interesting is the query tool that makes it easier to organise your data. It's thanks to this that users will find Datstore particularly adept at narrowing a search down to a specific collection of records.

Comparison

Datstore will obviously be compared with Final Data v1 which is on our CoverDisk this month, and it has to be said it bears up favourably when it comes to cosmetic gloss. On the other hand, Final Data is faster, less fussy, and appeals to people who want to get the dull business of data out of the way. Datstore, however, has more polish and will suit the hobbyist better.

Verdict

An obvious choice to go with Wordworth, this well received database has been tweaked to remove the odd bug and given a file sharing facility for use with TurboCAD. Datstore isn't new, but it still has a very modern approach and it's colourful design will appeal to many database users. (Worth \$49.99)

Scala MM300

Scala will only be included with A1200s that come with a fitted hard drive. Hard drive owners will not be supplied with the disks that Scala is installed from, nor a manual. Users wishing to get these items can contact Scala UK on 01920 444294, where they will be told what the situation is.

Scala is one of the killer apps that makes the Amiga what it is. In its simplest form it can be regarded as a superior video titling program, but Scala offers much more than just that. This version supports the control of laser disc players and industrial video recorders, is AFREX controllable, and comes with a wide selection of bitmap fonts and professionally designed video resolution backdrops. Scala's interface is one of the most intuitive of the Amiga and allows for a very quick start to your presentations.

Comparison

The only thing on the market that can beat Scala MM300's performance is Scala MM400, so an upgrade to that would be a good move if you need the extra power, but be aware that the best can only be had from either version with additional RAM and processor power.

Verdict

Scala MM300 is possibly one of the best pieces of software available for the Amiga, and the fact that new Amiga owners will be getting it for free is a tribute to Amiga Technologies powers of persuasion. This package alone is worth the price of the hard drive version of the A1200, so if you can, save your pennies for a hard drive equipped Amiga.

Organiser v1.1

The final package in the business/household software suite from Digma is Organiser v1, and basically it's an electronic filofax designed to let users organise their work and social appointments on computer.

Once again, Organiser is controlled using Digma's now familiar tool bars and requesters, and the designers have even managed to give it some of the trendy styling any self-respecting yuppie should expect from their filofax. Thus you can turn pages by clicking at their corners, and sections are subdivided with colourful tabs sticking out at the side.

As well as the diary that constitutes the largest part of the package, there are also sections set aside for your addresses, tasks and calendar. Most important for novelty, however, is the supplement section which allows users to 'clip in' things like conversion tables, dialling codes or even wine and restaurant lists. Lots of supplements are included with the package, but you can also use Wordworth to make your own.

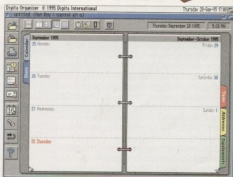
So far, though, Organiser has little to recommend it over a real filofax. The fact that users can automatically repeat regular entries as required - for example their weekly squash game - and that alarm chimes have been included does go some way to giving the computerised version an extra charm. Portability problems are only partially overcome, however, by the fact that Organiser will print pages to fit in real life filofaxes.

Comparison

Organiser is one of those odd programs that doesn't really have a commercial counterpart to square up to. There was Digma's Day by Day and a number of PD attempts, but users wanting a more professionally designed product won't be able to find anything better on the Amiga.

Verdict

Maintaining the general level of quality that is apparent with the serious software in the bundle, Organiser is attractive and could hardly be easier to use. Whether a commercial electronic organiser is worth buying is rather debatable - after all, the main attraction of a filofax is that you can consult it wherever you may be. This weakness aside, however, Organiser will doubtless prove valuable as a complement to the rest of the Digma software included in the bundle. (Worth \$39.99)



The ultimate yuppie accessory from the '90s now comes in computerised form as part of the Amiga bundle

Pinball Mania



The graphics certainly don't show off the AGA chipset



Unfortunately the ball and flipper movement don't feel all that realistic

Pinball Mania follows on the long line of pinball simulations from publishers 21st Century.

Four tables are available with a variety of themes from spiders to law, each with some imaginative missions. On the table Jailbreak, for instance, one of the tasks is to get the ball into Sentence Ball-Trap to sentence a suspect, or you can spell the word Guard to call the guards and stop a riot. The second table, Jackpot, works particularly well with its gambling theme, so contains sub-games like Roulette or a fruit machine mission. Kick-Off has a 2-ball multi-ball feature for the penalty shoot out mode and finally, Tarantula has all kinds of mysterious passage ways.

Comparison

The game is AGA only and pretty close to the commercial version, although it may have some minor tweaks made, but as yet it is unclear what, exactly. Gameplay, though, will remain the same. It will retail at £29.99.

When compared with other pinball titles this looks poor. Pinball Illusions would have been a better inclusion because it had excellent graphics and realistic gameplay. If Amiga Technologies wanted a more recent pinballer, they should have opted for Obsession because although this would run on all Amigas, it had better graphics.

Verdict

21st Century have built up a reputation as publishers of some of the finest pinball sims ever released, so when Amiga Technologies announced they were including their latest sim in the bundle, high hopes were raised. Unfortunately, it soon became apparent that this title was nowhere up to the same quality as its predecessors. This time they have chosen Spidersoft as developers instead of Digital Illusions - a big mistake.

The graphics are unimpressive but this isn't the main problem. It's the playability which is totally unrealistic. The ball movement feels sluggish and even when your flippers are shooting at full power, they aren't responsive. The missions provide some entertainment but it is not as playable as it should be.

Conclusion

So now you've read up on the various software titles that come with the new Amiga 1200 bundle. We at Amiga Computing think that this has got to be the strongest bundle deal yet for an Amiga, particularly if you are buying the hard drive version which comes with multimedia heavy-weight Scala. Most of the software is either in a version new to us or has been adjusted to suit the A1200, and with a total value of well over £300 for the standard pack and £500 for the hard drive pack including Scala, initial misgivings about the prices of the new Amiga 1200s have to be revised.

Once you've plumbed the depths of the titles bundled with the Amiga 1200, you'll be well-

prepared for diving into the wider world of Amiga software out there. Some of the titles you'll read about in our magazine and others will require a more powerful machine than the one Amiga Technologies supplies as standard, but the beauty of the Amiga is that, unlike other platforms, you don't have to pay for everything at once. A hard drive, accelerator card, monitor and CD-ROM drive are all fairly essential purchases, but ones that can be made over a period of time.

The Amiga 1200 is a superb machine and Amiga Technologies have done an admirable job of bringing it out in time for Christmas. There were additions that every Amiga owner wanted, but they can wait until next year.

Whizz

The second game in this package is Whizz from Microvalue Flair. It is an isometric platformer which takes a rather similar theme to that of Lewis Carroll's Alice in Wonderland, with the main character of a rabbit and fantasy-like backgrounds.

The player controls the rabbit who has to move through various levels to escape his adversary, Ratty, with a set time limit to do it in. As well as avoiding certain enemies, there are puzzles to solve and parts of scenery to interact with to continue the journey. Bonuses can be collected to raise the players score and other objects found to replenish energy and time.

Comparison

A criticism levelled at the commercial version was that it was too hard, so Flair have made the game easier and

have also made the game controllable via both the keyboard and the joystick. It retails at £25.99.



Graphically, the game looks very dated

Verdict

Whizz was released quite a while back and if Amiga Technologies really felt that a platformer was a necessary inclusion then Aladdin would have been better because graphically it was outstanding and really did push the A1200's capabilities.

INSTALLER WORRIES

What if you can't afford the hard drive version? What if you can only just scrape together the cash for the floppy only version, but you will be able to buy a hard drive at a later date? Will you have the same problems that plagued early A1200 buyers when it came to installing a hard drive? The answer, for the time being, is no.

Amiga Technologies have said to us that all A1200s will come with the full six disk installation of Workbench 3.1, including the hard drive install disk and hard drive manual addendum. However, as Jonathan Anderson stated, the extra disk and manual are an expense that Amiga Technologies might not be willing to continue to uphold, so later Amigas may well not come with this disk and manual. However, all is not lost, you will be able to ring Amiga Technologies and they will supply you with them for a nominal fee.

It ain't often something comes along which really breaks the mould, but once in a while it happens. Recently, the Zip drive turned the hard drive market on its head and now it's the turn of the Reno to do the same for the CD-ROM business.

While the rest were busy doubling, quadrupling and sextupling drive speeds, Media Vision were employing a bit of lateral thinking. After some truly ingenious design work, the Reno was born. At first glance you could mistake it for yet another triumph of design over content. However, closer investigation soon reveals there's a lot more to the Reno than good looks.

The heart of the unit is, of course, the CD player itself. On the face of it there are few, if any, surprises – the usual tape deck transport controls, volume dial, headphone socket, lid lock and optional external power socket. In short, 'ye olde' mobile CD player. But take a quick glance around the back and a totally new dimension appears.

Courtesy of two guides and a SCSI connection, you can add a detachable SCSI module transforming your portable CD into a portable CD-ROM. Add a link from your Amiga via an appropriate SCSI cable and 'hey presto', instant CD-ROM or CD player – battery or mains powered.

On the rear of the SCSI module sit two mini 50-pin D-ring SCSI connectors for input and pass-thru, separated by a small dial to select an appropriate unit number – no nasty dip switches on this little cutie.

The actual SCSI connections are perhaps the only sticking points on the Reno.

Although perfectly functional they are in the new SCSI II style – as opposed to the traditional 25-pin or large 50-pin Centronics connectors.

In the Reno's defence it does come with a cable which links the new style plug to a traditional 25-pin SCSI – this being the external standard for most Amiga SCSI controllers. Only SCSI II controllers use the mini 50 D-ring as standard. The cable is fine if you're connecting the Reno direct to the machine, but if you're planning to use it with either a Squirrel or perhaps at the end of a SCSI chain you'll need at least one additional bit of kit.

GENDER BENDING

Assuming you're going to add the Reno at the end of the chain you'll need what's known as a gender bender. Basically, this is a small dongle which enables you to connect a traditional 50-pin Centronics to the Reno's mini 50-pin D-ring. Alternatively, you could use the same gender bender and add the Reno in at the beginning of the SCSI chain, with its accompanying cable making the initial connection to the machine. Whichever way you choose,



there's still the small matter of £20 to be added to the bill for the all important gender bender.

Portability, in relation to the Amiga, isn't an issue, unless you have some weird idea about trundling your Amiga about in a wheel barrow accompanied by a couple of car batteries. The portability issue does have wider implications if you're forced to use a PC or Mac for computing on the move and the Reno will be equally at home on both platforms.

In addition to the Ami-CD-ROM software, the Reno also ships with software for both the PC and Mac. So, whether you're on the road or at home with your Amiga, the Reno is ideal. Not surprisingly, both the CD and its accompanying SCSI module boast battery compartments if mains power isn't an option.



Killer gizmo

*Is it a CD-Rom, is it a
CD player, is it a bargain?*

*Paul Austin has all the
answers when it comes to the
Reno portable CD*

Buyers guide



Aside from the CD, SCSI module, SCSI cable, power supply and manuals, the makers have also thrown a few extra goodies into the equation in the form of a rather stylish carrying case, plus a pair of rather naff headphones. My advice would be to ditch the headphones and invest in a decent pair. The CD's sound quality is excellent and the freebies simply don't do the Reno justice.

During the tests, the unit performed faultlessly either as a portable or under mains power. The alter egos of CD-ROM and CD player appear to sit effortlessly together and the ability to swap roles when required makes it, at worst, a great money saver.

If speed is important, a dual speed delivering a perfectly respectable 180ms access may simply not cut the mustard. However, stack the innumerable plus points against this one limitation and you still end up with a machine which combines great design, good build quality, exceptionally flexibility, and an unbelievable price within a true innovation.



SYSTEM ESSENTIALS

RED = Essential BLACK = Recommended



SCSI controller

The bottom line

Product: Reno Portable CD-Rom
Supplier: First Computer Centre
Tel: 0113 2319057
Price: £129.99

Ease of use	10
Implementation	10
Value for money	10
Overall	10

John Loader doesn't have much time for journalists. As chief investigator for ELSPA's crime unit, he realises that a certain amount of public relations work is required, but you get the feeling his heart's not really in it.

When interviewed at the ECTS, Loader was polite, but he gave the impression it was a bit of a chore. In contrast to all the PR people chattering away throughout Olympia that day, Loader exhibited no interest in making over-inflated claims for his organisation. A down-to-earth man with 30 years experience in the police force behind him, he seemed oddly out of place in the hot air environment that constitutes the European Trade Show.

His comments on the extent of the problem facing the industry, however, are as revealing as they are brief. According to ELSPA's figures published in May 1995, the game industry loses \$2.7 billion a year, while the business software community loses an astounding \$7.8 billion to fraud. Loader admits even that estimate might be conservative, however – Nintendo US boss Howard Lincoln claimed \$5 billion was lost every year by the games industry alone.

Given these figures, Loader has to be realistic about what ELSPA's crime unit can achieve. "On a target by target basis we've had almost 100 per cent



John Loader, ex-policeman, now heading the ELSPA crime unit

A steady flow of successful crimebusts have caught CTW, the trade newspaper's attention

success," he remarked. "But the limited resources mean we're not going to solve the problem."

Limited resources indeed – the words crime unit might sound rather grand when you realise it's comprised of just John Loader and his assistant investigator Karen Battin. This has not stopped them from busting some of the most serious counterfeiting operations in the country.

Since its inception in April 1994, the crime unit has uncovered criminal software theft conspiracy, illegal Bulletin Board operators and even the seizing of illegal software at car boot sales. With such a broad range of criminal activity to cover, Loader's team found that just seizing illegal software at the point of sale was not

Pirates scuppered

ELSPA has struck again, raiding two pirate CD-ROM outfits. Working with Police and Trading Standards Officers, country investigators from the shadowed trade body uncovered factories and counted gold disks – including a large lot of Microsoft's Windows 95. A double raid on houses in Kildersmore and Redfern, August 31st. Two CD-ROM writers allegedly being used to manufacture counterfeit low D50 tape streamers, each containing master copies of software titles, including the British Telecom, Philips and Nintendo computer software. Trevor Bell – a well known pirate – apparently better known as 'Tut Tut' – are now helping Trading Standards and police officers with separate enquiries. In an unconnected operation, ELSPA and the police South – Wiltshire Police – raided a house in Wiltshire on Friday September 1st. Two more CD-ROM writers were recovered, plus large amounts of counterfeit software.



The boffins have tried to beat the pirates before. This time Disc Express have a go

fighting the problem at the root.

Now the crime unit hires private investigators on a job by job basis to follow up on tip offs. Information often comes from employees within companies with dubious operations as well as from customers that receive suspicious goods.

Investigators will sometimes make test purchases to prove counterfeited software is being sold, but in the case of the larger criminal operations, Loader's team has worked closely with the police, obtaining search warrants and accompanying them on raids to collect the evidence required to bring the pirates to justice.

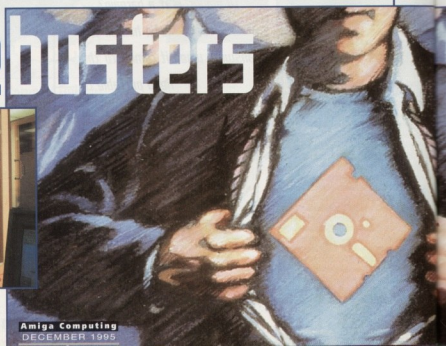
Given the importance of working closely with the police and the trading standards authorities, Loader's experi-

Software piracy is on the increase, costing the industry billions each year. Since its establishment in 1994, however, ELSPA's crime unit has been fighting back. Gareth Lofthouse reports

The Crimebusters



Making pirated CDs is not as costly as many imagine



Few Amiga owners take the problem of piracy particularly seriously. The music business has been claiming that illegal copying is killing off music, but this has never done anything to stop people taping CDs, and the same attitude applies to software.

Tedious sermonising is not *Amiga Computing's* style, but you might be interested in how these crimes affect you as an end user. It is well known that the Amiga has suffered particularly at the hands of blackmarket traders, and this has led to higher prices and nervousness in the industry about developing for the platform.

Take DMA Design, for example. Makers of the phenomenally successful *Lemmings*, DMA suffered so much from piracy it was the major reason for their subsequent abandonment of the Amiga. Simon Little, Lemming's designer and now development manager for Gametek, commented "I don't think there were many Amiga owners that didn't have a copy, and a high percentage of those were pirated." Worse, he points out, the more popular a program is the more people will want to crack it.

Burnt fingers

Piracy in the music and games industries are both similar problems, but the comparison sometimes conceals some important differences. For example, Little believes the selling of bootleg copies in car-boot sales and markets is more common with games. Music CDs cost £13 whereas games cost £30, so obviously the bootlegger can make much more of a profit out of the latter. The difference between a music CD's price and a gold disc is not so rewarding.

Given how widespread this activity now is, are ELSPA doing enough to fight the problem? "Well it's one of those things where you can never do enough," Little says. He pointed out that progress will be slow, since getting as far as a prosecution for illegal copying takes months.

Unlike with the music business, where the transition to CD has probably encouraged more home

illegal duplication thanks to its superior sound quality, the game industry's move to CD could radically reduce the amount of casual copying of games by individuals.

Simon doubts, however, that it will have any such benefits as far as the commercial and industrial pirates go. As he knows from his own experience with another game called *Journeymen*, the professionals can manufacture high quality, convincing copies of everything from a game's CD to its packaging and artwork, and then go on to flood whole markets in the Far East with their illegal versions.

Lemmings was phenomenally successful, but DMA lost out big time thanks to piracy



ence and understanding of police procedure is vital. However, the crime unit will undertake private prosecutions on behalf of its members when the police won't take certain cases to court.

Many in the games industry had hoped that the transition to CD-ROM as the main software format would help to reduce piracy, but Loader quickly puts pay to that theory. "It's as easy to copy software now as it ever was," he states. "You just have to spend £5000 on a decent computer, tapestreamer and a CD writer. Then you just need the gold discs, which cost as little as £5 each when bought in bulk."

Nor does he think it's likely that advancements in the technology of piracy protection will solve the problem in the foreseeable future. From the outset

"On a target by target basis we had almost 100 per cent success. But the limited resources mean we're not going to solve the problem."

John Loader

of video gaming, developers have sought to outsmart the code crackers with a whole range of tricks, all to no avail. Loader is equally non-plussed by the latest efforts by companies like Nimbus and Disk Express, stating,

"We've yet to see anything that works in practice. It seems that if you can make it, someone else can break it." In fact, as is the case with hackers obsessed with breaking into the most protected computer systems in the world, there is a whole community of crackers who enjoy the challenge of overcoming the latest protection systems.

Loader was actually approached by such a crew while at the show, and they asked him if he thought they were the villains. "Maybe not," he responded, "but they provide the tools that make the crime possible."

Cracked conspiracies

In its short history the ELSPA crime unit has successfully uncovered several major criminal conspiracies, each of which show how easy it is for individuals to make pirate copies of software without spending a fortune on equipment.

In true Crimewatch tradition, the piracy underworld has its own characters that crop up again and again. One such person is Trevor Bell, a redundant British Rail Signaller known throughout the international pirate BBS network by his handle of "Hot Tuna."

Bell was selling pirated versions of major software titles when he had the misfortune of being approached by John Loader acting as a customer. He offered Loader a CD containing £30,000 worth of Nintendo games, all for the price of £28. Bell also had CDs apparently containing every current game and business program available for the PC, which he was selling for the same price. He was duly prosecuted and sentenced to 200 hours community service with a warning that failure to carry it out could result in a prison sentence.

That was back in May this year. Bell obviously found his previous line of work too rewarding to abandon, however, because by August the ELSPA crime unit had fresh information about the 24-year old man's activities. This led to a raid on 31 August when Loader, trading standards officers, and members of West Mercia CID, uncovered illegal property in houses in Redditch and Kidderminster. Bell was at the

Kidderminster address at the time of the raid.

As well as discovering two ROM writing machines and two DAT tapestreamers, they also uncovered a library of over 200 gold CDs, including one containing Windows 95. A number of copied CDs were already boxed and set for shipment, including Windows 95, the BT phone disk and lots more Nintendo and PC software. These finds, combined with illegal products discovered at a separate bust made in Yorkshire, meant the crime unit had uncovered millions of pounds worth of pirated gold CDs in that month alone.

Funnily enough, while carrying out the Kidderminster raid they also found a number of items identified as coming from a recent burglary at the ELSPA offices.

Another colourful character, Nicolas Vivaldi, made a rather feeble attempt to escape conviction when he was charged with four offences of Copyright theft in July. Pleading not guilty to any of the offences, Vivaldi went on to accuse John Loader of planting a total of 41 counterfeit CDs on him and of altering letters to accomplices found on the suspect's computer.

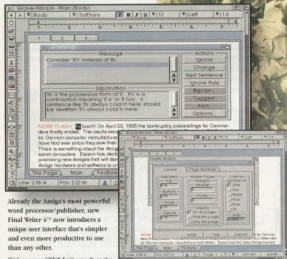
Not surprisingly the Magistrate dismissed these allegations and ruled that ELSPA's Crime Unit had acted correctly and uncovered clear evidence of his dealings in copied software. Loader later estimated the total value of the software in Vivaldi's possession at over one million pounds - none of which was paid for.



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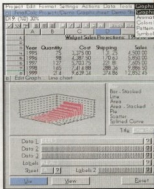
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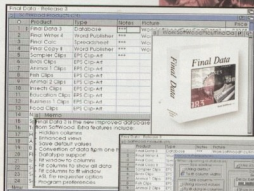
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latest version for enhanced
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Producing hard copy from your printer has always been a bit of a trial on the Amiga. What do you do when the computer you are working on can create 24-bit, 16 million colour graphics, but you can only print in 16 shades of grey? You should buy yourself a new colour printer, of course. What about if you are really into DTP but you only have an old 9-pin dot matrix printer? You buy a black and white laser or inkjet.

Surely those kinds of printers are way too expensive and designed for other types of computer? Well yes and no. It's true that in the current climate, with the Amiga attempting to hurl itself back onto the market, very few printer manufacturers are directly supporting Amiga computers. Even Wolf Faust, designer of the excellent Studio II, has no plans to support certain new kinds of printers. (Studio II is a program that has a number of different printer drivers for Amiga, and subtle ways of controlling them.)

What is worse is that some of the sexiest printers going around at the moment are actively non-Amiga, pro-PC. Some use Windows (spit) to do all the sorting out of the print, so the printer becomes just a dumb terminal on the end of the computer's processor. It would be extremely difficult to emulate this kind of printer on an Amiga unless someone wanted to spend a lot of time reverse engineering the technology. This is, sadly, not something anyone seems prepared to do at the moment.

It's not all black, as there are some folks who still distribute drivers for the printers they sell, and some printer manufacturers are still supporting the Amiga in some way.

What kind of printer do you need? Well, if your needs are exclusively text based, then a simple 24-pin dot matrix may be the answer. They are inexpensive, easy to run, and print on any kind of paper. The colour versions are very clever and give you impressive results.

At frenzy

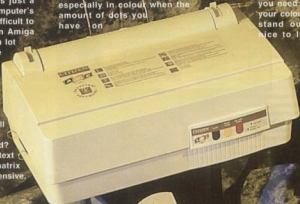
Phil South tests some of the best printers available for your Amiga in the 24-pin, inkjet and laser categories

provided, of course, you have access to some kind of Amiga printer driver that supports the full range of colours.

Twenty-four-pin printers are superior to 9-pin printers in that they deliver full letter quality text for correspondence and writing the great British novel. They also deliver quite high resolution graphics output, especially in colour when the amount of dots you have on

the page is compensated for by the blending together of dots of different colours.

They also print a lot of dots on the page very close together, which gives you very dense print. This is something you need if you want your colour prints to stand out and be nice to look at as



well. The down side is that they will always produce a slightly fluffy image due to the limitations of the technology. That is to say, old style typewriter technology – a hammer hitting paper through an inked ribbon.

An inkjet will be worth considering if you work with Desktop Publishing and graphics. Inkjets are almost like laser printers, except the print on the paper is water soluble ink, so wet fingers will smudge the print, like the marks from a fountain pen. Compared to laser printers, inkjets are cheap and produce comparable images on the page. Colour inkjets are better for colour work because they don't blend the colours or make the ribbon muddy, as happens in a dot matrix machine. The colour prints are always strong and saturated, although because the ink is wet when it hits the paper, you will produce the best results with specially coated inkjet paper. This is different to the usual

70 gram copier paper we all tend to use in our printers by default. For a happy medium between laser printers and dot matrix machines, inkjets represent the best value for money.

At the top end of the scale we have the

LED page printers and laser printers. True laser printers are hard to come by cheaply, although these days you can pick up a non-Postscript laser for about £400. The cheaper lasers are actually LED printers, which use the same Xerox hot drum technology and toner cartridges, but use an LED light source instead of a laser. The quality is comparable and the print does not come off on your fingers.

To give you a feeling for what kinds of machines are out there, we have assembled some likely suspects from Citizen, Canon and Oki. These take us on a short journey through all the different types of printer and give you some idea what to look for in a printer for your Amiga. We also give you a few other options at the end, but you're going to have to wait until then to find out what they are.

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Price: £279

Supplier: Citizen (01753) 212380



This is an odd looking little printer. It looks more like a friendly little robot than an inkjet printer. But hey, who am I to go name calling? The sheet feeder is in the back of the machine, a little slot into which you shove a little wad of paper. There is also a slot in the front for you to insert single sheets if that's your fancy.

The print quality is excellent, and the colours are clear and true. The single downside is that the Projet uses an all-in-one cartridge, and although you can change this easily for a black one when you're printing off reams of black ink-only letters, it's a bit of a fag to have to do that every time. You can, of course, just print out the odd letter in black from the cart, but this will run down the black faster than the other colours and might not be such a good idea.

Although there really is nothing wrong with this printer, I thought the design was a bit naff, and for Citizen, whose quality of workmanship I can rarely fault, the build quality was a bit plasticity. Although this is not really a major criticism, I don't think I would like to have something like this on my desk. It's quiet, it delivers the right sort of print quality, but I just don't like the look of it.

As inkjets go it's pretty good though, and the price is right – although I couldn't help thinking that it was only a short hop to the Canon BJ-4000c price. That said, if this is your price and you can go no higher without selling a family heirloom, then go for it. You won't get better at this price.



Driver: Citizen Project IIc

Page Speed: 120

characters per second

Built-in Fonts: 3

Downloadable fonts: none

DPI: 300

Sheet feeder: yes

Print quality: good

Canon BJ-4000C

Price: £319
Supplier: Canon 0181-773-6000



This is a dreamy printer with so much going for it it's hard to know where to start. Firstly, it's a small top loading unit which folds up when not being used like the Canon BJ-200ex, which means it takes up less space on your desk than most other colour printers. Secondly, it has gorgeous colour and deeply saturated prints which sing off the page. Thirdly, it is very affordable, considering the cost of colour printers in the past.

Although you get the best results using the special coated inkjet paper, you still get very credible results from the machine using simple copier paper. You can use the Canon to create colour artwork and originals for commercial printing, although it is, of course, preferable to create colour separations if you're serious about that, and you only need a monochrome machine if you want to do that.

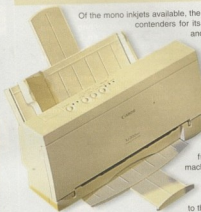
The best reason to buy this machine over any other one is the ink cartridge. Yes that little black thing inside. It has two separate wells for colour inks and mono, so if you do a lot of mono work you can just replace the black cartridge. In machines which feature an all-in-one cartridge, you have to switch cartridges and use a black-only cartridge for your mono work and switch back for colour and black.

If you need a colour printer then this is your man, simply because it looks so cool on the desk and has Amiga print drivers.

Driver: Canon BJ4000C
Page speed: approx. 2 pages per minute
Built-in fonts: 5
Downloadable fonts: none
DPI: 360
Sheet feeder: 100 sheets
Print quality: excellent

Canon BJ-200ex

Price: £228.99
Supplier: Canon 0181-773-6000



Of the mono inkjets available, the Canon represents the cream of the crop. The only possible contenders for its crown are the Hewlett Packard Deskjet family of printers and on the top end, the nice Oki LED page printers. Although these are more expensive, they are certainly pushing into inkjet territory.

The BJ-200ex is a compact and powerful monochrome inkjet printer which sits upright on your desk, not unlike its predecessors, the BJ-10 and BJ-20 printers, did. Standing up on end with a sheet feeder on the back was an option on the 10 and 20. With this printer (and indeed all new Bubble Jets) it's the only way to operate the machine. The sheet feeder, which was a £60 add-on in the previous versions, is moulded into the back of the unit and the paper goes in the top and shoots out of the front. This top-loading scheme means the footprint of the machine is small, in theory at least.

In practice, the paper has to go somewhere when it comes out of the front of the unit. This means that the little plastic stop has to be pulled out of the front of the machine to the full length of a piece of A4 paper.

Although you still have somewhere to

rest your coffee when you are not actually printing anything, when you print you have to move it and pull out the stop to catch the paper.

The controls are all on top of the machine, and as such are easy to access. All the functions of the printer are available from these buttons. Canon have ditched the dodgy slider power switch for a nice positive clickable button. One quibble I do have about the arrangement of the buttons on the top of the machine is that for the first few days I had the machine, I was constantly pushing the power button when I meant to put the printer on-line, because the buttons are right next to each other.

The other buttons give you a Line Feed/Form Feed, and switch the computer from high speed to high quality. Obviously, there is a trade off between speed and quality. The faster the paper comes out of the slot the less quality the printer will have time to put into the print.



Driver: Canon BJ200ex
Page speed: approx. 3 pages per minute
Built-in fonts: 8
Downloadable fonts: none
DPI: 360
Sheet feeder: 100 sheets
Print quality: good



Oki 810ex

Price: £799
Supplier: Oki Systems 01753 819819

This is a pearl of a printer and really does bring home to you how much better the quality of print is from a laser. This is, in fact, an LED printer, but the toner cartridge and effect you get are the same you would get from a laser. For DTP work, if you want to produce camera-ready art from your DTP program on paper, this is the best of the bunch. It is a little pricey at £799, but does the job very well and is very compact for a laser. The cheaper models, the OL400ex and OL410ex, are still on sale at £399 and £499 respectively, although these will soon be usurped by the new OL600ex and OL610ex as of October this year.

The print quality from this printer is fantastic and really makes you

feel like a professional when you run off a wad of pages and they all come out crisply printed from the top of the machine. Lasers are the top end of the printer spectrum, although the lower priced machines are starting to chip away at inkjet territory.

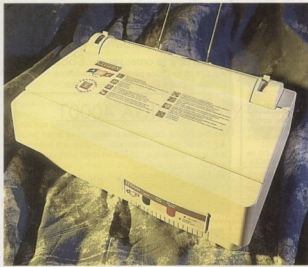
Although you might have had experience with inkjets and dot matrix printers before, using a printer with a toner cartridge is a big step. You turn into something of a toner cartridge expert very quickly, and perhaps as a side benefit you could land a job as a photocopy engineer. Toner carts are certainly a better bet for refilling because the toner is pretty much the same quality and darkness as the original substance. If you're spending £200-300 on an inkjet, it might be worth considering the Oki range.



Driver: HP LaserJet 4
Page speed: 8 pages per minute (14 seconds first page)
Built-in fonts: 45
Downloadable fonts: PCMCIA card slot
DPI: 600
Sheet feeder: 250 sheets
Print quality: excellent

Citizen ABC 24

Price: £149
Supplier: Citizen 01753 212380



The ABC is a new easy-to-use dot matrix printer which has colour options and a range of state-of-the-art features. I am unsure about how long 24-pin printers can continue to survive in a market that has so many new and cheap inkjet printers. How far can the technology develop before printer makers give it up as old technology?

In any event, this is an excellent 24-pin printer and is astoundingly quiet due to a unique construction which practically seals the whole unit, except for a little slot at the top to pop your paper into. The print quality is good and lacks much of the banding associated with dot matrix printers. This is with a new ribbon and I suspect this might not still be the case when the ribbon starts to flag. (Note: The test machine had a ribbon in the machine for shipping and during this test I used it to see what a dried up ribbon looked like. It actually performed quite well, with a little banding and greying around the edge, but it was no way as bad as I thought it would be.)

The colour is pleasantly dense and the custom print drivers for the Amiga make this a lot better. You often can't get drive printers to deliver the correct density, but Citizen have always been firm supporters of the Amiga. The unit comes with a disk containing the fast start software, which sets up the printer for you. Simply click on the disk icon, click on the ABC icon, and you're away.

The printer uses the Citizen Print Manager software, which allows you to adjust the print settings for gamma correction and colour saturation etc., meaning you can get truly sparkling colour prints. On the down side, you

have to ensure that you don't print too dense all the time because the printer ribbon starts to get a little muddy. The only quibble I had with it was the little bit of wire which pokes up to rest the paper on when it goes in and comes out of the printer. I kept catching my sleeve on it as I walked around my desk and it kept pinging off. I suppose I should just be more careful, right? But also, I think the wire could either be replaced by a plastic strip or be more firmly attached to the printer.

Top marks for ease of use, and on price it's hard to beat – unless you start shopping around for inkjets and dig a little deeper in the old pocket, that is. If 24-pin is as high as you can go, this is about the best you can get at the moment, especially if you're not too sharp about how to set up a printer on the Amiga. It's all done for you by the disk you get with it, so there's nothing to worry about, except where are you going to store all the bits of paper you run off it?

Driver: Citizen ABC 24
Page Speed: 64
characters per second
Built-in fonts: 5 LQ fonts,
2 scaleable
Downloadable fonts: none
DPI: 360
Sheet feeder: none
Print quality: fair

Studio Pro II

This program gives you print drivers which can provide better control over your printer, even if you already have a printer driver from the manufacturer. Some printers have problems with Amiga computers, mainly because the drivers are not really researched fully before release, and all Amiga programs are not tested on the system.

Certain problems have developed over the years with Hewlett Packard and Canon inkjets, for example, which sometimes do not print the image squarely on the page, as you would wish. This doesn't seem to happen all the time, otherwise the problem would be fixed by now. But the Studio Pro II program gives you almost unlimited control over the finished output.

The program also has 24-bit drivers so that you circumvent the 16 shades of grey limit on Amiga printers.

Best buys

I had a lot of fun with these printers, and the best of the bunch has to be the Canon BJ200ex. Although it doesn't feature colour it does have the right balance of price against performance. It is also the machine which installs easily into a lot of different computers without any tedious setting up. I have two Amigas and a PC here and the machine is capable of switching between all three machines (once the drivers are installed) without any complaints.

The print quality is very good, especially with a full Canon ink cartridge. I generally refill my cartridges, and although you get good value that way, the refill inks tend to be a little thinner. It also works better on higher grades of paper, and although it might seem economic to save money of cheaper pulper paper, it's a false economy because the print quality goes down the more the ink seeps into the paper. This goes for all the printers I tried really. Higher grade paper gives you better print, full stop.

If you can spend a bit more money I'd go for the Oki 600ex when it comes out, or if colour is specifically what you wanted I'd go for the Canon BJ4000c.

Other printers you should really look at are the Ricoh LP1200 Laser, priced at £499 from Silica. Not only does it come with Printer drivers for an Amiga, but it does six pages per minute and is a genuine laser printer. Other options are the Seikoshia range, which for some reason mimics the Citizen range in casing design and price, and the Hewlett Packard inkjets, which are just as good value as the Canon range and about the same in print quality.

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So, Final Writer Release 4 is upon us. From its lowly start as PenPal everyone's favourite word processor (at least compared to KindWords), it has risen through the ranks, via Final Copy, to its current status. Final Writer is Word to Wordworth's WordPerfect. The competition between the two titles drives them both on to gain that extra chunk of market share, which can only be good for us, the users. With more features and less cost than ever, Final Writer is really starting to shape up as a replacement for my text editor and PageStream.

So what has been added then? Well, there must have been some pretty severe changes internally to make the executable's size jump from a manageable 600k to a gargantuan 990k, notwithstanding the cute tabs for page and section markers.

PROPER GRAMMAR

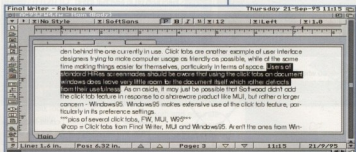
Well, for a start, there's the grammar checker. Previously sold separately, Softwood's Proper Grammar didn't make much of an impression on reviewers, but incorporated into the main body of Final Writer you can but admire Softwood's commitment to providing good quality software at very reasonable prices.

But has Final Writer reached the pinnacle of development? Is it a perfect word processor? Hardly. There are a few problems with this otherwise splendid package that need to be addressed before I would consider replacing my copy of PageStream and TurboText with it.

For a start, although quick compared to Wordworth, Final Writer is hardly a speed demon, especially when used on a graphics card like the Picasso. The screen refresh rate isn't particularly

It ain't over yet

Final Writer? Pah, Ben Vost reckons they'll go on for a while yet



If you've only got a Hi-res screen, turn off those click tabs or you'll spend forever scrolling through your document

impressive when used in a large number of colours, although it does become a lot more acceptable when using relatively few, say four or eight colours.

Next up is the lack of system friendliness. By this, I mean you can't change the Avant Garde typeface that is used for Final Writer's interface and there are various utilities that won't work with Final Writer that people like to run. For instance, I had no luck getting Magic

Menu to run, having to temporarily turn it off while using Final Writer.

More annoyingly, I couldn't replace the rather spartan requester that Final Writer is furnished with with a ReqTools or Magic File Requester requester which meant that deleting files, renaming them or creating new directories had to be done outside the file requester or the program (there is a delete file function on Final Writer's toolbar).

TOO MANY SIZES

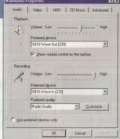
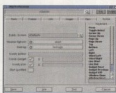
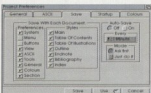
Other items on my list of complaints include the fact that the font size popup on the main window lists every point size between 4 to 300 points, rather than going for the more common 12, 14, 16, 18, 24, 36, 48, 72-style list. This makes the popup very slow for converting text from very small to very big sizes, meaning you have to resort to the main type preferences window.

Perhaps I'm alone in this, but not only would I occasionally like to see characters like spaces, tabs and returns, but I would also like the ability to find and replace them. This function is particularly useful when importing ASCII text files to make them flow according to the paragraph settings you have in Final Writer.

Final Writer gets around this by offering special import options in the project preferences, which gets around that problem, but it is still very useful to be

Fancy a tab?

Click tabs from Final Writer, MUI and Windows 95. Aren't the ones from Windows square and boring? Bit like Windows itself, I guess

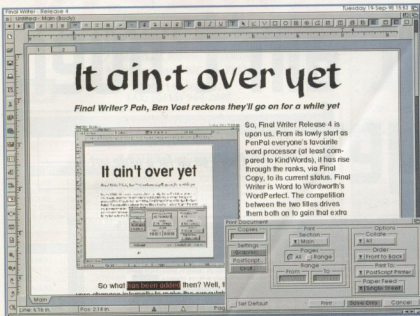


Final Writer's new tabs feature won't be unfamiliar to users of MUI where they have been in use for the past year as a replacement for cycle gadgets. The tabs allow easy access to other sections or pages of a document, and facilitate much smaller preferences requesters because every other section of the preferences can be hidden behind the one currently in use.

Click tabs are another example of user interface designers trying to make computer usage as friendly as possible, while at the same time making things

easier for themselves, particularly in terms of space. Users of standard Hi-res screenmodes should be aware that using the click tabs on document windows does leave very little room for the document itself, which rather detracts from their usefulness.

As an aside, it may just be possible that Softwood didn't add the click tab feature in response to a shareware product like MUI, but rather a larger concern - Windows 95. Windows 95 makes extensive use of the click tab feature, particularly in its preference settings.



Final Writer presents a clean interface to the public. Notice the click tabs at the top and bottom of the document window. These allow easy access to other parts of the document

able to remove or replace such formatting codes once a file has been loaded. One of the nice features of Final Writer is its ability to save screen preferences with documents, thus bringing the documents back exactly as you left them. This can be particularly handy when it comes to using templates, say for labels. You can set up an A4 page, but you won't need all the clutter of click tabs and button bars – all you need to see is that the text is flowing nicely into the labels. The same thing applies if you have a template for a birthday card. An A4 landscape page with the drawing tools at the ready and some fancy fonts to live it up. Perfect.

The problems I have pointed out aren't to suggest that Final Writer is not a fine program. It is. All I'm doing is pointing out some potential problems that could have been trapped by now. If this was a first

release of the program I could happily sit back and say, "Look at the superb graphics manipulation commands, the way Final Writer works with EPS fonts and clip-art (and the sheer amount of them that are supplied with the program), the style tags, sections, index and table of contents generation, etc."

But it is the fourth. I always feel that when I look at an update, less should have been added by way of new features, and existing ones should be further honed. Directory Opus is a fine example of this – a stunning new paradigm in directory management, but at the expense of simplicity and ease of use.

SYSTEM ESSENTIALS

RED = Essential BLACK = Recommended



The bottom line

Product: Final Writer Release 4
Supplier: Gordon Hanwoods
Price: £74.95 (upgrade is
£24.95 + £2p+p)
Tel: 01773 836781

Ease of use	8
Implementation	7
Value for money	9
Overall	8

Grammar? Granpa?

So how does the grammar checker in Final Writer work then? Well, unlike the spell checker which just has to look at each word in turn (checking for hyphenation) and compare it to the entries it has in its dictionaries, the grammar checker has to actually parse each sentence.

The term parsing was first used in computer terms for high-end speech recognition programs (and grammar checkers), but it became familiar to players of computer games back in the bad old days of text-only adventures. Who can forget the Scott Adams series, or the Infocom adventures? Well, it seems most people have, happier now to deal with glossy graphics and shallow gameplay, but I digress.

Back in Infocom's heyday, a sentence parser was limited to a simple two-word entry – get fork, go north, etc. – and that was easy, but as time moved on, game players demanded greater complexity, so multi-word parser were developed for adventure games. Sentences like 'Put the pot plant into the plant pot', were bandied about as examples of the cleverness of the games companies parsers. These developments were aided by more serious companies' efforts to bound the rules of English, a difficult language to get to grips with grammatically.

ADVENTUROUS

Anyway, the grammar checker in Final Writer works in a similar way to those text adventures. It looks for the boundaries of a sentence (usually, but not exclusively, a full stop and a capital letter) and then proceeds to take the sentence apart bit by bit to find the subject, predicate and object – essential parts of a sentence. If it can't find one or more of those things, it will check a set of rules that allow for such exceptions, and if it doesn't match one of those rules it will bring up a message.

A good grammar checker will also look for things like the passive mood ('The ball was thrown by the boy' as opposed to 'The boy threw the ball') which can lead to confusion. This is obviously a gross simplification of all the steps the grammar checker has to go through just to give you its necessarily picky review of your writing, but at least it gives you some idea of the complexity behind the process.

The final word

In conclusion then, Final Writer Release 4 is a great piece of software. Softwood have done an admirable job on it and its completely revamped manual, and have given a low-cost upgrade path from any previous version, so no user should be without it. Touches like the click tabs prove that Softwood are keeping their ideas up-to-date, following the example of GUI and Windows 95, and the fact that the grammar checker is now incorporated into Final Writer means that the value for money that this package provides is second to none.

Be aware though that the program now takes up a minimum of 5Mb of hard drive space (and only works from hard drive) and really needs something a bit more powerful than a 68000-based machine for optimum use, along with at least 3Mb installed on your machine.

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People queuing up in Oxford Street in London at 10 o'clock at night, waiting, sweaty cash in hand, eyes glazed over and mouths drooling at the prospect of their new software purchase. Are they waiting for Sonic Tuesday? or Sega Saturday? No, they are waiting to buy an operating system. Windows95, to be precise.

With a lot less fanfare, Apple launched System 7.5.1 in March of this year. It wasn't a major update, it merely added additional flexibility, but it is the current (as I write this piece) version of the Macintosh's operating system.

Workbench 3.1 has been around for well over a year now. Licensed from Commodore before they went bust by Village Tronic, this will be the operating system most familiar to our readership. But which one is the best?

System 7.5.1

System 7.5.1 (System7 from now on) is the operating system for all Macintosh-compatible computers. It comes on a CD-ROM or eight high density floppy disks, taking roughly ten minutes for a full install from CD. Once installed, System7 presents a very friendly face to the novice user, with an almost patronising attitude to mere humans at times.

As an example, should the machine crash or you switch it off without going through the shutdown process, when you next boot up a window will appear saying that you should use the shutdown menu item next time. Fine – if it was your fault then you can accept that, but most of the time it was because the machine crashed, not you!

System7 also shares Windows' feature of using the same screen for all open applications, with windows overlaying windows overlaying windows. This can result in a confusing display, particularly if you are using a standard resolution monitor (which is smaller than PAL-HiRes Laser). Unlike the Amiga's depth gadget, System7 has an applications menu allowing the user to jump straight to different applications or hide them to clear the screen up a bit.

System7 could also really use the same level of multitasking as the Amiga. All too



System7's method of organising icons when viewed by name is superb. The list can be reordered by clicking on the appropriate entry at the top of the list

Workbench 3.1

Let's start at home with Workbench before moving on to more exotic climes. Everybody should be familiar with the six disk install set consisting of Workbench, Extras, Fonts, Storage, Locale and Install. The whole process takes about five minutes provided you already have a suitable hard drive partition set up. Workbench 3.1 also comes with a Kickstart ROM which needs inserting in place of your current Kickstart chip, this obviously increases the time needed for an installation but the amount depends on how accessible the Kickstart chip is in your machine.

Of the three operating systems on review here, Workbench is by far the smallest. It doesn't even come with a game (by way of contrast, Windows comes with one game on the CD, a patience game, minesweepers and further games on the Plus Pack CD). System 7 comes with a number sliding puzzle and a jigsaw, and there's also a demo version of a patience game on the

CD version of the OS). More important, though, is the fact that Workbench comes with very little by way of additional utilities. This is because Workbench has always been geared towards a floppy-based machine. Hopefully, this will change now that we have Amiga Technologies at the helm – proper CD-ROM software, built-in support for networking and the Internet, improved printer and colour support are all needed in a modern operating system, none of them are incorporated into Workbench.

Some of the functionality of the other two OSs could be implemented too. Copying files is a good example. On both Windows 95 and System 7, when you copy one or several files, you get a progress meter showing how many files remain to be copied. On Workbench you just end up with the sleepy pointer and no way to cancel a long operation. Sure, unlike the other machines, you can continue to use the other programs you have running at

Modus operandi

often you end up waiting for an operation to end before you can do something else. Again, formatting floppy disks is a good example. Under Workbench you could be formatting four floppy disks and still be able to continue doing anything you like that doesn't involve floppy drive access.

System 7's method of determining what to do with a file is based on what application created the file in the first place, the information being contained in the file's icon. This means you can simply double-click on any file and its creator program will load and load the file.

Other features of System7 that are shared by Workbench include RAM disks and drag and drop. The former is not dynamic and has to be set in advance, chewing up vital RAM and the latter still isn't supported in any real way.

Requirements

	Min	Rec
Memory:	1Mb	8Mb
Processor:	68000	68040
HD space:	6Mb	20Mb

Features	7
Implementation	7
Ease of use	10
Overall	7

Comment: Most work is actually done by the operating system which means you end up with highly compatible software and the networking support is excellent and simple to achieve, but System7 really does need better multitasking.

Windows 95

Well, what can you say about the world's most popular operating system? 'It sure is big', would probably be my first comment. Windows 95 takes about 45 minutes to install depending on what hardware and software you already have installed on your machine. The optional Plus Pack will bump that figure up by about half an hour.

The software of choice for businesses the world over has all you would expect from a modern operating system except, perhaps, friendliness and a little bit of soul – if that's not an oxymoron. The metallic greys that grace every menu and window get a little wearing after a while and the conspiratorial attitude of Windows towards its users is somewhat annoying.

All three operating systems are fine if all you ever do is fire up that word



Windows95's task bar can become more trouble than it's worth if you have a lot of software installed on your machine



Requirements

	Min	Rec
Memory:	512k	4Mb
Processor:	68000	68030
HD space:	6Mb	20Mb
Features _____		4
Implementation _____		8
Ease of use _____		7
Overall _____		7

Comment: Limited by being floppy-based, hopefully future revisions will add more features such as networking and some of the current shareware commodities to the installation without losing speed or efficiency.

With all the hype surrounding the launch of Windows95, Frank Nord thought it was about time someone compared the top three operating systems, so we let him



Requirements

	Min	Rec
Memory:	4Mb	16Mb
Processor:	386DX33	486DX66
HD space:	60Mb	150Mb
Features _____		10
Implementation _____		7
Ease of use _____		5
Overall _____		7

Comment: A bit of a monster, I think the Microsoft minimum specs are very much tongue in cheek as the recommended specification is more like a minimum. Most people seem ambivalent about Windows 95 much-vaunted abilities saying that it only really serves to show just how bad Windows 3.1 was. Duncan Evans, editor of PC Home actually said: "I prefer the Amiga's Workbench to Windows 95", which shows how little people think of it.

Microsoft's new slogan is "Where do you want to go today?" Perhaps when you get there you'll find Workbench and System7 already there.

Coming from an Amiga background, I am obviously swayed by the way Workbench and System7 work. Both have a very easy way of working with the OS interface. The fact that floppy disks appear when you insert them, menus always appear at the top of the screen, and that files are stored in places which can be found on the hard drive are all visual aids to consistency.

Most operations under Workbench are performed quicker than their System7 counterparts and Workbench has more depth than its icons would have you believe. Workbench allows you to hide icons that are not directly usable, thus clearing up the clutter that results on System7's desktop. Both systems are preferable to Windows' 'hunt the file' approach.

But Windows 95 is stunning in its comprehensiveness. The sheer amount of added features and support for third-party add-ons is incredible and goes some way into accounting for Windows' massive 90M installation size. Some of that size is also taken up with gimmicky features like animated pie charts which demonstrate how much memory remains on your machine (which probably takes up a chunk of that memory itself) and flying sheets of paper when you copy files, which are really unnecessary.

As for hardware requirements, although Macs are seen as being the most expensive of the three machines, it will probably actually cost you more to maintain a Windows 95 machine to a comfortable state. Throw away that cheap no-name graphics card, ditch that slow IDE drive, you really need state of the art components to make a Windows 95 machine fly. It will obviously come as no surprise to find out that the Amiga is the cheapest platform to start with, especially given the fact that a hard drive is considered a luxury.

All in all, even given Workbench's numerous shortcomings, I still like it better than the other two. Much of the usability of Windows 95 and System7 can be added to Workbench by using shareware and commercial utilities and commodities. However, if things aren't improved by Amiga Technologies over the next year or so, then perhaps I would consider the Mac OS as a convenient alternative. As for Windows 95, you can forget it.

processor or paint package, work, save your files and then switch the machine back off again. But of the three, I would have to say that Windows 95 is the most baffling to get deeper than the surface with. System7 practically doesn't have any depth, and although Workbench can be quite daunting from a shell window, at least the files are organised into directories.

Windows 95 is files, files and more files, only referred to by cryptic eight character filenames and their three character extensions (Windows 95 now supports filenames with up to 255 characters, but you can bet that a lot of software won't use them until Windows 95 is well and truly established), dumped into one big directory.

The hardest thing to get to grips with is the degree to which Windows 95 abstracts the desktop environment metaphor. On a desk, if you want to write a letter, you pick up a pen. Under System7 or Workbench you can click on a word processor icon. However, under Windows 95 you have to click on a button that does the equivalent of handing you a pen from inside one of your desk drawers. Fine until you need to look for the pen yourself. Microsoft have obviously worked long and hard on improving the user-friendliness of the package, but I certainly don't envisage PC support companies going out of business in droves because Windows is now so easy to use.

Add-in system extensions – can you add extra utilities, etc. at system startup? Workbench has WBSStartup. System7 has the system extensions drawer, but extensions can **only** be started at startup. You can however turn all extensions off without needing to alter any files at startup by holding down the shift key as System7 boots. Windows 95 has the Startup drawer.

24-bit support – both Windows 95 and System7 directly support 24-bit interfaces. Workbench relies on third-party software like CyberGraphX.

Multiple screen support – System7 supports multiple monitors as standard. Workbench only allows for multiple screens on the same monitor.

Networking – System7 comes with a networking protocol called AppleTalk as standard and all Macs come with the necessary hardware to enable a network. Windows 95 has support for several types of networks and network cards for a PC can cost as little as £35.

CD-ROM support – System7 is the only operating system that will boot directly from a CD. Workbench only comes with minimal support for CD-ROM and has no audio CD player.

Comms and the Internet – Windows 95 comes with a simple comms package and has a fax facility. It also comes with the dreaded Microsoft Network which is supposed to report on the contents of your machine. The Plus Pack adds further facilities to an already good selection.

Guide

Security – System7 and Windows 95 are pretty secure, although not quite up to the same level as WindowsNT.

Pre-emptive 32-bit multitasking – Workbench really scores here, being able to multitask on the minimum of memory and processor speed. Proper multitasking is not planned for the Macintosh operating system until the end of 1997. Windows 95 is, for the most part, fully multitasking, but most software that runs under it is still geared towards a 16-bit co-operative multitasking environment.

Runs from floppy? – unsurprisingly, Workbench is the least hampered by having to run from floppy although it can be done under System7.

Foreign language support – both System7 and Windows 95 have to be reinstalled in the target language for foreign language support while Workbench's locale feature can be changed on the fly. The downside for Workbench is the fact that there are no alternate alphabet versions such as Japanese or Greek.

Plug & Play – the Amiga has always had AutoConfig to configure zorro cards and other peripherals attached to the machine and the Macintosh always had the NuBus protocol. Now, Windows 95 adds some support for similar ease of use, but this is not universal.

CLI & GUI – System7 only provides a programmer's CLI which has a limited range of functions and is only accessible by a programmers button on the side of some Macs.

Systemwide programming language – Workbench really scores here too with ARexx.

Representational Interface – does the screen accurately represent the state of your machine? Windows 95 falls down here because the icons displayed bear no relation to the location of the files on your hard drive, and floppy drive icons are always available even when there are no floppies in them.

Universal menus – under System7 and Workbench the menus are always in the same place: at the top of the screen. Windows 95 does away with this consistent approach by attaching menus to individual windows or the right mouse button.

System preference changes possible during operation – Workbench has a problem with applications open on the Workbench itself (which could be solved by programmers making their applications into commodities), but otherwise, any preferences can be changed without the need to reboot. System7 has no problem with changes made, but Windows 95 can only be changed in the most trivial way without needing to reboot.

Three button mouse support – System7 only officially recognises a single button mouse and most applications under Windows 95 also only use a single button, although special functions are usually applied by the right mouse button.

Undelete function – Windows 95 has a function to recover deleted files.

Hard drive self-repair – when write errors occur all three OSs will revalidate the drive in question so that, although the file in question might be lost, hard drive integrity is maintained.

Hard drive optimisation – System7 will optimise the hard drives content by the expedient method of holding down a key combination when booting. When equipped with the add-on Plus Pack, Windows 95 will also let you optimise the hard drive.

Virtual memory support – most virtual memory systems rely on an MMU and since so few Amigas come equipped with one, there has never been virtual memory support in Workbench.

Quickstart applications menu – System7 provides both a configurable menu of applications called the Apple menu and a dock called the Launcher to start programs. Windows 95 provides the user with an enormous menu called the Task Bar which lists every single application on the user's hard drive along with recently opened files.

Disk Compression – Windows 95 automatically disk doubles the hard drive as Windows is installed and also takes care of application added afterwards.

Style Guide – all three OSs have a style guide for applications, but Workbench is the only one that doesn't adhere to its own style guide.

Help for the disabled – Workbench's help for the disabled is limited and implicit but you can adjust the colour scheme and make fonts more legible by making them larger.

Online help – Windows 95 comes with the most comprehensive online help of the three operating systems compared, Workbench comes with the least comprehensive (ie. none).

Dynamic RAM disk – Workbench is the only OS which has a standard, dynamically sized RAM disk. By dynamically sized I mean that it only takes the amount of memory that it requires at the time and grows and shrinks as necessary.

OS comparison

Item	Workbench	System7	Windows 95
Add-in system extensions	Yes	Yes	Yes
24-bit support	No	Yes	Yes
Multiple screen support	No	Yes	No
Networking	No	Yes	Yes
CD-ROM support	Yes	Yes	Yes
Comms & Internet	No	No	Yes
Security	No	Yes	Yes
Pre-emptive 32-bit multitasking	Yes	No	Yes
Runs from floppy	Yes	Yes	No
Foreign language support	Yes	Yes	Yes
Plug & Play	Yes	Yes	Yes
CLI & GUI	Yes	Yes	Yes
Systemwide programming language	Yes	No	No
Representational Interface	Yes	Yes	No
Universal menus	Yes	Yes	No
System preference changes possible during operation	Yes	Yes	Yes
Three button mouse support	Yes	No	Yes
Undelete function	No	No	Yes
Hard drive self-repair	Yes	Yes	Yes
Hard drive optimisation	No	Yes	Yes
Virtual memory support	No	Yes	Yes
Quickstart applications menu	No	Yes	Yes
Disk compression	No	No	Yes
Style guide	Yes	Yes	Yes
Help for the disabled	Yes	Yes	Yes
Online help	No	Yes	Yes
Dynamic RAM disk	Yes	No	No



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Amiga Computing
DECEMBER 1995

A miga users might have a few gripes about what Escom/Amiga Technologies are doing to their favourite computer, but when it comes to 3D packages we're still spoilt for choice, with LightWave, Imagine, Real 3D (and others) all readily available, and Cinema4D waiting in the wings.

Although the first three have now been ported to other platforms, they started life on the Amiga and, as such, already claim a dedicated coterie of users. Okay, I'll admit you need a pretty souped-up (and expensive) Amiga to keep pace with the speed of any of these programs on a Pentium PC, and you can forget about even getting close to the rendering speed of the likes of DEC's Alpha machines, but many jobbing graphics and 3D folks are sticking with their Amigas and holding out hope that their favourite graphics computer will, like the fabled Phoenix, one day rise again from Commodore's ashes.

Anyone already familiar with Real 3D will know that it has always had its own particular brand of quirkiness which sets it apart from other programs, but I guess every 3D program has its own charm and curiosity, which probably endears it to its merry band of users just as much as functionality and cost does.

IMPRESSIVE

Those familiar with other 3D Amiga packages may be overwhelmed by Real's imposing interface and by the sheer range of tools and functions it makes available, not to mention the whole new set of terminology, hot-keys and methods of working which Real employs to do its magic. But in the hands of a skilled operator, Real 3D can compete on equal terms with any of the current Amiga 3D programs, and if you were to compare it with expensive high-end packages such as Alias, which costs over £20000, Real 3D can still hold its own with – and even improve on – most of these expensive programs. Which is, you must admit, kind of impressive!

What particularly sets Real 3D apart is that it is

Dem bones, dem bones

Improved skeletal control has also made it into version 3, providing extra options for friction and fidelity which provide more realistic movement and wrapping of meshes over the skeleton. In particular, fidelity significantly reduces the amount of unwanted distortion which can occur as a surface is folded – for example, at the back of a knee-joint, for example. I'm told that the only other 3D program which has this feature is Alias.

If you combine skeletal control with Inverse Kinematics then you've got the perfect method for animating organic and mechanical objects both more

simply and more convincingly than any other Amiga 3D program.

In case you were wondering, Real 3D has the a bitly, like Imagine but unlike LightWave, to mix multiple materials on an object, so complicated surface textures can be achieved with relative ease.

Finally, while we're on the subject of modelling, Real can now handle bumpmap shadows, so when the shadow of an object falls across a bump-mapped surface the shadow edges can be made to follow the notional heights of the bumps of the map. This sounds boring, but it looks pretty good in practice.

both very configurable and very flexible, and has some extremely powerful features (such as Inverse Kinematics, Collision Detection and B-spline modelling) which no other Amiga 3D program has yet matched, even though they have had plenty of time to play catch up.

For example, you can set Real 3D's editing environment up in almost any way you like. If you want two scene views, a toolbox and an object selection window on a hi-res screen, you can design the interface to suit your needs.

If you don't like the way the Toolbox is laid out, just change it. Add as many of your favourite tool icons as you want and there you go – a GUI configured the way you want it to be. Try doing that with LightWave or Imagine!

Real 3D also has a unique way of dealing with its object management, for which it uses a hierarchical system

(think of it in terms

of disk directories and sub-directories) which can encompass sub-levels and various other factors, such as materials and animation methods, which will have differing effects depending where in the hierarchy they are placed.

The next

Gary Whiteley looks

at Real 3D

version 3



B-spline modelling, skeletons and inverse kinematics allow Real 3D to produce smooth skinned models of all kinds, not just Barbie dolls



Convincing-looking glass is just one area where Real 3D scores over the opposition as far as materials are concerned



With Real 3D you can make scenes that could be confused with photographs

Rather than having to group or parent objects together as in other 3D software, simply moving a directory level into another level can make all the difference. By having different levels of hierarchy, a large degree of control can be exerted over how objects are textured or how they behave under the influence of Real's various animation methods.

Selecting an object to manipulate is as easy as picking its name from the Select window. Multiple selections can also be made, so that any given group of objects can be moved or effected simultaneously,

though this will depend to some extent where they sit in the hierarchy.

Although there may appear to be a lot of menu items and icons to point and click in Real 3D, that's only half the story, for many of Real 3D's settings are hidden away in sub-menus which take some time to explore, and even more time to become really familiar with. As well as the more obvious Material and Render settings windows, there are attributes settings for the properties of each object (such as whether it casts shadows, has motion blur or a number of other properties), settings

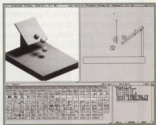
for how the GUI works, and so on.

All in all, the mechanics of using Real 3D can be rather daunting for the novice, and even those versed in other 3D software could have a hard time getting to grips with the depth and breadth of Real 3D.

That's before I've even mentioned RPL, the Real Programming Language, which allows the user optional access to almost every aspect of Real 3D, enabling a savvy 3D'er to write their own scripts to be utilised in whatever fashion they can dream up. Want to extend Real's 2D particle system? Write an RPL script. Want to impart special properties to an object? Write an RPL script. The trouble is, RPL can be a pig to use since, like most things Real, it works in an unusual way and writing RPL scripts is therefore not the easiest thing in the world. On the bright side, most Real users seldom, if ever, use RPL, so don't let the idea of it put you off.

Right, I think I've made it pretty clear that Real 3D isn't a program for either the faint hearted or the inexperienced, so let's now take a look at some of the things that Real 3D v3 can do.

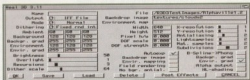
Collision detection routines are built in with Real 3D, unlike other Amiga software



There are several methods of animating with Real 3D. The Time Line and Key Frame editors are shown here, with a spine-based, path-following figure



With R3D's extensive materials editor there is plenty of scope for making your surfaces the way you want them to be



Real's rendering settings window controls all the aspects of how your images will be rendered or previewed

generation

Modelling

Unlike Imagine and LightWave, which mainly use points, edges and polygons to construct their 3D objects, Real 3D uses a combination of CSG (Constructive Solid Geometry) mathematical primitives and B-spline (smooth curve) mesh modelling to create objects which exhibit far superior curved surfaces than the polygon/Phong shaded objects produced by Imagine or LightWave.

While Real 3D's approach generates very smooth-looking objects, it can sometimes be difficult for a novice or even intermediate user to get to grips with building complex models as easily as with, say, LightWave or Imagine. This is because there can be a lot of procedures to follow which require an intimate knowledge of Real 3D's modelling tools and, with so many to choose from, it can be hard to work out the right approach in the first place.

As an example, there is a tutorial on building a smoothly-connected simple hook and ring object in the manual which takes the user through a series of quite complex steps involving construction, conversion and deletion of components as the object is designed. Without such guidance, most users would never figure out this approach and, even if you've followed the tutorial several times, you'll still have to come back to it to unravel the procedures again should you ever need to make a model using similar techniques. I suppose what I'm trying to say is that Real 3D has a learning curve which is steeper than a Space Shuttle trajectory and to really get the best out of this software you won't necessarily need a degree in rocket science, but it might just help.

Paint that picture

Real 3D has always had a pretty nippy rendering engine with a lot of output options, ranging from simple previews to full-blown 24-bit (or Targa, BMP or PPM) renders at any size you need (and your Amiga can handle). Several new additions have been made in v3, including the ability to both export and import Jpeg files directly, and SuperSampling, which increases the rendering accuracy (at the cost of extended rendering times) by rendering the image larger than is necessary and then resampling it down to the desired output size.

LENS FLARE

Another addition is AutoBox, which can either increase rendering speed by optimising how Real uses memory resources, or permit users with less memory to render images which may have been impossible before.

Version 3 sees the addition of plug-in Post-Rendering Effects which can be added as they become available. The current ones include Lens Flare (which unfortunately aren't a patch on either LightWave's or even Imagine's less than perfect lensflares), DistanceBlur and Glow,

Here's the box from *Space Hulk*, with back-drop and characters built and rendered in Real 3D



which provides nice glowing effects on objects.

But of course, Real 3D does much more than produce still images. As you would expect, it can also produce animation sequences (for output to video, digital disk recorders such as the PAR and also in its own internal format for lower quality display on the Amiga itself).

Real has a variety of ways of not just producing animations, but also of control-



This scene from *Electronic Arts' Space Hulk* game was created entirely with Real 3D

CSG equals faster rendering

As I've said, one of Real 3D's strengths is the way it models and the quality of the images which the modelled objects are capable of producing. However, this can lead to an unexpected problem since polygonal objects built in other software cannot be converted to CSG models in Real 3D, so they will always remain polygonal once they are imported, although Phong smoothing can be applied just as in other programs.

However, CSG and B-spline models use far less memory than their polygonal counterparts. CSG objects also render much faster than polygonal ones. But if you really need to import objects from other sources you can – as long as they are in either .DXF (which Real 3D can also export) or Sculpi3D format. No Imagine, LightWave or any other format is acceptable, which is really crazy, and it's about time someone, somewhere, wrote a conversion utility to convert polygonal objects (of various formats) into CSG/B-spline objects for Real. You know it makes sense.

One of Real 3D's unique features is that its View windows can be configured to provide a true 3D environment for modelling and positioning objects, permitting free movement in any direction within the view. So unlike Imagine or LightWave, where objects are modelled in a separate editor, Real 3D objects can be modelled directly into a scene at the size and position in which they are required, so there's no need to load the objects into an editor or Layout screen just to position them where you need them.

A new feature of Real 3D v3 is its ability to draw spline curves directly onto the surface of a spline mesh so that the new curves follow the surface of the mesh exactly. Not only is this very useful for adding new parts to an object, so that the intersections remain perfectly smooth, but surface drawing can also be exploited when it comes to animation, enabling a curved path to be drawn over a bumpy mesh, for example, and then have the object follow the path so that it moves precisely over the bumpy mesh in a naturalistic way.

ling how objects are moved around within a scene, thanks to its wide variety of animation methods. It's quite a simple matter to make objects follow complex paths and simultaneously perform rotations etc. With the use of more involved methods, collision detection can be invoked so that Real detects when objects collide and what their subsequent motion will be, dependent upon mass, friction, gravity, spin and other factors. It must be said that Real's collision detection can be unpredictable though, and the user will need to experiment to achieve satisfactory results.

In v3 a more comprehensive key framing system has been introduced which will help those coming from other software, but there are other, more flexible animation systems which also can be employed.

Verdict

Real 3D v3 extends the scope of this powerful 3D modelling, rendering and animation system and the new manuals are both better and more useful than previously, though they can still be mystifying at times. If you can stand the strain, and Real's over-technical terminology, and you're looking for a 3D program which will provide far more options than either Imagine or LightWave, then Real 3D is definitely worth serious consideration.

I've seen what it can do in expert hands, and I'm impressed. But be warned, if you're a 3D rookie then think hard before you buy Real 3D – it might just turn you off 3D rendering forever if you can't get to grips with it.

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030

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Supplier: Activa International

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An essential collection of disk recovery software tools for Workbench 1.3, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.0, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.0, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 10.0, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 11.0, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 12.0, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, 12.8, 12.9, 13.0, 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 14.0, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16.0, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 17.0, 17.1, 17.2, 17.3, 17.4, 17.5, 17.6, 17.7, 17.8, 17.9, 18.0, 18.1, 18.2, 18.3, 18.4, 18.5, 18.6, 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51.9, 52.0, 52.1, 52.2, 52.3, 52.4, 52.5, 52.6, 52.7, 52.8, 52.9, 53.0, 53.1, 53.2, 53.3, 53.4, 53.5, 53.6, 53.7, 53.8, 53.9, 54.0, 54.1, 54.2, 54.3, 54.4, 54.5, 54.6, 54.7, 54.8, 54.9, 55.0, 55.1, 55.2, 55.3, 55.4, 55.5, 55.6, 55.7, 55.8, 55.9, 56.0, 56.1, 56.2, 56.3, 56.4, 56.5, 56.6, 56.7, 56.8, 56.9, 57.0, 57.1, 57.2, 57.3, 57.4, 57.5, 57.6, 57.7, 57.8, 57.9, 58.0, 58.1, 58.2, 58.3, 58.4, 58.5, 58.6, 58.7, 58.8, 58.9, 59.0, 59.1, 59.2, 59.3, 59.4, 59.5, 59.6, 59.7, 59.8, 59.9, 60.0, 60.1, 60.2, 60.3, 60.4, 60.5, 60.6, 60.7, 60.8, 60.9, 61.0, 61.1, 61.2, 61.3, 61.4, 61.5, 61.6, 61.7, 61.8, 61.9, 62.0, 62.1, 62.2, 62.3, 62.4, 62.5, 62.6, 62.7, 62.8, 62.9, 63.0, 63.1, 63.2, 63.3, 63.4, 63.5, 63.6, 63.7, 63.8, 63.9, 64.0, 64.1, 64.2, 64.3, 64.4, 64.5, 64.6, 64.7, 64.8, 64.9, 65.0, 65.1, 65.2, 65.3, 65.4, 65.5, 65.6, 65.7, 65.8, 65.9, 66.0, 66.1, 66.2, 66.3, 66.4, 66.5, 66.6, 66.7, 66.8, 66.9, 67.0, 67.1, 67.2, 67.3, 67.4, 67.5, 67.6, 67.7, 67.8, 67.9, 68.0, 68.1, 68.2, 68.3, 68.4, 68.5, 68.6, 68.7, 68.8, 68.9, 69.0, 69.1, 69.2, 69.3, 69.4, 69.5, 69.6, 69.7, 69.8, 69.9, 70.0, 70.1, 70.2, 70.3, 70.4, 70.5, 70.6, 70.7, 70.8, 70.9, 71.0, 71.1, 71.2, 71.3, 71.4, 71.5, 71.6, 71.7, 71.8, 71.9, 72.0, 72.1, 72.2, 72.3, 72.4, 72.5, 72.6, 72.7, 72.8, 72.9, 73.0, 73.1, 73.2, 73.3, 73.4, 73.5, 73.6, 73.7, 73.8, 73.9, 74.0, 74.1, 74.2, 74.3, 74.4, 74.5, 74.6, 74.7, 74.8, 74.9, 75.0, 75.1, 75.2, 75.3, 75.4, 75.5, 75.6, 75.7, 75.8, 75.9, 76.0, 76.1, 76.2, 76.3, 76.4, 76.5, 76.6, 76.7, 76.8, 76.9, 77.0, 77.1, 77.2, 77.3, 77.4, 77.5, 77.6, 77.7, 77.8, 77.9, 78.0, 78.1, 78.2, 78.3, 78.4, 78.5, 78.6, 78.7, 78.8, 78.9, 79.0, 79.1, 79.2, 79.3, 79.4, 79.5, 79.6, 79.7, 79.8, 79.9, 80.0, 80.1, 80.2, 80.3, 80.4, 80.5, 80.6, 80.7, 80.8, 80.9, 81.0, 81.1, 81.2, 81.3, 81.4, 81.5, 81.6, 81.7, 81.8, 81.9, 82.0, 82.1, 82.2, 82.3, 82.4, 82.5, 82.6, 82.7, 82.8, 82.9, 83.0, 83.1, 83.2, 83.3, 83.4, 83.5, 83.6, 83.7, 83.8, 83.9, 84.0, 84.1, 84.2, 84.3, 84.4, 84.5, 84.6, 84.7, 84.8, 84.9, 85.0, 85.1, 85.2, 85.3, 85.4, 85.5, 85.6, 85.7, 85.8, 85.9, 86.0, 86.1, 86.2, 86.3, 86.4, 86.5, 86.6, 86.7, 86.8, 86.9, 87.0, 87.1, 87.2, 87.3, 87.4, 87.5, 87.6, 87.7, 87.8, 87.9, 88.0, 88.1, 88.2, 88.3, 88.4, 88.5, 88.6, 88.7, 88.8, 88.9, 89.0, 89.1, 89.2, 89.3, 89.4, 89.5, 89.6, 89.7, 89.8, 89.9, 90.0, 90.1, 90.2, 90.3, 90.4, 90.5, 90.6, 90.7, 90.8, 90.9, 91.0, 91.1, 91.2, 91.3, 91.4, 91.5, 91.6, 91.7, 91.8, 91.9, 92.0, 92.1, 92.2, 92.3, 92.4, 92.5, 92.6, 92.7, 92.8, 92.9, 93.0, 93.1, 93.2, 93.3, 93.4, 93.5, 93.6, 93.7, 93.8, 93.9, 94.0, 94.1, 94.2, 94.3, 94.4, 94.5, 94.6, 94.7, 94.8, 94.9, 95.0, 95.1, 95.2, 95.3, 95.4, 95.5, 95.6, 95.7, 95.8, 95.9, 96.0, 96.1, 96.2, 96.3, 96.4, 96.5, 96.6, 96.7, 96.8, 96.9, 97.0, 97.1, 97.2, 97.3, 97.4, 97.5, 97.6, 97.7, 97.8, 97.9, 98.0, 98.1, 98.2, 98.3, 98.4, 98.5, 98.6, 98.7, 98.8, 98.9, 99.0, 99.1, 99.2, 99.3, 99.4, 99.5, 99.6, 99.7, 99.8, 99.9, 100.0, 100.1, 100.2, 100.3, 100.4, 100.5, 100.6, 100.7, 100.8, 100.9, 101.0, 101.1, 101.2, 101.3, 101.4, 101.5, 101.6, 101.7, 101.8, 101.9, 102.0, 102.1, 102.2, 102.3, 102.4, 102.5, 102.6, 102.7, 102.8, 102.9, 103.0, 103.1, 103.2, 103.3, 103.4, 103.5, 103.6, 103.7, 103.8, 103.9, 104.0, 104.1, 104.2, 104.3, 104.4, 104.5, 104.6, 104.7, 104.8, 104.9, 105.0, 105.1, 105.2, 105.3, 105.4, 105.5, 105.6, 105.7, 105.8, 105.9, 106.0, 106.1, 106.2, 106.3, 106.4, 106.5, 106.6, 106.7, 106.8, 106.9, 107.0, 107.1, 107.2, 107.3, 107.4, 107.5, 107.6, 107.7, 107.8, 107.9, 108.0, 108.1, 108.2, 108.3, 108.4, 108.5, 108.6, 108.7, 108.8, 108.9, 109.0, 109.1, 109.2, 109.3, 109.4, 109.5, 109.6, 109.7, 109.8, 109.9, 110.0, 110.1, 110.2, 110.3, 110.4, 110.5, 110.6, 110.7, 110.8, 110.9, 111.0, 111.1, 111.2, 111.3, 111.4, 111.5, 111.6, 111.7, 111.8, 111.9, 112.0, 112.1, 112.2, 112.3, 112.4, 112.5, 112.6, 112.7, 112.8, 112.9, 113.0, 113.1, 113.2, 113.3, 113.4, 113.5, 113.6, 113.7, 113.8, 113.9, 114.0

Reviewed

Fears

It's official. The best Doom clone has finally arrived on the Amiga after months of speculation



Previews

Pole Position

We preview Ascon's Pole Position to see if it will provide Kellion Software's Leading Lap with a tough contest



Team

Another football game appears on the Amiga thanks to Impact Software, and surprisingly, this one isn't management!



Cricket '95

The sequel to Graham Gooch's World Class Cricket steps up to the crease and asks for middle order courtesy of Audiogenic



Feature:

New world wonders

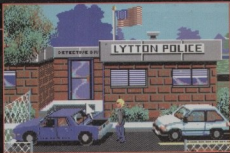
An interview with Binary Emotions - the team behind the Speris Legacy



Cheat Mode

Police Quest 2

If you're having trouble with Police Quest 2, never fear because help is at hand. We provide you with the complete solution



By Tina Hackett

Gloom boom

Following hot on the heels of the success of Black Magic's Gloom, further titles are planned through publishers Guildhall. Gloom certainly impressed when it was released a few months ago and even the cynics that said Doom couldn't be done on the Amiga had a rethink.

So fans will be pleased to hear that Gloom Deluxe is set for release at the end of September, will have enhanced graphics, and will be able to run on any Amiga with 2Mb RAM and an accelerator.

And for existing Gloom owners a Data Disk will be available with new levels and enhanced graphics. It will be priced at £14.99. Gloom 2 (working title) is also in progress for the CD32 and using the original Gloom engine it will have new levels and superior graphics.

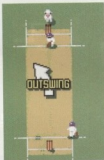


Bundle of joy

It's cricket, cricket, cricket at the moment, what with all the computer games hitting the shelves and the world cup imminent, and to make the most of all this interest Grandslam, Leisuresoft and Tecnoplus have set up a special promotion.

Grandslam's ITS Cricket will be bundled with a Tecnoplus Amiga mouse and can be found in Virgin Megastores, while Beatties will be selling the game with a Tecnoplus Amiga pad. The packs are likely to retail at the bargain price of £23.99.

Grandslam's Sales and Marketing Manager, Chris Warrender commented: "This promotion demonstrates the commitment of Grandslam, Leisuresoft and Tecnoplus to the support and promotion of the Amiga platform prior to new machines appearing on the retail shelves."



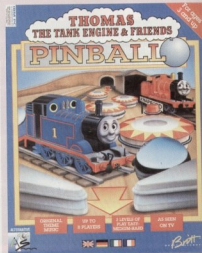
ITS Cricket has been bundled with Tecnoplus peripherals for a bargain price



Alternative pinball

Many moons ago we reported on a new pinball game aimed at the younger end of the market. Called Thomas the Tank Engine's Pinball it's based around the popular children's TV series. The latest news from publishers Alternative Software is that it is ready to roll at the end of this month and features include a definable level of difficulty, four tables and nine balls, making it ideal for younger players.

The RRP has been set at £19.99 for both CD32 and A1200. This game is the next in the series of Thomas games from Alternative which include Thomas the Tank Engine and Friends, Thomas - the Race and Thomas the Tank Engine Collection.



Thomas the Tank Engine is geared at the younger end of the market

Flights of fancy



The games developer is hoping to set it in a futuristic scenario

This month's mail contained a new flight sim from a guy called Stephen Birch. I say 'flight sim' but as yet it's not a full game. Stephen is currently looking to find publishers for it and so far Simon Armstrong from respected developers Acid Software has shown an interest, although nothing has been finalised.

Stephen plans to use his game engine in a futuristic Mad-Max-style scenario which he believes will allow for some interesting landscapes and planes. He also wants to keep the game based mainly around dogfights as this will maximise the split screen element and a four-player mode will be incorporated via a serial link.

He comments: "I have thought about texture mapping, but the engine is heavily optimised round the Amiga's bitplane system for speed, and I think more complex polygons for high spec Amigas would be a more cunning route to take."

The game is looking rather smooth at the moment and promises to be quite impressive, especially as Stephen is looking to make the game compatible with Escom's Virtual I-Glasses. Stephen can be contacted at steveb@mistral.co.uk



Stephen is hoping that the game will support Virtual I-Glasses

Future releases

Despite the fact that this issue is bereft of any reviews there are still a fair amount of games promised for the next few months. We give you the lowdown:

Center Court - Guildhall

Acid Software, makers of the smash hit Skidmarks, are currently busy at work on their tennis game, Center Court. At the moment a deal is being tied up with tennis star, Andre Agassi to promote the game.

Tracksuit Manager 2 - Alternative Software

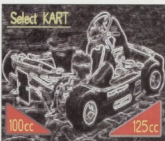
A football management sim that could possibly rival Championship Manager 2. We wait with baited breath.

Championship Manager 2 - Domark

The game all football fans have been waiting for. This stats-based management sim brought new depths of realism to the game and provided the player with the ultimate authentic game.

Virtual Karting - OTM

A slightly different approach to the usual racer, this game centres around the strange pastime of go-kart racing.



Citadel Black - Legend

Another in the long-line of first person perspective shoot-'em-ups - namely Doom clones. This is from polish team Arrakis Software and looks gory to say the least.



Pole Position - Ascon

An original addition to the racing genre, this game revolves around the management angle rather than the usual racing driver aspect.



Dungeon Master 2 - Interplay

This RPG is the long-awaited sequel to Dungeon Master believe it or not.

Speris Legacy

Binary Emotion's Zelda-esque game hits the Amiga.



Legends

Krisalis' Zelda-esque game hits the Amiga.

Worms

Multi-format title Worms is set for release this Autumn. This is a type of Scorch'd Tanks-style of strategy that is brought bang up to date with worms, and should be a fun light-hearted game for a change.



Alien Breed 3D

Alien Breed has had phenomenal success among Amiga owners and this time Team 17 have used a 3D perspective rather than the usual overhead. However, last time there wasn't all that much competition for that style, so can their successor really cut the mustard against all the current Doom clones?

hints & tips

To complete Police Quest 2, a number of special commands must be entered for you to proceed to the next part. These commands must be linguistically accurate. Here they are:

Get keys from ignition, open the glove box, get card, look behind card, (write down the combination), get out of car, go to front door, unlock the door.

Go to counter (on the far right), unlock bin, get kit, and then proceed to locker room (2nd from right). Walk to your locker (it's the first on the left) open locker, (enter numbers), get ammo, get gun, get holster, get cuffs.

Go to homicide office (2nd door from the left), sit at your desk, (empty chair), unlock drawer, open drawer, read note, get wallet, look inside wallet, close drawer, look in message basket, get up, walk to captain's desk, look at papers on desk (write down passwords), walk to key board, look at board, get keys, open

Although having been around for almost six years, Police Quest 2 is still one of the most taxing adventures of today



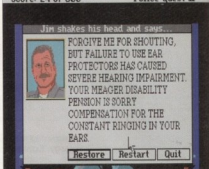
Your own personal car is located on the right, your 'business' car is the blue one



Open the cabinet to find the Bains mugshot. It's in the top drawer

Score: 24 of 300

Police Quest II



I have a feeling that all this means I'm now deaf

cabinet, (bottom of the screen) get Bain's file, get photo.

Go to shooting gallery (past the counter), get ear protectors from the guy, load gun, raise gun, fire one clip, lower gun, press view, look at target, replace target, press back, adjust sights, (repeat process - returning for more clips if needed, until sights are adjusted correctly), get out of booth, return ear protectors.

Walk to blue car, unlock door, walk to trunk of car, open trunk, put kit in trunk, close trunk, open car door, drive to jail.

Open locker, put gun in locker, close locker, press buzzer, show ID, get Bain's file, take Bains' photo, open locker, get gun, walk to car, open door, go to oak street mall. Walk to blue sports

Day 2

Get keys from ignition, go to your office, walk to key board, get keys, get in car. Drive to West Rose, open trunk, get kit, walk up to other trunk, take picture of body, get blood sample, take the body, go to your car, put kit in trunk, close trunk.

Drive to Marie's place, go inside, look in the ashtray, read piece of paper, drive to office, submit evidence, walk up to computer, look at computer, press on, (for homicide type...) Ice-cream, look at Bains', (for personnel type...) pistachio, (for vice type...) Miami, drive to inn, walk up to manager, show ID, show Bains' photo, go to your car, call dispatch, get warrant, show manager warrant, get room key, walk up to red double doors, (solve game and then stay on the right side of the red door), open door, go inside, open drawer, get envelope, (under the lamp), read letter, go to bathroom, pick up card in sink, read card (write down number), go to your car, open trunk and get kit, go inside room, take blood sample on floor, return key to manager.

Drive to office, submit evidence, sit at your chair, call Colby, tell him about Bains, go to



Score: 19 of 300 Police Quest II
Don't forget to take your keys out of the ignition or you won't be able to unlock the door



Score: 30 of 300 Police Quest II
Be prepared before entering on the left. Load and raise your weapon

car, open passenger door, open glove box, get holster, get ammo, talk to lady, walk to your car.

Drive to cotton cove, talk to jogger, ask her where, load gun, draw gun, walk to left (save game), fire at Bains (when he appears behind the bush), walk back to your car, get kit from trunk, look for blood, open kit, get blood sample, make cast of footprint, go east, show diving certificate.

Get in van, pick up mask, belt, fins, vest, and tank 1, get out, dive down, look, (for golden thing in river floor), get object, swim west, look, (for metal spoon), get spoon, swim up, go west, open kit, take picture of body, go back to your car.

Drive to airport, walk to the black car, go north, press the button before crossing street, cross street, buy a rose, go inside the airport, walk up to the woman in ticket counter, show her ID, show Bains' photo, go east, walk up to lady on rental car counter, show her ID, show Bains' photo, get out of airport, press button, cross street, walk to your car.

Drive to police station, submit evidence, go to your desk, sit, call 411, ask for Marie Wilkan's

number, call Marie, look in message basket, drive to Arnie, go inside, talk to Marie, order the lobster, give Marie rose, kiss Marie, eat, pay waiter.

Police Quest 2

By Andy Maddock

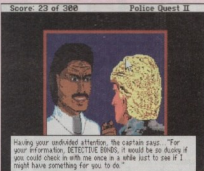
For all you budding Bob Cryer's out there who are struggling with Sierra's classic sequel, here's the complete solution

shooting gallery, practice shooting until sights are adjusted properly, drive to airport, go inside airport, look at screen (until Steelfton flights show up), buy ticket to Steelfton from male agent, show ID, ask for phone, call 411, ask for Steelfton PD, tell them about Bains.

Make sure you got your tickets, go west, go up escalator, walk up to officer, show ID, go through defector, board plane, sit beside Keith, fasten seat belt, ask for water, relax until terrorists appear (save game), unfasten belt, load gun, get up, draw gun, fire at terrorist (only after stewardess is on the floor), fire at second terrorist, walk up to masked terrorist, search pockets, walk to bathroom at the back, open dispenser, cut yellow, cut blue, cut purple, connect yellow, cut white, cut yellow, go back to seat, relax until arrival at steelfton.

Walk up to lieutenant's office, get radios, exit to park, go north, go any direction, call Keith on radio, talk to mugger, read rights, go east until you see manhole cover on ground, open cover, go down, (save game), go east, turn right and walk fast to next screen, go west, open red cabinet, pick up gas mask, go east, turn right,

wear mask, go across, go straight on, go west, draw gun, open door, calm Marie, untie Marie, (save game) hide behind pipe on your left, wait for Bains to fire first, fire at Bains until he drops dead. Congratulations, you've finally completed Police Quest 2!



Score: 23 of 300 Police Quest II
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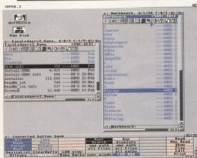
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preview

‘rather than racing the car, you play **manager** and must lead your Formula One team to **success**,

Ascon have made a real name for themselves with Amiga owners due to the success of their On the Ball football management games. On the Ball (League and World Cup Edition) provided a pleasant alternative to the Stats-based Championship Manager and Premier Manager, and for those who wanted a more picture-oriented game, this went down a storm.

And now Ascon are back, but with a change in direction. Keeping sports management as their genre, they have swapped from football to the fast paced world of Formula One Racing. This promises to bring an unusual angle to the usual racing games in that rather than racing the car, you play manager and must lead your Formula One team to success.

Promising immense detail and realism, there will be many aspects to consider as manager, from keeping team morale high to the technical details of the race. Ascon also concentrate on bringing a human element to the game as you will have to take into account the fact that each member of your team has different personality traits. Each driver has 30 different values which make up their character, with opposing teams calculated in the same way. Other employees in your team have a stress level and just like in real life, some will be able to work under stress and some will simply crack under the pressure.

In your managerial role you will have to deal with money matters such as taking out loans and making investments. You will also have to negotiate contracts and organise spon-

sorship deals.

Also needed is a head for technology for things such as purchasing and developing foreign technologies.

You take control of the construction of cars and can test prototypes using a wind tunnel simulation or on the tracks. When you need spares, you can either buy them or research and



As manager you will need to consider all technical aspects of the car

Pole Position

Previewed by Tina Hackett



Different camera angles will allow you to check the progress of your driver

develop your own. When it comes down to the actual race day, you will be in the pits during the warm-up, qualifications and the race itself. You are linked to the driver via a headset and can give him instructions during the race. TV cameras are placed around the circuit and you can switch between cameras to get your required view of the race.

The media will also take a keen interest in the team and you'll have to use your skills to deal with them, plus brief the drivers well so they won't give anything away to the opposition.



TV-style coverage of the races will provide realism

Final word

This is only a brief glimpse of what you can expect from the full game. As you can see it goes in to fine detail and all the aspects of Formula One racing will be more than covered. Graphics promise to be of a high standard and using Silicon Graphics, they aim to create a realistic, TV-style coverage of each race. Expect a full review soon.



Pole Position promises immense detail

You will be able to keep in radio contact with your driver during the race

Win a CD32



No Doom, but plenty of Gloom

Among the many Doom-type games coming your way is the excellent Gloom by Black Magic Software. Reviewed a couple of months ago it earned a very respectable score and was described as 'completely packed with smooth graphics, a huge challenge and most of all action and excitement.' So much so that it is still played constantly in the office. Now, courtesy of publishers Guildhall there are three copies of the game to win, plus a top prize of a fantastic CD32.

All you have to do to win is design a monster that would look at home in the game. Pictures can be sketched, painted, photographed (?) or whatever else takes your fancy. Then simply give it a suitable name and send us your entries no later than 1 January 1996. The winner will receive a CD32, with three runner-up prizes of a copy of Gloom.

guildhall
leisure

ENTRY COUPON

Name: _____

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Which version of the game would you require: CD32 or A1200 _____

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Amiga Computing, IDG Media, Media
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preview

‘The game itself includes hoards and hoards of tactics, strategies and general football-like things’

Football games are almost certainly split into two categories. There's the complete statistic buff's dream of a purely text-based affair – like Championship Manager. On the other hand there's the arcade, blistery, sweaty joystick affair – like Sensible Soccer. There's often the occasional mix between the two, although no-one has simultaneously and successfully blended them together.

For instance, no-one has had the courage to release a game which has the playability of Sensi and the depth of Championship Manager. Surely they would combine together well to become the ultimate football manager game? Well... No, I have to apologise for building your hopes up because Alternative Software are releasing another text-based affair – namely Tracksuit Manager 2.

Before I start, I would just like to clear up one thing. What exactly is a tracksuit manager? Obviously, the game is referring to the manager himself – but tracksuit? We've all seen managers of today walk out of the tunnel leading their team out in the latest range of sportswear. Why? I preferred the old Ron Atkinson and Don Revie sheepskin coat approach. It gave the managers so much authority, so why has it been lost?

Anyway, maybe a tracksuit manager is a kit manager who washes and irons all the tracksuits and then decides which one to wear. Now that

FA Premier Form		PREV	NEXT	EXIT
		SCORE	PLACE	PTS
01	COVENTRY C	0-1	H	
02	NORWICH C	0-0	H	
03	BLACKBURN R	0-0	H	
04	WIMBLEDON	0-0	H	
05	MAN UTD	0-0	H	
06	NEWCASTLE U	0-0	H	
07	LEEDS UTD	0-0	D	
08	ASTON VILLA	0-0	D	
09	TOTTENHAM H	0-0	D	
10	IPSWICH T	0-0	D	
11	Q.P.R.	0-0	D	
12	EVERTON	1-2	D	
13	MAN CITY	0-0	D	
14	SOUTHAMPTON	1-0	D	
15	CHELSEA	1-0	L	
16	SHEFF WED	0-0	L	
17	ARSENAL	1-0	L	
18	WEST HAM U	0-0	L	
19	LIVERPOOL	0-0	L	

The form table shows exactly how well you are doing home and away. The away hurdle is often the obstacle

Tracksuit Manager 2

By Andy Maddock

would be a game and a half.

Championship Manager 2 should be out now. With this and TM2 both looking so similar, it looks like a huge battle will be taking place. Tracksuit Manager 2 is looking, dare I say it, identical to Championship Manager as the icon system and features are almost too similar. Having said that, Championship Manager's icon-driven game was absolutely superb and there's no reason whatsoever why this shouldn't be carried over or 'copied'. I didn't want to use this word but it was the first one that entered my head when I noticed the playing style screen was identical.

Final word

What makes Tracksuit Manager stand well ahead of the rest? Well the fact that it's got a sponsor – a pretty big one too – namely Fizzy Chewits. The game itself includes hoards and hoards of tactics, strategies and general football-like things, and although other games have done this also, Tracksuit Manager displays the information in a completely user-friendly way.

When you call up a menu, TM2 doesn't dawdle. On a standard 1200 it will appear almost immediately, which leads to calculating results as well.

Add all this up and Tracksuit Manager 2 comes across to me as Championship Manager with excellent graphics and a superbly written interface. Considering the success behind Championship Manager, I think TM2 will speak for itself. But wait, then there's Championship Manager 2.

FA Premier		PREV				NEXT				EXIT				
		PL	H	D	A	PL	H	D	A	PL	H	D	A	T
01	COVENTRY C	1	0	0	0	0	0	0	0	0	0	0	0	0
02	NORWICH C	1	0	0	0	0	0	0	0	0	0	0	0	0
03	BLACKBURN R	1	0	0	0	0	0	0	0	0	0	0	0	0
04	WIMBLEDON	1	0	0	0	0	0	0	0	0	0	0	0	0
05	MAN UTD	1	0	0	0	0	0	0	0	0	0	0	0	0
06	NEWCASTLE U	1	0	0	0	0	0	0	0	0	0	0	0	0
07	LEEDS UTD	1	0	0	0	0	0	0	0	0	0	0	0	0
08	ASTON VILLA	1	0	0	0	0	0	0	0	0	0	0	0	0
09	TOTTENHAM H	1	0	0	0	0	0	0	0	0	0	0	0	0
10	IPSWICH T	1	0	0	0	0	0	0	0	0	0	0	0	0
11	Q.P.R.	1	0	0	0	0	0	0	0	0	0	0	0	0
12	EVERTON	1	0	0	0	0	0	0	0	0	0	0	0	0
13	MAN CITY	1	0	0	0	0	0	0	0	0	0	0	0	0
14	SOUTHAMPTON	1	0	0	0	0	0	0	0	0	0	0	0	0
15	SHEFF WED	1	0	0	0	0	0	0	0	0	0	0	0	0
16	CHELSEA	1	0	0	0	0	0	0	0	0	0	0	0	0
17	C.PALACE	1	0	0	0	0	0	0	0	0	0	0	0	0
18	ARSENAL	1	0	0	0	0	0	0	0	0	0	0	0	0
19	WEST HAM U	1	0	0	0	0	0	0	0	0	0	0	0	0
20	LIVERPOOL	1	0	0	0	0	0	0	0	0	0	0	0	0

13 Aug

13 Aug

After the first week we see Liverpool take a nose dive towards the bottom. A position usually taken by a certain club from Manchester

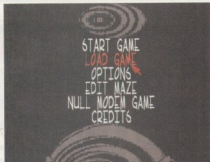


These playing formations are identical to CM2. Well, how many more can you think of?

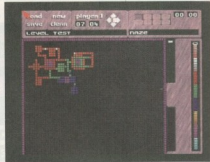


It's Beard! Did you know he has had exactly the same haircut for eighteen years, believe it or not!

review



The title screen just summarises how many different features there are



The edit level facility is fantastic, especially as you don't get one on Doom on the PC

GRAPHICS

93%

SOUND

89%

GAMEPLAY

92%

OVERALL

92%

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DEVELOPER

Manyk Software

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DISKS

2

HD INSTALL

No

SUPPORTS

A1200 only

A miga product plans must be becoming more and more hectic as the months fly by. For instance, Guildhall Leisure released a spectacular 3D Doom-like game only two or three months ago and already they have just finished their latest release. In fact, it's something you'd never expect - another Doom-clone! Not a sequel, but another full blown attempt at recreating Doom on the Amiga. By the looks of this one, they've finally done it.

Months and months of speculation can now seriously be forgotten because even I didn't believe a true Doom version could arrive on the Amiga. We have followed this product since its creation, reporting on each change and receiving copies of the game at various stages. Even then, I was pretty sure this was the one that would put all the others to shame - including Gloom.

There are 30 levels for you to battle through, each one being hugely different, so it never appears the same. A major boon which will please Doom fanatics is the fact you can design your own maze with different textures, doors and aliens, etc. So hopefully, Fears will never run out of lostability.

Frustration

One major gripe that can be frustrating is the fact that if you happen to fall into a pit of lava, your health will run out and you have absolutely no chance of getting out. Some steps would have been nice, especially when you're right near the end.

I can remember getting quite frustrated with Gloom because although it had continues, there was no password or save game feature. Fears includes this so you can breathe a sigh of relief when you finally overcome a tricky part to complete the level. On a save game disk, you can save many games as well as three individually designed mazes.

The Atmospheric sounds are fantastic, truly setting the scene and preparing you for a trip into the unknown. These noises range from the firing of several weapons to the screams of the monsters.

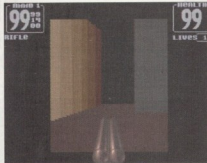
Incidentally, if Fears does have a down point, it's

Reviewed by Andy Maddock

Fears



To reach the extra life, you must risk burning your feet on the boiling lava. It's worth it though



Taking off the graphical details you end up with a bland game - a fast one though



This screen shows your progress as you complete each level, and how far you've got to go



The aliens, as you can see, are really scary

seriously the lack of originality in the monsters. Although they are well drawn, they just don't look scary enough. If you were locked in a dungeon way below the earth's surface and you had to face the Tin Man from Wizard of Oz and The Mekon from Dan Dare, you wouldn't actually be quaking now would you.

There will be a CD32 version of the game which should be hitting the shops about now and will contain all the original features and hopefully be nicer to look at and faster.

When I first played Fears on a standard 1200, it was reasonably jerky which quite obviously reflected on the detailed graphics. Although this seemed a problem, I overcame it by playing and playing away until I was so absorbed I didn't even notice - until I managed to dig out an accelerator from the dusty cupboard. It was a Blizzard Board, and playing Fears with one of these is highly recommended. The speed increases tenfold and therefore produces one of the fastest and most playable games to date.

The Edit Level facility is excellent for designing your own mazes. The actual editor looks a lot like a paint package where you draw on screen a maze of your choice. All the platforms, stairs, walls and aliens are allocated numbers, so it ends up like painting by numbers. You can

define stairs leading up to small rooms just by colouring in some boxes. If reality is so user-friendly you will be designing complex levels within minutes. A good thing I found was the fact you can actually make a virtual world of your own house - or is that too sad?

The options allow you to toggle between difficulty levels, screen size, and all different graphical variations. You can also choose to play the part of the hero as a human or an alien.

The screen resolution that Fears uses is pretty high so you can expect a high amount of detail. However, the resolution obviously isn't quite as high as Doom on the PC. To make up for this, though, the programmers have included dithering. This will blur things a little to get the look of the PC, although it actually just gives you thumping headaches and bad vision.

You can control the character in Fears many ways - either by the mouse, keyboard or joystick. Most people prefer the keyboard because you can reach every key to open doors, side-step, change weapon and run. With the mouse it is nice and comfortable to play, but it's pretty awkward to side-step and avoid bullets. At first you will find it impossible to avoid the shots from the opponents, but careful mastery of the side-step will enable you to dodge around the wall to prevent death.



This tunnel leads down to somewhere. Probably an underground cavern of death, or an ice-cream van



This long run must be negotiated carefully because on each side lies a pit of death



When you run out of ammo, you are graced with a small dagger that does next to nothing

‘The Atmospheric sounds are fantastic, truly setting the scene and preparing you for a trip into the unknown,’

Final word

The response from our survey we printed a while ago was tremendous, and from the results we noticed that many of you did actually own accelerators. If you have, you can't possibly miss out on this. If you haven't, then don't worry, it's only a tad slower.

In short, it is 'packed full of excellent graphics, atmospheric effects and challenging gameplay - there's no doubt that Fears is the best Doom clone ever created.'

preview



All the player's stats are exactly the same. From what I have seen, they have no special attributes whatsoever



Mike Newell gladly puts a foot on the ball ready for kick off. Hang on, where's Chris Sutton?



The crowd will be fully animated in the full version of Team - all kitted out in their clubs' latest sportswear too

One major flaw which they must, at least, change is the difficulty settings ;

Having reviewed and played hundreds and hundreds of football games on many different formats, I seem to be able to differentiate between a future success and a failure. To be honest, a lot of people will write off Team's success already, and quite rightly so, as Sensible World of Soccer has to be the definitive arcade football game - absolutely nothing will beat it on the Amiga, ever. Having said that, surely Impact Software are aware of this, although I can't think of an ulterior motive - somebody, somewhere, must have other ideas.

So, as I've already established the fact that Team is Sensi-like, going off first impressions it seems Team will never attract a capacity crowd like Sensi - even now.

At the moment, Team consists of squads from the International front, such as England, Brazil and Germany, as well as Premiership teams. All the players' names are accurate too, as are hair and skin colour, and you can edit all of these to use in custom cups and leagues. There's no actual season option which, in today's football game market, is nothing short of a necessity.

Team does contain aspects that would have been welcomed with open arms in a game like Sensible Soccer. The collision detection spreads as

Team

By Andy maddock

far as the actual players themselves to the corner flags which enables you to perform those off-the-ball incidents with great effect. There is also a referee present and you can set his temperament to lenient or strict. If you choose strict you will find him dishing out his cards for the smallest thing.

One major flaw which they must, at least, change is the difficulty settings. On my first game I chose Blackburn as my team but I was absolutely thrashed 9-0 by Wimbledon. You're probably thinking the reason behind this that I may have the co-ordination of a one-legged goat. No. It's just too damn hard to get to grips with. When the opposition gets the ball, you don't tend to see the flowing, steady build-up from the back, or even the long-ball straight down the centre of the pitch. All that occurs is the opposition gets the ball and runs - all the way towards your goal and scores!

Final word

After all these gripes I can say that this is a game that could have potential. If some more thought and depth went in to the production, Team could see some of the Christmas crowds. As football games are the biggest sellers on the Amiga, there will be some very, very stiff competition to tackle, namely Championship Manager 2.

Some major tweaking is involved if Impact Software believe their game will guarantee them success. Scheduled for a release in the very near future, they've certainly got a lot to do in a very short time.



The title screen shows three players obviously full of ecstasy after a narrow cup victory

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feature

The scene was a noisy computer trade show. Anyone wanting to see the latest in the computer and video game industry was there, all clamouring round flashing monitor screens and hi-tech stands. The event was a perfect opportunity to meet up with developers and chat about their latest games. One team quite new to all this was Binary Emotions, but keen to promote their forthcoming adventure game, *Speris Legacy*, they were undeterred and agreed to divulge a little about themselves.

First things first. Who are you and what do you do? Andy Jolly: Binary Emotions are a small team of six, and is comprised of 22-year old Clive Minnicin. He's the Coding Director. Then there's Ian Jolly 24, the Music Director who's also responsible for the graphics. I am 21 and am the designer director and team manager. We employ three others who are Phil Boag-Butcher, 22, who deals with Disk Protection, music and additional bug fixing. Ian Ford, 18, musician, and John Snelson, 15, programmer. However, we are also looking to employ talented ray-tracers - so if there's anyone out there who'd like to contact us....



Their shiny, new logo - something Amiga owners will be seeing more of



Binary Emotions next project in the pipelines is *Miniskies Fur Balls*



Speris Legacy is Binary Emotions' first commercial game

New wave

Binary Emotions may not be the most famous name that springs to mind when talking about Amiga developers, but all that is set to change when their forthcoming title is released into an eager Amiga games market. Tina Hackett meets the lads from Wiltshire



What's the inspiration behind *Speris Legacy*?

AJ: We had quite a few ideas before *Speris* like a one or two-player penguin assault course game similar to the old 8-bit title, *Combat School*. There was also *Pilot of Fury* and *Gaze of Malice* - a massive platform arcade adventure game. By then we'd built up some ideas to choose from and some good routines we could use. Basically though, we're great fans of *Zelda* and wanted to bring games we enjoy playing to the Amiga.

How did *Speris* turn from an idea into a fully-fledged game?

AJ: Signing up *Speris* was not as easy as we first thought. We went to Daze Marketing because they offered twice as much royalties compared to the average publisher. They eventually looked at it and told us that they were only interested in strategy games on the PC. We then went to Kompart who suggested we should go to an educational publisher. Anyway, our next port of call was an educational publisher called Tegn 17 (thanks Kompart!). We phoned Martyn Brown who unfortunately was in America. A while later he called back and we uploaded a demo to him and

So you're confident of it's success?

AJ: Yes, because there is nothing on the Amiga that even comes close - our graphics are far more appealing! Even if it doesn't do well, which by all accounts it should, we will be going around and finding out what we should do to improve it.

What about other projects?

AJ: We also provide a service where people can send us their old A500 games and we can make them work on an A1200 for a nominal fee of \$2.99. We have had success with over 40 titles such as *Powemonger*, *Kick Off*, *Speedball 2* and *Heimdall*.

What advice would you give to people wanting to break into the industry?

PBB: Get an A1200 for starters, mess around with *Deluxe Paint*, and find people with the same interests. Most of all keep patient and have the will to go on with it.

AJ: The key is organisation and commitment. It's no good just having talent, you've got to do something about it and try and get your foot in the door.

How do you see the Amiga's position in the market?

AJ: There are a lot of people who underestimate the Amiga. I think it will have a successful

Christmas. Parents, especially, will go for it because you can do more than just play games on it.

What are your favourite games of all time?

U: Mine's got to be the *Chrono Trigger*

AJ: Mario definitely because no one can touch it - there are just so many tiny details that enhance the playability that are usually ignored

CM: I'd say *Monkey Island*

PBB: *Speedball 2* - it's not technically amazing but it has brilliant playability

JS: I really admire *Gloom* because of all the technical specifications and routines - people said *Doom* couldn't be done of the Amiga, and it has

Thank you for your time.

wonders

within the next hour *Speris Legacy* was signed up. However, we are now looking for software houses to publish the game multi-format as Team 17 have only signed up the Amiga rights.

What do you think is going to make *Speris* stand out against its rivals?

AJ: In our game you have more freedom. The puzzles are better too, more indirect and varied. We have better text as well - something along the lines of *Monkey Island*.

How long was the game in development?

U: At first, *Speris* had a side-on view but then it changed to an overhead so I suppose it has taken two years from the very start, but only seven months for us to complete it from the overhead stage.

What did you do before seeking out your fame and fortune as game developers?

AJ: Clive, myself and Phil all completed science courses at Salisbury college and Ian Jolly worked in the Electronics industry. Ian Ford is studying computer science and John Snelson is completing his exams.

Do you have any other games in the pipeline?

AJ: We are still committed to supplying the Amiga with quality games. If we have to sell our products through mail order, we will! We have four releases in the pipeline which include *Minskies Fur Balls* which is quite similar to *Kirby's Avalanche*. We also have *Nemesis Syndrome*, (*Command and Conquer* eat your heart out) only with more stats and less irritating bits. Then we will be releasing a *Doom* perspective racing Kart game and *Speris Legacy 2*.



The Binary Emotions team are looking forward to the success of their forthcoming release

Anyone
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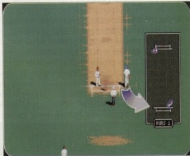
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You could very easily mistake this for GGWCC as there isn't a single noticeable difference - spooky



The fielding has been tweaked enormously. Instead of the computer automatically throwing three miles, you can



You can select which wicket you wish to throw the ball to via the rather unsightly arrow

“The waggling aspect of the joystick is still there to control spin, swing, power and speed, and gladly, the intensity still remains the same,”

Graham Gough's World Class Cricket has been around for many years now - only occasionally did it spawn the odd data disk now and again. Having said that, it still holds the crown for the best cricket game - even now.

It's just about the right time for Audiogenic to release a sequel - not a data disk, but a proper sequel - that has all the old bugs ironed out, refreshed graphics, and a new challenge. Well, it looks like cricket fans from all over the country are in for a treat as Audiogenic step back in to the spotlight and introduce Cricket '95.

Anyone who's played GGWCC will know exactly what was wrong with it. I've heard many grievances about low's, fielding errors and blind wicket keepers, but will Cricket '95 fine tune these problems, wipe them, or even change them so much that a mutated version of GGWCC will undoubtedly emerge?

At first glance the only differences are the slight worn patches around the ground and even on the side of the pitch. Other than these, there's not much change. It's when you finally get in to the actual physical playing of the game that you'll find yourself saying "Ooh, that's better" or even "That's a nice touch."

The first main difference I noticed was that the shots were played differently. In GGWCC while batting, holding down the fire button on the joystick would instantly send your ball over or near the



When batting, holding the fire button for longer will enable more power to be executed into the shot

Cricket '95

By Andy Maddock

boundary, and this obviously became the only way of scoring runs. However, holding down and fire now sends your ball hurtling high in the air with a 50-50 chance of either sending the ball swiftly to the boundary or, more unfortunately, landing comfortably in a fielder's hands.

Another feature that certainly took me a while to get to grips with is the fact that every time you want your batsmen to run, you have to press fire. This comes in handy if you quickly change your mind or want to stop the fielder running again, like they always used to. It also comes in very useful for preventing those unavoidable wickets that the computer often likes to help with.

The waggling aspect of the joystick is still there to control spin, swing, power and speed, and gladly, the intensity still remains the same - although the fast bowlers now seem to inject some impact on the game and bowl faster and far more accurately.

A new feature that will almost certainly please a lot of people is the fact you can now take complete control over all your outfield players via a highlighted star around the feet of the selected fielder. This allows you to decide where to run, the quickest way to get there, and which wicket to throw the ball to!

All these changes gradually become more effective and noticeable as the game goes on. Hopefully, before it's released we'll see even more. Audiogenic's Cricket '95 is undoubtedly shaping up to be a big hit.

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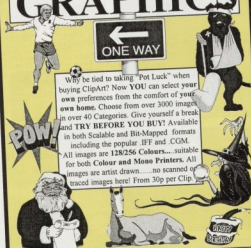
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Amiga Medical Part 11



Problems, problems

What to do if something isn't working correctly and you don't know how to fix it

Hello chaps and chapesses, here we are again with more useful (I hope) advice on how to get the best performance possible from your Workbench. This month we'll delve into problem areas with your software.

When is a picture not a picture? Quite often you might receive a file that is labelled as, say, an IFF picture. However, when you try to load that file into your copy of Deluxe Paint, for instance, DPaint comes up with a message saying there is a problem with the file. Don't despair, at least not yet. There are plenty of things we can do to try to find out whether the file is an IFF picture or not.

On the Amiga, we are fortunate that our programs will try to get around a corrupted file by loading as much as possible before giving an error message. This is something we take for granted, but PC and Mac owners would give their right arms for the ability. Basically, the way most software on the Amiga works is to look at any header information for the file. PC software just tends to examine the file extension and if the file doesn't conform to the expected, just gives an error message. The same applies if there is a problem with the body of the file.

H-HEAD

So our first attempt should be to check the file is actually a picture. One of the easiest ways of doing this is to use an image processing program with a universal loader to load the image. Both ADPro and ImageFX have a wide variety of different file formats that they can load using a universal loader, so try to load it in there.

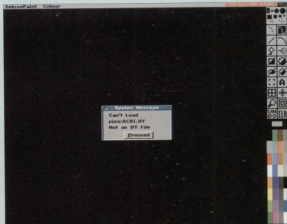
Quite often you will then see ADPro (or ImageFX) then saying: 'Now loading a GIF file' or something similar. If that's all there is to it, then hurray, all you then need to do is save the file as an IFF, converting it down to 256 colours, or HAM if it is a 24-bit format file, first and load it back into DPaint. If, however, neither ADPro nor ImageFX (or whatever image processor you have) will load the file, then perhaps it is not a picture after all.

Our next step is a bit techy, but almost certainly necessary, to determine what our file actually is. We are going to look at the file at bit level, using a hex reader. If you've got DOpus, then you've got a hex reader.

Safe hex

Hexadecimal is otherwise known as base 16 and hex numbers go from zero to 15 in 'normal' or decimal notation. Because we don't have characters for the digits 11-15 we use letters, thus the equivalents of 8 through to 15 in hexadecimal read thus: 8, 9, A, B, C, D, E, F, where F is the same as 15. This means that 20 in hexadecimal doesn't mean 20, it means 32 in normal decimal notation. Confusing huh? See if you can figure out what AC is in normal decimal notation.

(Hexadecimal AC is 172 in decimal)



Opus! Can't load that file into DPaint. I thought it was an IFF file...

DOpus will also display any file it can't find a match for in the defined classes as a hex file, so if you don't have a button defined for hex reading you can always just double-click on the file. This also has the added advantage of allowing DOpus to check

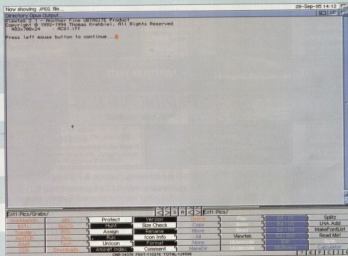
through all its defined classes to see if the file is known.

Anyway, you'll probably find yourself staring at a text display split into two halves. On the left there will be rows and rows of hexadecimal numbers, and on the right

there will be normal ASCII characters. The most important bit is right at the start of the file. If you can see the characters 'GIF8' or 'GIF89a' means the file is a GIF picture file of some description, and a file with the letters 'FORM' at the start of it will be an IFF file of one sort or another - either a picture, sample or text document - and if the file is just an ASCII text document, then the first characters will be the same as the rest of the file, just plain 'oi text'.

There are a couple of programs available for the Amiga to make this sort of job easier, but they both need a certain amount of configuration on the part of the user.

MegaView uses the Whitts library to determine a file's type and then proceeds based on the definition stored. ClassAction [which we put on the CoverDisk a couple of months ago] does pretty much the same thing, only without needing the Whitts library. Check them both out to see which appeals to you more, but don't be afraid of dealing with files in a less automatic fashion.



Double-clicking on a file in Directory Opus often reveals its actual format

Corporate presentation, TV ads, trailers, the flying logo is everywhere. It may not be the pinnacle of 3D artistry but it sure brings in the bucks for both advertisers and animators alike.

In the wacky world of advertising, deadlines are everything. As a consequence, understanding how to create stylish affects with the minimum effort is essential. During this and the next issue of the 3D column I'll be explaining exactly what's required for fast and effective design.

The first and most important rule is to let the camera do the hard work on your behalf. When you watch the average fly-by the various elements appear to zoom in from all manner of angles and directions. In fact, the majority are often sliding into position along simple straight motion paths while the camera creates the illusion of frenetic activity.

In our shameless example of corporate flag waving, the bevel bars appear to fly on-screen from left to right, closely

Seeing is believing

Paul Austin explains the easy way to quality camera angles plus the finer points of the flying logo

followed by the letters IDG and the word media which glide in from right to left.

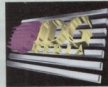
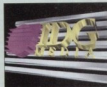
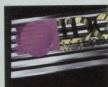
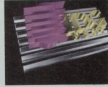
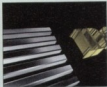
The camera then pans from left to right as the IDG emblem goes flying overhead and stacks into position alongside the lettering. At the end of the

camera pan there's a brief pause prior to the emblem exiting in a reverse stacking motion, providing room for the word media to exit right to left, followed by the IDG lettering exiting left to right.

Amiga 3D Part 7



During all of this the bevel bars exit from front to back in a similar stacking move. The end result is a loop which starts and ends on a black screen. Total running time: nine seconds or 225 frames.



Building blocks

The first step in any commission is to break the animation down on paper – prior to any design work. Think about it in terms of intro, hold and outro – if applicable. From that standpoint you'll have a fairly accurate guide to how long you've got for each element. If you don't have a solid plan beforehand, I guarantee you'll lavish way too much time on certain elements which will eat into the design, adversely affect others, and eventually end in cut corners and a patchy, if not poor, production.

The next step is to design the basic camera motion. Assuming you have the logo and any other elements loaded up, arrange them in their final display position. If you're after a looping anim like this one you have three all-important frames to define.

The first of these is the off-screen key where

nothing is visible. The next is the intro end key, where according to your plan all the elements should be their proper place, and the third is the final camera rest position prior to the outro.

Once you have these three keys, make a preview and check the various camera angles throughout the animation. It may be necessary to add additional keys to keep the action in frame during the sequence. Remember: it's important to keep the number of key frames to an absolute minimum. In this example four were used. Under no circumstances attempt any animation of the logo itself until these basic camera positions are set.

During the first part of the preview the camera may fly through the objects, but bear in mind they're likely to be off-screen at this stage in the finished production.



The flyby

Once happy with the basic camera movement you can turn your attention to the logo. In our example, all the elements moved either left, right forwards or backwards in straight lines. For this kind of movement the basic X,Y,Z views are ideal.

Firstly, create a key frame for all the objects at the intro end frame – as used by the camera. This should be a duplicate of the logo's frame zero position. Now go back to frame zero and use the X,Y and Z views to move all the elements into their off-screen starting positions – creating a key for each – alternating between the views and the camera for fine tuning.

Make a preview and check for any collision damage or glitches. If all's well you can move to the outro camera key frame and add the key frames for the logo objects – these should be the same as the intro end positions. This should lock the logo in position during the main display section of the animation.

Now go to the last frame in the animation and reverse the intro design by moving the elements off-screen, again using the X, Y and Z views in combination with the camera for fine-tuning.

Make a full preview and you should have the basic intro hold and outro. Next time we'll look at adding the finishing touches to the motion paths plus some hints and tips regarding logo design.

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Hidden identity

Assembler Part 16

Datatypes, which were introduced with Workbench 3.0, provide a way for an application's program to both recognise and read/write various data file formats without having to learn all the messy details about how the data in the files is stored. The datatypes library implementation is 'object oriented' and it's based on the BOOPS-related ideas of Inuition.

In short, a datatype can be regarded as a program that hides the file format details. An application can open the datatypes library, pass a filename to it, and ask whether it recognises the format. The datatypes library has a look at the file, consults its list of installed datatypes, and then comes back either with a suitable block of data identifying the file, or a 'not recognised' indicator.

METHODS

Once a file datatype has been identified there are various other datatype library functions that can be used for reading/using the file and identifying the various 'methods' (i.e. associated functions) that can be used with that datatype.

For the purpose of this month's example, however, we are setting our sights just on using the datatypes library to identify the general characteristics of a specified file, and we'll do it using two functions called `ObtainDataTypeA()` and `ReleaseDataType()` [see boxouts for details]. If the call to `ObtainDataTypeA()`

Paul Overaa shows an easy way to identify the general characteristics of a file

```

STRUCTURE DataTypeHeader,0
    ULONG      dtb_Name      Descriptive name of the data type
    ULONG      dtb_BaseName  Base name of the data type
    ULONG      dtb_Pattern    Match pattern for the file name.
    ULONG      dtb_Mask       Comparison mask
    ULONG      dtb_GroupID   Group that the data type is in
    WORD       dtb_ID        ID for data type
    WORD       dtb_MaxLen     Length of comparison mask
    WORD       dtb_Pad       Unused (must be 0)
    ULONG      dtb_Flags     Flags
    ULONG      dtb_Priority   Priority
LABEL DataTypeHeader_SIZEOF

```

Figure 1

is successful, a pointer to a `Datatype` structure will be obtained and the `dtb_Header` field of this structure points to a block of information containing these fields shown in figure 1.

All I'll be doing is printing the `dtb_Name` field to provide a general description of the datatype. This may seem a relatively simple task but there are still quite a number of operations which need to be performed. I've marked each of the main steps taken by the program in this month's source code and many operations, opening libraries, printing test messages using the `WRITEIOS` macro and the `amiga.lib` `printf()` function etc., will be familiar from previous instalments. There are, however, one or two other areas of the code that do need some explanation.

Collecting the command line argument

When a program is started via the Shell register, `a0` will be pointing to the start of the command line arguments and `d0` will be holding the associated character count. The example program, `dec_test`, will expect a filename to be provided so it needs this sort of usage template... `dec_test somefilename`. What is needed then is a loop to copy the filename argument, and for safety (in case a user wrongly provides more than one argument) I'm using the following loop that copies the argument to a buffer but exits immediately if a space separator is found (since this would indicate that two or more arguments were provided):

```

getarg1 lea      filename,a1
        subq.l   #1,d0      needed because loop goes to -1
copy     movb.b   (a0),(a1)+
        cmpl.b   #SPACE,(a0)+
        dbra     d0,copy
        subq.l   #1,a1
        movb.b   #NULL,(a1) end terminal null

```

Locking and identifying files

```

dt_open  move.l   #filename,d1
        move.l   #ACCESS_READ,d2
        CALLSYS  Lock,_DDBase
        move.l   d0,lock
        beq      no_lock

        moveq    #DTST_FILE,d0
        move.l   lock,d0
        move.l   #NULL,a1 no attributes
        CALLSYS  ObtainDataTypeA,_DataTypeBase
        move.l   d0,datatype_p
        beq.s    no_dt      was it OK?

dt_found move.l   d0,a0

        move.l   dtb_Header(a0),a0
        move.l   (a0),_copy first field is

datatype_description
        pea      _format
        jsr      _printf
        addq.l   #8,a0      adjust stack to
remove arguments

```

Listing 1: Part of the datatype identification code

In order to use the `ObtainDataTypeA()` function it is necessary to have a lock on the file. This is achieved using the `dos Lock()` function and it is important that a shareable lock (i.e. an `ACCESS_READ` lock) is asked for because the datatypes library will subsequently also need to be able to read from the file.

Once the lock is available a call to `ObtainDataTypeA()` can be made and the datatype header structure address obtained from the returned datatype pointer. The contents of the first longword of the header structure can be used as part of a `printf()` call to output the datatype's general name.

The code for the above steps is shown in listing 1 but you will, of course, find the complete source on the CoverDisk. Don't forget, incidentally, that because the example is using the `printf()` function, it will need to be linked with the `amiga.lib` library using this sort of command line:

```
link dec_test.o to dec_test (library amiga.lib)
```

Running the program is easy: Just open a Shell window and type `dec_test` followed by a space and then the path/filename of the file you wish to examine. Try using the example code to identify IFF picture files, sound samples, other text files and so on

but, as you run it, do bear one thing in mind – it's not my code that's doing all the hard identification work, it's the datatypes library!

Function: `ObtainDataTypeA()`
Purpose: To identify the data type of a file

<code>dt = ObtainDataType(type, handle, attributes)</code>	
<code>d0 a0 a1</code>	
Input data...type	for files this should
be <code>DTST_FILE</code>	
handle	for files this should
be a <code>BPTX</code> lock	
attributes	must be NULL at present

Return value: `dt` = pointer to a `Datatype` structure or NULL if routine fails

Function: `ReleaseDataType()`
Purpose: Free a datatype node and all associated memory

<code>ReleaseDataType(dt)</code>	
<code>a0</code>	
Input data... <code>dt</code>	pointer to
<code>Datatype</code> structure	
Return value: none	

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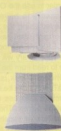
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Keep it natural

Amiga 2D Part 2

In last month's article I defined the different procedures in designing 2D pictures and explained how to build a suitable palette. This month I will be demonstrating how you can create natural backdrops – both cartoon and realistic without spending hours at the keyboard.

As mentioned before, there are two types of natural backdrop and both have good and bad points. The realistic backdrop provides exactly that – realism, but at the price of greatly increased design time. Cartoon is relatively simple, easy on the palette, and takes a fraction of the time required for realistic backdrops.

Although the type of backdrop depends on the style of design, it is probably a wiser decision to opt for the cartoon style until you feel experienced enough to tackle realistic backdrops.

Finally, as the sea and sky are the most dreaded of backdrops, it is these I shall be demonstrating, concentrating on the cartoon style first.

For a reasonable cartoon-style sky you will need, at maximum, four colours from your palette and for the sea, six. The object is not to try and get as much detail in the backdrop as possible but to break it up into blocks of colour that simplify the image while maintaining its identity.

In the sky and sea image shown on this page you can see that although

If natural backdrops fill you with dread, Steve White shows how creating realistic backdrops need not be a nightmare anymore



Although cartoon backdrops use fewer colours, the end result can be as effective as a realistic backdrop

there is little detail in the sky, the overall effect works well. One reason is that the eye concentrates on the foreground – the palm tree – and the backdrop drops out of focus, blurring it as a result. Another is that the backdrop and foreground images have been designed in the same style – that is using fewer colours and reducing the amount of detail as a result.

GRADIENT EFFECTS

The sea is simply a filled area using a gradient fill. Gradient effects are excellent for filling large open areas in a smooth transition of colours. Obviously, as this is a cartoon backdrop, the need for a smooth transition is reduced.

The gradient tool allows you to specify a range of colours, in this case light to dark blue, and alter the dithering between colours. Using the vertical fill option, all that's required is a click of the mouse and you've got a perfectly presentable seascape. The transition is a coarse one but it works.

The final affect in the image is the mountains and hills. An important

technique to use here is colour hazing, if you look out over a scene you should notice that the further away objects are,



It may be considered cheating, but using pre-digitalised images can save a great deal of time and effort

the lighter they appear. This is referred to as depth layering and you can apply this effect to your 2D image.

All you need to do is create a spread of colours (using the Spread tool) – the amount depending on the number of layers – and fill the different layers with the colours in the spread, beginning at the darkest and ending with the lightest. As a final addition, the sea is touched-up with white flecks demonstrating the crests of waves and shoreline. You can also use the blues used for the sea to blend in the white.

Don't go spare

Good advice to any budding artist is to build a comprehensive image bank. Collecting high quality, digitised scenic images available from reputable PD houses, allows you greater flexibility in your image design. If you are creating realistic backdrops you can simply use these digitised images complete or cut particular bits out as brushes and incorporate with your own work.



Gradient fills allow you to fill large areas with a transition of colours with different dithering settings

The real McCoy

Realistic backdrops are the exact opposite of cartoon backdrops in that they require smooth transitions (spreads), lots of colours, and intricate detail. However, most competent paint packages include tools for designing realistic backdrops.

One of the most useful tools for creating a real-world feel to 2D designs is to use pixel blending or anti-aliasing. Anti-aliasing takes the colour you are currently drawing with and blends it with the colour you are painting on. If you had a black background and painted white onto it, the anti-aliasing would automatically add a grey pixel between the black and white.

The result of this is to eliminate jaggies – the blocky effect clearly visible when a low-colour palette is used. If you design your backdrop elements on the spare page you can simply grab them as brushes and paint them onto the main image with the anti-aliasing enabled. If you work from the back to the front (good advice when designing any picture), anti-aliasing will look effective as well as saving hours of painstaking work.

Brilliance, especially, has a wide selection of filling tools which can add a professional look to realistic backdrops with the minimum amount of fuss.

That's all for this month. Next month I will be giving a breakdown explanation of a futuristic city scene I designed, as well as demonstrating other useful paint package tools.



I've been racking my brains over the last couple of months trying to come up with something a little special for this issue. I wanted to provide something that was going to be of real practical value and the topic I've come up with is this – an incredibly easy way of using the ASL file requester from within your AREXX scripts when running an Release 2+ based machines (of course, WorkBench 3 users can also use the AmigaDOS RequestFile command).

What was needed, of course, was a function library that provides an interface between the Exec-style ASL system library and AREXX itself. To be honest I couldn't find one, so the solution was to sit down and write my own. The good news is that, having now completed the necessary coding, I can now give you both the library and an explanation of how it is used.

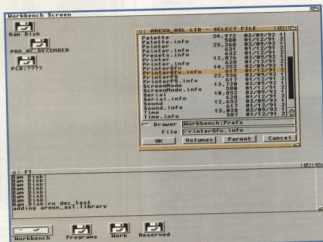
The library is called the 'arexx_asl.library' and like any other Amiga library, it needs to be in your LIBS: directory (normally assigned to the Workbench:libs drawer) in order to be found by the system. The first thing you should do then is copy the library from the cover disk to the appropriate LIBS: drawer. For the function library to be accessible to AREXX, it must also be added to an internally maintained AREXX library list. This can only be done while AREXX is up and running and it needs to be repeated every time AREXX is restarted. The easiest way of doing this is to use the AddLib() function in your scripts. The parameters expected by AddLib() are the library name, a priority value (usually 0), a negative offset value which I'll talk about later, and a version number.

It is normally best to check whether a library is already in the library list or not before attempting to add it and, this being so, the code for adding the library is usually

```
/* dec_test.rexx */

if "Show('L','arexx_asl.library)"
then do
    say 'adding arexx_asl.library'
    call AddLib('arexx_asl.library',0,-30,0)
end
filename=SelectFile()
say filename // you can of course do whatever you want with the filename now! */
```

An AREXX callable ASL file requester



And just to prove it works, here's the AREXX example script bringing up an ASL file requester in all its glory!

written like this:

```
{["Show('L','arexx_asl.library)"
then do
    call AddLib('arexx_asl.library',0,-
30,0)
end
```

and from this point on the library would be

potentially available to the script.

Once the arexx_asl library is in place the ASL requester use issues are very easy indeed to understand. The library provides a single SelectFile() function which allows you to incorporate the asl library file requester using a statement like this:

```
filename=SelectFile()
```

When this line is encountered the asl requester appears and, providing the script user selects the requester's OK gadget, the name of the selected file gets sent back to the ASL requester specified on the left-hand side of the statement (filename\$ in the above case). If, incidentally, the user makes a file selection but then has second thoughts and cancels the requester, the variable being used for the filename will be set to a null string. In other words, only valid selections ever get back to the AREXX script.

And that's basically all there is to it – the underlying library code handles all the complicated stuff completely transparently, so the benefit, as far as the AREXX user is concerned, is that it becomes possible to bring up and use the asl requester via a single line of AREXX code.

What we need now is a runnable example and you can find this in Listing 1. All I'm doing in this script is collecting a filename and printing it back at the Shell window. Needless to say, once you've collected a filename as an AREXX string, you can of course do whatever you want with it!

Listing 1:
A simple
ASL file
requester
script to get
you started

Some additional details

For those of you who are interested in the underlying mechanics of function library use, you may like to know that even though an AREXX function library is essentially a normal Exec-style library, AREXX only ever calls one library function directly. What happens is that when an AREXX function library is opened a standard Exec OpenLibrary() call is performed followed by a call to a so-called 'query' function which provides the interface between AREXX and the real library routines.

During this time, AREXX sends the library the uppercase converted name of the library function specified in the AREXX script so, in the case of the statement... filename\$=SelectFile(), AREXX will have provided the query function with the name SELECTFILE. My library query function simply matches this name to the corresponding 'real' SelectFile() function present in the arexx_asl library.

All such library routines are accessed using negative values known as library vector offsets or LVOs, which effectively represent slots in a table that lists the available functions within the library. Since these vectors are each six bytes long and the library function vectors 4, 12, 18, and 24 are set aside for special system purposes, the first vector available for real library function use is the next slot above 24, namely 30. Designers of most AREXX libraries usually make the 'query' function the first real function of their library, hence its address tends to go into the -30 LVO slot. I've done exactly the same thing so that the magic number -30 in the AddLib() statement is then simply an LVO offset value representing the arexx_asl library's query function.

AREXX



If you've been looking for an easy way of using a file requester in your AREXX scripts then Paul Overaa has the ideal solution

Although the Amiga itself has been in suspended animation since last year, the world of the Amiga has been growing daily, and nowhere more so than on the Internet. On the Web alone there are more Amiga-based sites than there are BBSs, and more information than you could fit in 100 books.

My particular favourites are The Eric Schwartz Web Page, which has been set up and maintained by Mark Rigby-Jones who presently resides at Keeble College, Oxford. The pages contain The Amiga Animation List, which has information on virtually all of Eric Schwartz's animations. For each animation it gives the year of creation, a brief description, system and memory requirements, file sizes, running time, and direct downloading links from three AmigaNet

Amiga Computing Web directory

sites. Blah blah, yada, yada. It's great, and it's all waiting there on the Internet for you to download! Then there's Dark Unicorn Productions, a shareware library and home of the Amiga Web Directory, a great directory of links to Amiga Web.

This is the nearest I can get within the scope of this page to a full-ish directory of all the Amiga

pages that exist at present on the Web. This is as accurate as I could get at the time of going to press, but of course the Web being what it is, some of the sites will have gone off-line and others will have been added. There are also scads of personal home pages which are not really worth a visit. But after all this, here is the definitive list.

COMMS



Phil South
finds out
where all the
Amiga sites
are hanging
out these
days



Dark Unicorn Productions

Amiga Shareware Games, demos, previews, and info.
<http://www.mcd.on.ca/longbow/dup/>

Eric Schwartz

Descriptions and downloading links for Eric Schwartz animations on the Amiga.
<http://info.cs.ac.uk/~kebl0206/eric.html>

Amiga Computing

Ooh look, it's us!
<http://www.demon.co.uk/amigacomp/>

Rainbow of Chaos

An online art gallery featuring works by Amiga artists.
<http://www.indy.net/~geminil/>

Viking Computers - UK

UK-based retail of PC and Amiga hardware, software, and multimedia peripherals. Specialists in support.
<http://www.u-net.com/~viking/home.htm>

Render-Cam Images

Behind-the-scenes tour of a 3D Computer Animation workshop. Tools and sample images are featured. Also, LightWave, the NewTek animation system developed on the Amiga.
<http://www.crl.com/~rc/rci.htm>

Thor

A news/mail/BBS reader for the Amiga.
<http://www.cs.ut.no/~ijelli/thor.html>

Village Tronic's Picasso board

The Picasso is a Zorro II graphics card providing modes up to 1600x1200 and depths up to 24 bits.
<http://www.phone.net/~mvm/picasso/>

Amiga Mosaic

Mosaic client for Amiga platform (developed at sunysb)
<http://insti.physics.sunysb.edu/AMosaic/>

The Amiga bookmark list

ARexxGuide [Amiga Rexx] Copyright © 1993, 1994 Robin Evans

ARexxGuide is a complete ARexx reference with tutorials and dozens of ready-to-use examples.
<http://www.halcyon.com/robin/www/arexxguide/main.html>

The MOD Page

A page about Amiga .MOD music format files.
<http://www.eskimo.com/~future/mods.htm>

Anything Goes BBS

A free access BBS serving the world (via telnet) and Hawaii (via dial-up access). Focuses are: Japanese Animation, Role Playing Games, Amiga computing, and general fun!
<http://www.msi.com/~mooncrow/bbs.html>

Amiga FAQ

Lots of great info especially for beginners, by Ignaz Kellerer.
<http://www.msilink.com/~khisel/AmigaFAQ20.c.html>
Amiga FAQ - In English

Amiga Mailing Lists

Subscribe to newsletters, questions & answers and other specialised info delivered regularly and automatically to you via email
<http://www.iam.com/amiga/lists.html>

HENSA/micros Amiga Section

Another nice Amiga file archive site in the UK.
<http://micros.hensa.ac.uk/micros/amiga-dos.html>

AIP - Amiga IOPS Project

The Amiga IOPS Project is designed to provide a fully Internet-compliant TCP/IP stack for the Amiga. (Good luck, boys!)
http://metro.tumpike.net/~N/Niall7/aip_home.html

ALynx

ASCII-Web-Browser for AmiTCP ported by P Merquardt.
<http://www.lthi-berlin.mpg.de/amiga/alyox.html>

The AMOS Web Site

A source for Amos information and products.
<http://mmm.mbhs.edu/~achurch/amos/>

Christian Bauer

Author of Frodo, a C64 emulator and ShapeShifter, a Mac emulator.
<http://www.uni-mainz.de/~bauec002/>

Andy Dean

Author of ImageStudio and TextureStudio, two well-done image manipulation programs.
<http://www.ee.uci.ac.uk/~adean/>

Michael Fischer

One of the original developers of Amiga Mosaic.
<http://insti.physics.sunysb.edu/~greendog/>

Image Engineer

24-bit image processor and enhancer by Simon Edwards.
<http://minjays.xx.mil.edu.au/~s9407349/>

Netrek

Trog's guide to the multi-player, networked, space combat game.
<http://www.cycor.ca/TCave/AmiTrek.html>

P'Jami

Project aimed at porting the Hot Java Web browser to the Amiga.
<http://metro.tumpike.net/~N/Niall7/hotjava.html>

NewTek

Product information on The Video Toaster, Video Toaster Flyer and LightWave 3D.
<http://www.newtek.com/>

Supra

Makers of modems and Amiga peripherals.
<http://www.supra.com/>

Amiga Report Magazine

The latest news in real-time hypertext or downloadable AmigaGuide docs
<http://www.omnipresence.com/Amiga/News/AR/MainPage.html>

R.A.W.

The leading Amiga scene e-zine. (It says here.)
<http://www.xs4all.nl/~blahh/>

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Okay, last month we taught you how to make a pong-type game. Fun wasn't it? Yes, of course it was, don't give me that sulky "it was all right I s'pose" face. Now this month we'll be tackling another favourite arcade problem. Defender, that old Williams' classic, had a space ship in it which responded to joystick commands and flipped horizontally from left to right and went up and down. Sounds simple right? Not necessarily.

You have the problem of getting Amos to react to joystick commands which, depending on the version of Amos you are running, is either easy or hard. EASY AMOS is lacking some of the quick plug and play-type joystick commands, but it's easy enough to get by that with a bit of judicious twiddling. Flipping the sprite is easy too, but it again depends on your version of Amos.

Okay, let's start by telling you how to do this in regular and professional Amos:

Firstly we credit ourselves, in this case me, and then open a 320 by 256 pixel low resolution screen. Then we turn off the flashing colour, hide the mouse pointer, and turn the flashing cursor off. Finally, we clear the screen. This is a standard program start:

```
Rem *** Defender Ship Movement ***
Rem *** by Phil South ***
Screen Open 0,320,256,16,Lo-res
Flash Off : Hide : Curs Off : Cls 0
```

After the usual credit and screen stuff, we must create our test sprite. We do this by grabbing a simple shape drawn on the screen. The shape I've chosen is one which has a left and right to it - a small rectangle with a point on it. I've also added a little black rectangle to imitate a window in the space ship, as it were. These are simple graphics but they will give you an idea of which direction the sprite is pointing:

```
Polygon 0,0 To 30,0 To 35,5 To 30,10 To 0,10 To 0,0
Ink 0 : Bar 30,1 To 35,4
Get Bob 1,0,0 To 36,11 : Cls 0
Ink 2 : Polygon 0,5 To 5,0 To 35,0 To 35,10 To 5,10 To 0,5
Ink 0 : Bar 0,2 To 5,4
Get Bob 2,0,0 To 36,11 : Cls 0
```

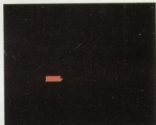
Draw a polygon in the default colour - white - and then draw the bar which is colour 0. black. Then we grab the sprite from the screen, being careful to leave a one pixel gap around the bottom of the sprite, because for some reason Get Bob will always grab one pixel less than you ask it to in each direction. You could, of course, substitute your own sprites drawn in DPaint or something, but make sure they occupy slot 1 and 2 in your sprite bank, with image 1 facing right and image 2 facing left.

Okay, a little bit of stardust is required to make the screen less than a complete blank area of space:

```
For X=0 To 50
  Ink 2 : Plot And(320),And(256)
Next X
```

Now down to the meat and potatoes. Set Double-Buffering to smooth the movement around the screen, then set the initial position of the sprite and the first image you want it to have, so it's 100 pixels across, 100 down, and it

Defend yourself



We've got the starfield and the main bob, now for the background —



The final version in all its glory, looks quite snazzy.

is facing right, or image 1:

```
Double Buffer
X1=100 : Y1=100 : Z=1
Bob 1,X1,Y1,1
```

Now we have the main loop. This reads the joystick position and adjusts the direction of movement and the facing of the ship accordingly:

```
Do
  If Jleft(1) Then X=X-2
  If Jright(1) Then X=X+2
```

In this case, if the joystick is pointing left or right the sprite image is altered to fit the direction, and the X co-ordinate is incremented and decremented by 2. (Note: to make the sprite move faster make it 3.) This moves the sprite back and forth.

```
If Jup(1) Then Y=Y-2
If Jdown(1) Then Y=Y+2
```

Similarly, these next lines check to see if there are any up or down movements of the joystick, and incs or decs the Y co-ordinate. Obviously, if you wanted the image to change when the ship went up and down, in the manner of something like R-Type, then you could do the following:

```
If X1=0 Then X1=0
If X1=275 Then X1=275
If Y1=0 Then Y1=0
If Y1=236 Then Y1=236
```

Then you can check to see if the sprite is reaching the edge of the screen. If it touches the visible edges you make sure the co-ordinate stays at that number, so it doesn't move any further off the screen. (Note: you could also limit the player to a certain area of the screen to make it harder to avoid certain obstacles.)

```
Bob 1,X1,Y1,1
Wait 90:
```

Loop

Finally, you end the main loop by printing the Bob to the screen at the right location after all the calculations, and voilà. There it is, the basic engine for making a space ship scroll around the screen and flip directions. Okay, so now all you have to do is draw the sprites, do a neat bit of dual playfield scrolling for the ground, animate the aliens, and sample some cool sound effects, but other than that you're sorted. (I'm joking of course.) I will be showing you how to do dual playfield scrolling in a month or two. So watch out for that.

The only real change to this program if you are using EASY AMOS is, of course, the joystick movements are not scanned for in the same way. You use the JOY function, with JOY(1)=1 etc. substiting for the JLEFT(1) and JRIGHT(1) commands. The directions are:

```
JOY(1)=1 UP
JOY(1)=2 DOWN
JOY(1)=4 LEFT
JOY(1)=8 RIGHT
```

Apart from that everything is the same.

Write stuff

If you have any other Amos programs or queries about Amos, then please write to the usual address, which is: Phil South, Amos Column, Amiga Computing, Media House, Aylesford Park, Macclesfield SK10 4NP.

Please send routines on an Amiga disk with notes on how the program works on paper, not as text files on the disk. Make the routines short enough to appear in print, i.e. no more than about 30-40 lines of code, and if possible make them use no external graphics, or if they can't be used without them then be sure to provide them on the disk in native IFF format, and the same goes for sound files. Follow these guidelines to the letter and you'll be certain of making me a happy bunny if nothing else.

AMOS

Phil South shows you how to emulate more cheesy old arcade game techniques



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We have seen almost every Amiga CD title in existence and sadly, the general trend appears to be "shovel as much data on as possible and to hell with the quality". The majority of these CDs are also developed as multi platform CDs and while this may advantageous for the company selling them, the end user is faced with a CD containing a high proportion of files that he probably can't even use. So what is left? ...a CD containing loads of badly organised directories filled with low quality (in some cases even pathetic) graphics. Being a little disappointed, the user then looks in the font directories and finds...a massive task on his hands...he has hundreds of fonts that are probably duplicated many times and so way of knowing what he's got! The poor end user, is then literally forced into loading every individual font into an application, just to see what fonts he's actually got! If that wasn't bad enough, he then, quite possibly, discovers that most of the fonts have missing and/or corrupt files!

Some of these so called CD developers even get away with "shoveling" data from their old CDs to new ones and releasing the new CD as "Professional". We could go on and on and on, but why bore you with something you already know? We genuinely feel that the current situation stinks and we at EMC are aiming to set the standard on which all data CDs on the Amiga will be judged. A big claim you say? Well, here's a brief insight to what is included on the EMC CDs and how the data is organised...

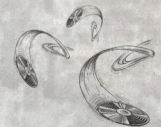
Firstly, these CDs are aimed directly at Amiga users, and are not designed for multi platform computer use. This means that you won't get a CD loaded with PC files that you cannot use! To aid in the rapid location of font, clipart & image data, each of the 3 CDs contain...IFF font preview screens for EVERY font (regardless of it's format) you simply click on the preview icon to SEE the font! The clipart and image directories have been FULLY sorted and ALL directories include full IFF preview thumbnail index screens (and also descriptive filenames) Purchasers of the CDs will also have the option to buy a typeface book, published especially for the EMC CDs, containing font printouts!

The RRP price for each CD is £24.99 + £1.00 UK pp

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The second disk - **EMC PHASE 2** - will be released on...**Monday 6th November 1995**

E.M.COMPUTERGRAPHIC'S PD/Shareware Library CD Collection



EMC-PHASE 2

RELEASE DATE:
6th November 1995

FFONTS Adobe Type1 EMC volumes 17, 27, 29 & 77
CG (with postscript & .alt files) EMC volumes 25, 26, 30, 31 & 82
Colour EMC volumes 48 & 49 and 71 Imagine compatible Type 1 Fonts

CLIPART Fully sorted into sub-directories (number of directories listed in brackets)
IFF Alphabet(4), Borders(16), Buildings(6), Cartoons(17), Computer(7), Education(5), Electric(6), Food(90), History(5), Natural(59), Space&SciFi(3)

IFF Col Fruit, World Maps (of every country on Earth), Ships, Vegetables

GEM Arrows & Stars, Borders, Buildings, Clipart, Office, OtherStuff, Photo, Transport.

IMG Animals, Cartoons, Food, OtherStuff, People, Plants, Sports, TheArts, Transport, Xmas.

IMAGES 16/256 colour and Hi-res interactive formats
America, Babylon5, Birds, BorisV, Britain, Dogs, Egypt, Equest, Famous People, Girls, Kelly, Military, NightBreed, Panoramas, People, SciFi, Terminator, Textures, Star Trek (TNG), V, Water Scenes, Wildcats, World, World People and over 70 megabytes of 736 x 566 Video Backdrops in IFF 16 & 256 colour formats.

EMC-PHASE 1 AVAILABLE NOW £24.99 + pp

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CG (with postscript & .alt files) EMC volumes 8, 9, 10, 23 & 24
Professional Draw EMC volumes 18, 19 & 20
and 52 IFF ClipFonts

CLIPART Fully sorted into sub-directories (number of directories listed in brackets)
IFF Animals(114), Fantasy(27), Music(12), People(73), Religion(12)
Birds, Cars, Cats, Dinosaurs, Dogs, Fish, Horses, Looking,
Music, Planes, Reptiles

EPS Animals, Buildings, Computers, Food, Logos, Office, People,
Transport, USA, World.

IMAGES 16/256 colour and Hi-res interactive formats
Animals, Balloons, Blake7, Cars, Conan, Dragon Lance, Fantasy, Horses,
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All Pagestream3 updates to version 3.0H, Complete Opalvision2.3b update,
19 third party Opal utilities, Typesmith2.5a update and Demo, Pagestream2
Demo, 18 really useful Utilities and heaps of other stuff!

EMC-PHASE 3 RELEASE DATE: 15th January 1996

FFONTS Adobe Type1 EMC volumes 78, 79, 80 & 81
CG (with postscript & .alt files) EMC volumes 83, 84, 85, 86 & 87
Pagestream EMC volume 3, 200 IFF colour ClipFonts
and all our previously unreleased Type1, CG and ColourFonts.

CLIPART Fully sorted into sub-directories (number of directories listed in brackets)
IFF Events (45), Military (26), Misc (33), Sport (37), Transport (35),
Work (37) and World (41)

IFF Col Flowers, Insects, Mammals, Trees, Xmas.

IMAGES 16/256 colour and Hi-res interactive formats
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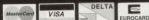
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Bitmapped images are often seen as a poor cousin to structured clip art – you can't scale them up without losing resolution, most images are too low a resolution to look good when printed, and then they look unprofessional. But bitmapped clip art is very versatile. You can edit a bitmapped clip with far greater ease than you could a vector.

The only problem you can have with decent bitmapped clip art is that it is usually several times larger than an Amiga will happily display. This means it can be difficult to see what you are working on. However, both DPaint and PPaint have a 'Show complete image' function so that you can see a version of the clip scaled down to fit onto a Hi-res laced screen which is something of a consolation. Of course, if you are one of those people committed enough to buy a graphics card then you are more likely to be able to fit whatever clip you are editing onto the screen resolutions available to you.

Even so, the amount of trouble you have to go to to edit a piece of mono clip art is minimal. Running DPaint (or PPaint) in only two colours means that even on a low-end machine, the speed at which you can edit the file and scroll around the screen is great. What's more, compositing mono clip art is child's play. Being able to patch together two pieces of unrelated imagery takes little more than a good eye for the consequences and an undo buffer.

STATIONERY ORDER

For a recent wedding I had to create an ensemble of stationery including an order of service, invitations, place cards, letterhead for thank you notes and finally a menu. Since my client (my girlfriend's brother) didn't want to run to four colour printing, I decided to use Paper Direct's overprint papers to provide a nice four colour look, without the expense.

Once the client – his name's Dan, by the way, it's shorter and easier to spell – had agreed on the design of the paper, I set to work designing the layouts of the various items. We used a three fold brochure for the order of service and menu, so, reusing the template I created for the publishing column a few months back, I set out the hymns and

Bitmap fun

PUBLISHING



The original clip...



...look, no glasses!

prayers in the order of service. But there was a lot of blank space on the cover, and there was nothing on page two, the interior flap. I suggested a clip for the cover, but the only one I could find that was vaguely what Dan wanted was a bouquet of flowers. The only fly in the ointment was the brace of glasses standing next to the flowers.

No problem said I, I'll fix that in a jiffy. Taking the clip into DPaint, I swiftly wiped the offending pixels from the image and saved it under a different name (no telling when I might need the original again). This was then placed on the cover between the text about Dan and Mayumi (his blushing bride), and the location and time of the wedding. I checked the coordinates for the

image and added 198mm to the figure for the X coordinate.

The 198mm was because of the fact that the image was on the first third of the sheet of A4 landscape, to be on the first page. The clip for the inside cover needed to be on the third section of the A4 landscape sheet, so I divided the 297mm that is the length of a sheet of A4 by three and multiplied the result by two to give me the offset ($297 \div 3 \times 99 \times 2 = 198$). I added the Welcome message under the flowers to fill out the page a little more – it just looked right.

It was provident that I didn't overwrite the original bouquet image, because when we went to create the menu, it was decided that while the flowers should remain the same on the outside of the three fold brochure, the interior, in a bizarre twist, should have the original image, thus restoring the brace of glasses to the image! Not exactly the nadir of suspense, I know, but it did add a bit of variety to the menu.

Next month, we will take a look at packaging materials, how they are created and why they are important.

It's compo time!

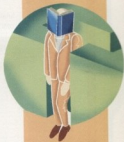
In a departure from the normal programming of the Publishing column, we have a competition for you, dear reader. EM Computergraphic have just launched the first part of their assault on the CD-ROM market with Phase 1, a collection that anyone with even the vaguest interest in DTP or graphics should own, and we have five copies of it to give away. And just in case you already have a copy of Phase 1, you can choose to win Phase 2 or Phase 3 in its place. Here are EMC's questions you might need to refer to back issues of Amiga Computing:

1. What overall rating did the Phase 1 CD get in this month's Laser Guidance?
2. What is the exact release date of the EMC Phase 2 CD-ROM?
3. With regard to EMC's PD/shareware collection, what is the volume number for the FAST Cars floppy disk set?
4. How many CDs are flying around EMC's current ad?
5. In which year did EMC win the Top Typeface Award?

Send your answers into:

Phase 1 Competition, Amiga Computing, Media House, Addington Park, Macclesfield SK10 4NP

The first five correct entries drawn out of the hat will each win a copy of Phase 1, 2 or 3.



After having had a look at structured clip art and fonts, perhaps it's about time Frank Nord checked out bitmapped clip art

Almost everyone involved with Midi sequencing develops their own 'favoured' ways of working. Some things may be forced upon them by the sequencer they use, other ideas are just picked up from experience and personal likes and dislikes.

For example, metronome ticks drive me nuts, so the first thing I tend to do when composing is create a couple of bars of a suitable drum pattern and then paste (duplicate) it throughout the section I'm working on. This provides a working rhythm framework for getting started. It is also useful to lay down a simple chord track to provide some melodic footholds for creating bass lines and so on. The idea with all these types of guide tracks is to keep them simple. Use them just to hang your real ideas on and then, as your work evolves you simply delete the guide tracks as and when they become redundant.

I also tend to work on individual sections – verses, choruses, beginnings, ends and so on in relative isolation, and only having created separate sequences for the various components of the song do I then link them together. The

Sequencing tricks

reason here is flexibility – it is much easier to modify an arrangement, add, duplicate, or remove verses and so on if each song section is available as a separate sequence.

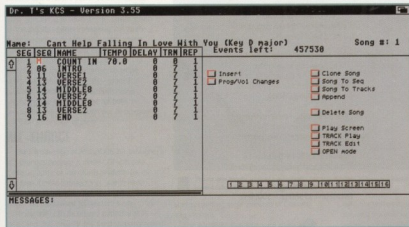
With most sequencers, songs created in this way also tend to end up being physically smaller because only one copy of each section will be stored, no matter how many times it gets played in the final arrangement. Dr Ts KCS, Bars & Pipes, and many other sequencers provide approaches to song construction that allow this section-oriented approach to be used, and

meaningful names, verse, chorus, bridge etc., can always be assigned to the various sequences.

Another thing I've found to be generally useful is to collect any preliminary setting up events into a separate 'control sequence'. You might, for example, create a count-in sequence that plays straight fours on the high-hat and include within that sequence all the program change events that select the voices for the various Midi channels that are in use. That way, all initial Midi equipment setting up commands are easily found and easily changed.



Paul Overaa outlines a few tips and tricks to simplify your Midi sequencing life



All Amiga sequencers allow you to build songs by linking individual sections (verses, choruses etc.) together

File saving

There's a growing trend to save compositions as type 0 or type 1 Midi files since these are more convenient for both moving files to other sequencers and notation packages like Notator-X (which can be used perfectly well with sequencers other than Music X), and for playback purposes if a Midi file player program is being used.

In theory type 2 Midi files would be ideal for saving the individual sections of an arrangement (this in fact is what type 2 Midi files were actually designed for), but of course nobody ever uses them because most sequencer packages do not support their use. It is, therefore, still worth saving additional copies of your songs as ordinary sequencer files because it is then generally easier to make arrangement changes as the various song sections remain available as isolated sequences!

Track control

No matter what sequencer you use, the chances are you'll end up using far more tracks than you really need while you are actually creating a song. You might, for example, experiment with half a dozen ideas for a drum break at the end of a particular section of a song before deciding on the version you like. If you've used any auto-looping facilities provided by the sequencer, you might well find that each loop repeat creates a new track (as it does with Dr Ts KCS).

Sure, you can mute the unwanted ones as a temporary measure, but by the time you've got a couple of dozen unwanted tracks like this floating around, things will be getting a bit messy and this can lead to silly mistakes being made. I find it best to mix down the tracks associated with various Midi channels fairly frequently in order to keep the number of tracks in use to a reasonable level.

With some sequencers you just have to delete unwanted tracks. With others like Dr Ts KCS, however, you can write all tracks to a single sequence, switch to Song mode and place that sequence into a song, and then ask KCS to write the sequence back to the tape deck (using the Song To Tracks option). As it does this, KCS splits the sequence so that all events from each Midi channel go onto a different track and this, of course, effectively combines, and so instantly tidies up, all your previous track layouts.

You can do a similar thing with Sequencer One Plus by saving the composition as a Midi file and then importing it back into the sequencer. Bars & Pipes, of course, provides auto looping facilities which let you record up to eight loop sections that get placed in temporary store. At the end of the loop recording you're able to listen to all the various versions and then select the one you wish to keep – Bars & Pipes then discards all the other versions.

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Fonts and video

PART 1

If you use your Amiga for video titling and graphics you almost certainly need to use fonts on a regular basis to provide the necessary lettering for your work. But were you aware of the huge number of fonts out there that you may not yet have access to because they are in a format which your favourite software cannot read? Wouldn't you like more variation than your current font collection provides – and have fonts in a format which are useful to you? Well, here are a few ideas which might help you do just that.

Firstly, let me tell you a little bit about fonts and the Amiga. In the early days, just about the only fonts an Amiga could use were either single colour bitmapped (i.e. where each letter is composed of fixed patterns of pixels, just like images or brushes) or in formats specific only to particular programs. Time passed, and multi-coloured bitmap fonts, called *ColorFonts* (which could contain anything up to 16 colours), began to appear.

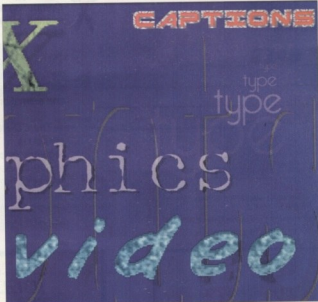
The best known of these are *KaraFonts*,* several of which have been bundled with *DeluxePaint* over the years. *ColorFonts*, like bitmapped fonts, are only produced in specific sizes, and trying to resize them usually results in the 'jaggies', either by making the pixels more evident or by removing pixels which helped smooth the shape of a letter. On the other hand, the great advantage of *ColorFonts* is that new lettering could be designed in all kinds of styles – granite, bevelled, camouflaged and much more, extending the creative scope for both producers and users, though not all programs can take advantage of them.

ALL-CHANGE

The introduction of AmigaDOS 2.1 brought big changes because it made *CGFonts* (aka *Compugraphic* or *Intellifont*) available for the first time. Unlike bitmap fonts, which have only fixed size ranges, *CGFonts* are mathematically-based (or 'vector') fonts, meaning they can be resized smoothly at all times and that virtually any sized lettering can be produced from a single data file, unlike bitmaps, which require separate files for each text size.

Once *CGFonts* had been introduced, programmers started to incorporate their use into software so that programs like *DPaint* and *Scala* (to name but two) could load and display them directly, scaling them on the fly as necessary. Of course, the screen text is still made up of pixels, since that's how computer monitors work, but the font's fidelity was much improved and, for the most part, the worst of the jaggies were consigned to the bit bucket.

But it takes a fast Amiga to successfully manipulate *CGFonts* onto screen in anything approaching real-time, because the fonts have to be scaled and translated as bitmaps on screen. By using the *Fountain* program supplied with *Workbench*, you can skip this step by producing bitmap fonts from *CGFonts* and saving them at the sizes you require. Of course, saving these bitmaps requires disk space and large text sizes need quite a lot of space, so users without hard drives need to carefully consider their font needs before they



There are loads of fonts available for the Amiga, but some need conversion before they can be used for video and graphics

start converting large amounts of *CGFonts* into bitmaps.

The last major font type we'll consider is *Postscript* fonts (sometimes also known as *PSFonts*). These are based on a format popularised by Adobe Systems and hundreds, perhaps thousands, of these fonts are available – many of them as shareware. Like *CGFonts*, *PSFonts* are scalable, though there aren't many Amiga video programs which can use them directly, so they will usually require conversion to either *CGFonts* or Amiga bitmaps.

Many of the *CGFonts* in shareware and commercial collections have been converted from shareware *PSFonts* with *Soft-Logik's* *TypeSmith* or *Alternative Image's* *A2A* programs. Owners of *Gold Disk's* *Professional Page 4 DTP* program can sometimes also use the *FontManager* program to convert *PSFonts* to *CGFonts* and then *Fountain* to produce bitmaps if necessary, so long as either the *.PFM* or *.AFM* data files are also available with the original *PSFont*.

So you can see that a very wide range of fonts are available, in one way or another, for Amiga use, but you should realise that if you are doing video work with your Amiga they will always be displayed on screen as bitmaps

(and transferred as such to video), and will still tend towards jaggedness if the screen resolution is too low. The best resolution to use, if your Amiga has enough memory, is *Hi-Res* interlace at 640 x 512 pixels, or 768 x 580 if you need overscan, because the pixel size is smaller and hence the rough edges are less evident.

Jaggies can be further reduced by either using a program's anti-aliasing functions (if available), a font anti-aliasing utility such as *Zen's AntiA*, or by judiciously adding intermediate pixels at critical points to smooth the edges into the background. Be aware that if you're using a genlock to key graphics over video, the effect of anti-aliasing is unlikely to improve the result because it's very difficult to produce anti-aliasing against a constantly changing background like video, and you'd be better advised to employ distinctive coloured borders for your text to highlight the edges against the video background.

Next month

More on fonts and their use in video. You can e-mail Gary Whiteley at dgarg@cx.compulink.co.uk

Gary Whiteley looks at the types of fonts available to Amiga video producers



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Amiga Computing
NOVEMBER 1995



POWER CD-ROM

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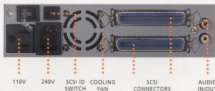
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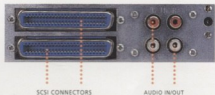
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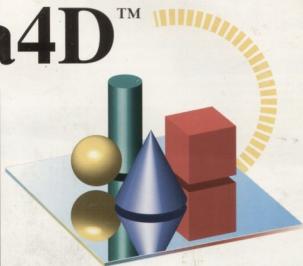
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Tel: +44 (0) 1525 718181
Fax: +44 (0) 1525 713716
hisoft@cix.compulink.co.uk