THE FUTURE OF AMIGA COMPUTING

AMIGACTIVE

ISSUE 6 MARCH 2000 £4.95
SPECIAL PRICE

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It's more than black and white

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ACTIVE INGREDIENTS

Regulars


Amiga Active? Never heard of it!


On the Amiga...? That's Unreal!


New millennium, new look web site.

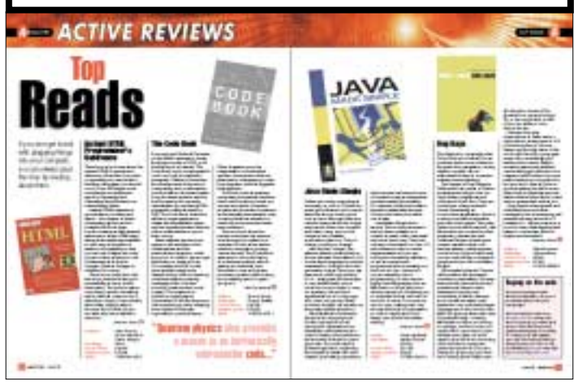

ASK THE GURU

Reviews


CDRs: Burn, baby, burn!


Monitors: Mostly Mitsubishi.


Vulcanology: Don't be scared!


ACTIVE REVIEWS
Top Reads

Features


Neutrino: Small kernel, big features.


Tao: Impressive technology.


Digital Cameras: Cool pixels.


QNX Q&A
PhAB & Groovy Neutrino!

AACD 06

Another month, another CD crammed with top quality software, resources and entertainment.

- **Magazine drawer**
A selection of programs and files to go with various articles in the magazine, from Directory Opus enhancements to digital camera software.

- **AmiBench**
A special version of the online Amiga classified advertising area. Looking for something for your Amiga? Look here.

- **Heretic II preview**
As a special treat, we bring you a QuickTime preview of the soon-to-be-released Heretic II.

- **More Opus**
The full source code to Directory Opus 4, released under GPL, is here. Check out how one of the Amiga's most popular utilities works.

- **Emulators**
We found so many emulators for last month's special, that we split them over two months. This includes the newest version of Basilisk, the Mac emulator from the author of ShapeShifter.

Double-click the Welcome icon and have a good browse around the CD for yourself. Our easy-to-use Search program will help if you're looking for something in particular.


Take off with a digital camera!

AmiBench advertising - here!


We help you to master your Opus.


ACTIVE GAMER
Play Neutrino!

New Hardware On The Cards?

Several key projects aimed at bringing Amiga hardware bang up to date are nearing completion. Prototypes for boards to give Amigas access to USB (Universal Serial Bus) devices, G3 PowerPC processors running at up to 400MHz and an entire new Amiga compatible computer are either running now or will be very shortly.

Eriol

The design of the Eriol USB card being developed for the Amiga by Tigertronics has been progressing steadily. The first test of the control logic to be used on the card should have begun by the time you read this.

However, the project has also run into some delays due to technical problems with implementing the control logic, and it is feared that a redesign may add around £20 to the cost of the final board when it is released. The first prototype board, originally expected around the time you read this, may now be delayed by a few weeks.

hjem.get2net.dk/graff/tigertronics/

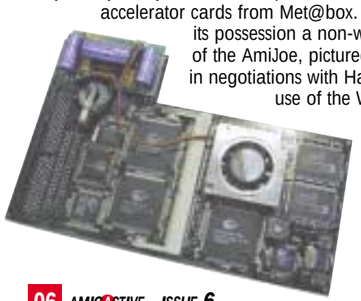
BoXeR

The BoXeR motherboard from Access Innovations has been "substantially updated over the last few months" and a new prototype has gone into production. The addition of a dual USB interface is currently being evaluated, and developer Mick Tinker is expecting "2-3 months of development time from when the board is back in my hands" before a final board is ready for production.

www.micktinker.co.uk/boxer.html

AmiJoe

Very nearly ready to roll off the production line are the AmiJoe G3 accelerator cards from Met@box. Amiga Active currently has in its possession a non-working pre-production version of the AmiJoe, pictured here. Met@box are currently in negotiations with Haage & Partner concerning the use of the WarpUp PowerPC kernel on the new boards. We will be bringing you more news of the AmiJoe as soon as we get it, so keep an eye on our news pages and our web site.



www.amigactive.com

The Show's Going On!

The UK's biggest and best Amiga show is currently in the planning stages for the middle of this year. If all goes well, World of Amiga 2000 will be held in late June in the new location of Birmingham. You can expect to see new Amigas, G3 accelerators (possibly even G4 cards), Neutrino from QNX and much more besides.

The show organisers are currently in the process of locating a new venue in Birmingham in order to meet popular demand for a show outside London. Full details of the show will be available when the venue is finalised. Up-to-date information on the show and ticket booking when all the details are finalised can be found on the World of Amiga web site.

www.worldofamiga.com

AmiWest 2000

Over the pond, it's the third year for the AmiWest 2000 show, which is shaping up for July 29th and 30th in Sacramento, California. The Amiga West Coast Show, to give it its full title, has proved very popular with Amiga enthusiasts in the Western United States, with last year's exhibitors including AntiGravity, GPSoftware, REBOL Technologies and, of course, Amiga themselves.

www.sacc.org/amiwest/

140GB AACDs?

Constellation 3D, an American company specialising in data storage, have announced their goals and objectives for 2000, including production targets for their Fluorescent Multi-layer Disc technology.

FMD ROM is expected to go into production in the first quarter of 2001, and will allow up to 140GB of data to be stored on a specially designed CD. The disc consists of layers of fluorescent material used to hold information, as opposed to a single layer of reflective material used in traditional Compact Discs.

These layers of fluorescent material are transparent to the naked eye, so not only will FMD ROM discs store plenty of information, they'll also look cool. It isn't just about aesthetics, though - the disc's transparent properties allow a single laser beam to read information from multiple layers simultaneously, resulting in fast access to the increased information stored on them.

Aminet on a single disc, anyone?

www.c-3d.net

fxPAINT Demo released

Due to great demand, Innovative have produced a demo version of fxPAINT which we reviewed in issue three. The demo, which offers all of the full version's features except for save and print functions, can now be downloaded from their web site.

PowerPC support in the demo is exactly the same as in the full version, so you should get an idea of fxPAINT's true speed and functionality. We hope to have the demo, and an update on the development of this exciting new software package, next issue.

www.innovative-web.de

Amiga: A Complete Strategy

Amiga's latest executive update (posted on their web site at the beginning of February) outlined that technical training has been started and meetings with future technology partners have commenced. There was little of substance in the executive update, but company president Bill McEwen revealed a couple of interesting snippets we reproduce here.

"In the last two weeks we have announced our new foundation partner, started technical training with our new development team, and had many meetings with future technology partners."

"In the next two weeks we will make another strategic partnership announcement with regards to the new path for Amiga. As with all our announcements, look at it against the whole picture and not in isolation."

www.amiga.com

News Bites

Printing on a Shoestring

Eyetech have just announced a bargain deal on Fujitsu printers. Starting from just £29.95, the printers are supported by Workbench and Turboprint and can be operated from rechargeable (camcorder-style) Ni-Cad batteries.

Using a thermal print head and measuring 300x105x55 mm, the printers come complete with a print ribbon and 100/240v adapter, although a standard three-pin power lead is required (available from Eyetech for £2.50 each). Additional accessories also available from Eyetech include thermal ribbon cartridges (£4.95), 6 volt battery pack (£14.95), thermal fax paper (£4.95 for a 100-foot roll, ideal for draft printouts) and printer cable (£9.95). Eyetech can be contacted on +44 (0)1642 713185.

www.eyetech.co.uk

World Foundry Update

The World Foundry are still working away on their forthcoming releases, Explorer 2260 and Maim & Mangle.

Explorer 2260's game structures are being worked on, whilst Maim & Mangle's new programmer has been testing the game engine and setting up a development environment for both Amiga and Linux versions of real-time strategy game.

Plans for Main & Mangle include a new and improved engine estimated to be 40 percent faster than the current one and porting to the MiniGL API.

www.worldfoundry.com

Retro Games Now Free

A trio of Amiga games from the late eighties and early nineties are now available from the 'net for free. Ziriax, Zarathrusta and Deliverance were all written by Peter Verswyvelen, and should all be available for download from his web site by the time you read this.

users.pandora.be/peter.verswyvelen/

Heretic Fortress from Hyperion?

Amiga games factory Hyperion Software have announced that the Heretic 2 add-on "The Heretic Fortress" will be available at the same time Heretic 2 is released - possibly on the same CD, space permitting. Hyperion's web site has also had a little work done on it to remove Javascript and make it "more Amiga-Friendly."

www.hyperion-software.de

Linux Debates Open Source DOpus

The recent release of v4 of DOpus to the open source community has raised a few eyebrows in the Linux community. The result? Some reminiscences and talk of porting the multi-talented filemanager to Linux.

slashdot.org

New Version of aNapster

Version 0.2 of the Napster MP3 client for the Amiga, the first version of which is reviewed this month in Active Shareware (see page 36) is now available to download from the aNapster homepage. A mailing list for users is also up and running.

www.crosswinds.net/~jsiv/anapster/

Amiga Mozilla resurfaces...

Remember the AMozilla project? Well, we may have only read press releases before, but now, apparently, it's time to "start co-ordinating some actual code development," according to a new Amiga Mozilla web page.

Anyone interested in helping to code an Amiga version of the Mozilla web browser is invited to sign up on the web site so that they can be contacted with a view to writing some code. The web site states that the Mozilla code "is said to be about 3 percent dependent on OS, so it can't be THAT hard to port Mozilla to Amiga."

Here's hoping the Amiga Mozilla project fares slightly better in the 21st century than its predecessor did in the 20th...

home.att.net/~Amiga401/amigamozilla.htm

Amiga Link Directory takes over from AWD

German Amiga news resource amiga-news.de have opened the new Amiga Link Directory (ALD). The new directory's aim is to become THE directory for Amiga pages, taking over where the much loved Amiga Web Directory from CUCUG left off at the beginning of the year.

Amiga software company Innovative (www.innovative-web.de) have developed the required technology for this exciting enterprise.

Entries can be sorted either alphabetically or by category and the entire database of links can be searched for quick results. Unlike the Amiga Web Directory, entries to the ALD can be updated by webmasters via a login system.Further information for each link can be provided, such as a postal adress, phone number and email adress.

Parts of the ALD will also be available on Aminet CDs, providing a link between on- and off-line Amiga users. It is hoped that communication within the Amiga community will improve and that online Amiga companies will be able to reach Amiga users who are yet to get connected to the 'net.

www.amiga-news.de/cgi-bin/anwd-db.pl

Ticker Happy WB!

All hail the Ticker, a small utility for your Workbench that displays the latest headlines from AmigaCentral. If you want to be updated on breaking news as soon as AmigaCentral get hold of it, but you don't want to have to load up your browser and check their web pages every five minutes, the Ticker could just be what you're looking for.

The Amiga version of the Ticker requires 1MB RAM, OS 3.x, and an Internet connection. Taking a leaf from AmigaAmp's book, the Ticker can also be aesthetically altered with the addition of custom "skins."

The Ticker was written by Chris Page of The World Foundry and is available to download from AmigaCentral's web site for free.

www.amigacentral.com/ticker/

Amiga Monopoly

Proving that such things aren't reserved exclusively for the WIntel platform, version 2.0 of HBMonopoly for the Amiga is now available.

HBMonopoly runs either on its own screen or in a window on the Workbench. Plenty of different languages are supported, not just via locale, but in different versions of the game familiar to different parts of the world. Whether you prefer building your property on Boardwalk or Mayfair, HBMonopoly supports up to eight players (either computer controlled or human opponents) and with version 2.0 comes networking capability, enabling Monopoly enthusiasts from all over the world to battle it out over the Internet (or just a local TCP/IP network if your friends are a little closer to you).

HBMonopoly requires OS 3.0, but a graphics card is recommended, whilst networking requires a TCP/IP stack and openurl.library.

hbmonopoly.home.pages.de

It's all a Mirage

If you've ever wondered about the physical limits of CPUs, prepare to wonder some more. IBM scientists have been beavering away on "a fundamentally new way of guiding information through a solid" which could help to shrink computer chips beyond current physical limits, expected to be reached in around ten years.

The technique has been termed "QME" - Quantum Mirage Effect - and essentially involves projecting information from one point in space to another without the existence of a physical connection between the two.

In true mad-scientist style, some bods over at IBM have already created ellipse-shaped rings of cobalt atoms 20 nanometers long, which are used to reflect an atom of magnetic cobalt, projecting its quantum equivalent to another point in space. Changing the original atom would instantaneously change its quantum mirror image - much faster than transmitting an electric current through a physical connection.

Whatever the implications, QNX's Neutrino and Photon Application Builder would be right at home...

www.ibm.com

Destination: Reading

Francis Charig, Tao.

A small horde of Amiga press, user group members and others descended on Reading on the 20th of January to meet with the new owners of the Amiga. Bill McEwen and Fleecy Moss, along with a couple of members of their new development staff, were visiting Reading-based Tao Group, and found the time to say "hello" in a local Indian restaurant.

In attendance were all the Amiga Active regulars, along with Richard Drummond and Ben Vost of Amiga Format, Steve Crietzman of Open Amiga, Mick Tinker of Access Innovation Ltd., several visitors from the SEAL user group and various people from the Reading Amiga Users Group.

Although much of what was said was under NDA (non-disclosure agreement) and cannot be printed at this time, we can report that a good time was had by all. Although the odd jest was made about Amiga's inability to find the pub we were meant to meet at beforehand, the general consensus was that Amiga and Tao are a great bunch of guys who can buy us a curry any time.

Fleecy Moss, Amiga.

Bill McEwen of Amiga comments on Microsoft's chances...

Richard Drummond is surprised by Mick Tinker's engineering skills.

And finally...

Proof that Reading is going Amiga mad. This van was spotted in a Reading street by an anonymous Amiga Active reader. Thanks for the picture, whoever you are!

Editorial

The future is here again

Look at the top of the cover of this magazine and you'll see where we are coming from, or rather where we are going: "The Future of Amiga Computing". When we started Amiga Active, we set ourselves the aim of being the journal of record for the new era of the Amiga. At the start of the Amiga's history, the American magazine Amiga World was the defining publication. I'd say that Amiga Format took the title during the Amiga's Eurocentric pomp, as did CU Amiga during the wilderness years. From the word go, we have aimed to produce THE magazine for the new Amiga age. It was rather unfortunate that at the same time as issue 1 of Amiga Active was going to the press, Gateway decided to put the future on hold.

Much as we all love our current Amigas, we recognise that even a computer as ahead of its time as the Amiga simply cannot stand still forever, and that change must come. We will report on the original Amiga as long as there is anyone who wants to listen to us, but we don't want to be looking back all the time. We want to be excited by cutting edge technologies and world beating software. We want the name "Amiga" to be a name to conjure with once more. We want a boing ball on every computer, and Amiga Active on every newsstand. A modest plan!

Over the coming months you will be seeing some amazing things happening in this market, and it is our aim to bring you these developments in the most in-depth, accurate, informative and enjoyable form available. You'll have seen it in last month's extended news coverage, and it only gets better from here on in. This month you can see that in our short but revealing interview with Dan Dodge of QSSL and our massive interview with Tao Group's Francis Charig and Chris Hinsley. I challenge you to read them and not get almost as excited as we are!

Knowing the score

It's not just the Amiga market that is changing - so are we. Gone are the scores out of 10, to be replaced from this issue with a new 0-4 score system, using what we refer to in the office as AmiYinYangs. We originally chose a score system out of ten to avoid the problematic score inflation the percentage system encourages. 5 or 6 should have been an average score, but many people just subconsciously convert that to 50 or 60%. Alas there is still the notion that anything scoring under 88% isn't worth buying, so manufacturers and publishers don't like it and readers get confused.

To be honest I don't think the score system is terribly important - it's only a quick indicator to help you get a handle on a review. Our new system is simple enough - 4 AmiYinYangs is a great product, 3 is good, 2 is average, 1 is poor, none is spectacularly abysmal. For really good products, we still have the Amiga Active Gold Award, and the Amiga Active Editor's Choice award (which we have yet to award, although WipEout came awfully close).

We hope that this new system will get rid of any confusion once and for all.

PhAB & Groovy Neutrino!

The Operating System that was once, briefly, the next generation Amiga OS is preparing to put in quite an appearance...

A year ago, the future Operating System of the Amiga was going to be Neutrino, from QSSL. The second half of last year saw Neutrino being dropped before Gateway's Amiga fizzled and was sold to Amino. QSSL may have been dropped from Amiga's plans, but the Amiga market has not been dropped from QSSL's.

Phoenix, the Amiga developer's consortium, have been working closely with QSSL, advising on an Amiga flavoured direction for Neutrino. With Neutrino beginning to really shape up we talked to Dan Dodge, CTO of QSSL, about the future of Neutrino.

AA: How is Neutrino progressing? Is the Beta testing going well?

Dan Dodge: Very well. We hope to be feature-complete in the next 4 weeks [beginning of March].

AA: We know you don't want to announce anything firm until it is ready, but can you tell our readers roughly how close we are? Can you indicate what might be available for people to see - or even to buy - at upcoming Amiga shows in the spring, summer and autumn?

Dan Dodge: We hope to have it available to the community by early 2nd quarter. We will start showing it to the community at large once we are a little bit closer to feature-complete.

AA: How valuable are you finding Phoenix to QSSL's efforts? Are you finding useful UI experience coming from Amiga-centric beta testers?

Dan Dodge: This is one area where we have received many ideas and suggestions. One of the primary benefits of Photon is its ability to enable different UI experiences. This is important because not everyone agrees and many have pretty strong feelings on the subject. We will implement a base UI experience, which we hope, will be accepted by most. However, we welcome anyone who wishes to design and implement different interfaces.

"We have already obtained source for Quake 3 Arena and Unreal Tournament. The ports took a few days each."

Below: Watching movies, the Neutrino way.

"We have stayed true to the promise we made and will deliver on that promise."

AA: Can you tell our readers anything about the development initiatives you are pursuing through Phoenix?

Dan Dodge: We recently introduced a bounty program to the group in which we will pay developers a bounty (anything from a T-shirt to $1,000) to port or develop software which we would like to see running on Neutrino and Photon. We take no ownership of what is ported or developed. There is no contract or legal paperwork. The bounty is an encouragement to developers who were going to port the software anyway. Our way of saying "thank you," and helping to focus resources.

AA: Do you have any form of classic Amiga emulation in place or in the works at the moment?

Dan Dodge: We did a quick port of UAE. We will complete that work and return our modifications to the public domain where the community can help us tune and improve it.

AA: Do you think that the latest Amiga buyout will have any impact on your plans? QSSL already use some Tao Group technology with QNX-4. Will this find its way into Neutrino and do you think it will help to provide a basis for co-operative development?

Dan Dodge: It will have no effect. We have stayed true to the promise we made and will deliver on that promise. I respect Bill and wish him the best in his new venture. Short term everyone is pitching us as competitors. We don't feel that way. There is lots of room for innovation and dialogue in this area (the new digital future). At QNX, we have lots of vision and ideas. Our first release will be a balance of vision with business and technical reality.

We really like the Tao Group. They are an extremely innovative company and share our zest for technical excellence. Neutrino is our future, QNX 4 was the near term stepping stone for most of our alliances and OEM's.

AA: I'm sure a lot of our readers will be intrigued by what they can see of PhAB in the screenshot on this page - can you tell us a little about PhAB?

Dan Dodge: PhAB is our visual application building tool. It allows developers to build applications by dropping widgets into windows and attaching callbacks. Entire working application prototypes can be built in a matter of hours without writing a single line of code.

As a testament to its capabilities, all of the applications we ship with Photon have been built with PhAB.

AA: What hardware targets are we going to see initially?

Dan Dodge: We are focusing our resources on supporting a very broad base of X86 PC's for the self-hosted development system. For the other processors we support we rely on the availability of suitable reference platforms. Many of the codecs that everyone wants are currently coded in x86 MMX opcodes. In the near term, this may slow full support for non-x86 processors. Many of these codecs are owned by other companies and must be ported by them, for example RealAudio.

AA: Codecs and proprietary multimedia standards are going to be one of the key areas of concern for Amiga users - we have been largely left out of the running with various standards like Shockwave. This is even an issue in the Linux market, notably with the current furore over DVD movie playback standards. How will Neutrino stand on this front?

Dan Dodge: Expect RealAudio, a DVD player, MacroMedia FLASH, OpenGL, Glide and a port of what we believe to be the best 3D gaming library available today. You will know them when we make the announcement. Keep in mind that our OEM's building the next wave of Internet Appliances need us to support these codecs so they are a priority for us.

AA: Can you reveal anything about application direction for Neutrino yet? Are there going to be a few of the big name POSIX apps available at launch or shortly thereafter? Are there some unique apps in development that you can mention, by type if not by name? How about games?

Dan Dodge: For POSIX apps, if the source runs on Linux and is available then expect it to run on Neutrino with little effort. We have already obtained source for Quake 3 Arena and Unreal Tournament. The ports took a few days each. We have a few special abilities which relate to our built-in networking. Expect Neutrino systems to be very distributed and to support some capabilities which are pretty exciting. The beta sites have not yet seen Neutrino's Qnet. It should be in their hands by the end of February.

AA: Given Neutrino's high level of POSIX compatibility, do you plan to promote it as a commercial, properly supported alternative to Linux?

Dan Dodge: This will be a reality regardless of how we promote it. Our focus will initially be towards the development community. As applications come on line, our user base will certainly expand. We do have a high level of POSIX and Linux compatibility and we will be properly supporting it.

AA: Finally, is there anything you'd like to say to our readers, any misapprehensions that you'd like to clear up?

Dan Dodge: I think it best that we say little and deliver a lot. In the end people know you by what you do.

As Dan Dodge says, QSSL say little. In the Amiga market, where we are so used to the sound of press releases and vapour, QSSL haven't grabbed as many of the headlines as they might. Amiga should be grabbing a fair few headlines over the coming months, but it looks like QSSL are going to be getting their fair share, too.

Andrew Korn

Above left: PhAB, the drag 'n' drop Photon Application Builder.

Above right: Neutrino can display a User Interface appropriate for set-top boxes. It can also do one appropriate for true desktop computers.

Contacts

You can find out more about QSSL and Neutrino by visiting www.qnx.com and www.qnx.com/amiga. If you are interested in reading more about Phoenix, or joining up as a developer, visit the Phoenix web site on www.owlnet.net/phoenix/

Rants and Raves

AROS and Open Amiga

Steve Crietzman steals a page out of Tony Blair's book, and calls for the future of the Amiga to take a Third Way...

Now, time to get straight to the point. Who is Open Amiga? What are we? Why are we here? What are we doing? And will the rest of this article take the form of endless questioning?

Well, no it won't actually, to answer the last question first. The Open Amiga Foundation, Inc. is a non-profit, tax-exempt, limited company - a Foundation. If that sounds like a lot of gobbledegook to you, then all you need to know is that it's legal mumbo jumbo which means we are a legally-recognised charity, which operates in a similar way to a company, except we are non-profit-making. Basically, it gives our activities a professional face that companies and organisations can feel comfortable negotiating with.

Symbiosis

Open Amiga (which is itself the result of a merger between COSA and Free Amiga) are one-half of a symbiosis. AROS form the other half. We are a symbiosis in that we complement each other in skills and resources, completing that which the other lacks.

Like Amiga and Phoenix, we want to some kind of revolution or comeback of the Amiga name. We want to see progress, growth, expansion, but we want to do it all with AmigaOS at its core. That is what distinguishes us from Haage and Partner on one side, and Amiga/Phoenix on the other.

You see, Haage and Partner want to update the OS, and develop a PowerPC port, too. Which is great. Amiga and Phoenix think that such a strategy is too timid. They want to take on as AmigaOS branches out into new, uncharted territory.

We agree with Amiga/Phoenix. Haage and Partner's strategy lacks the kind of ambitious, forward-thinking, "revolutionary" feel to it that Amiga and Phoenix are promoting. AmigaOS for PowerPC is all very well and good, but it falls far short of revolution. Nice try, but no cigar.

We agree with Haage and Partner. We love what Amiga and Phoenix are doing, and we wish them well, but we must protest the fact that AmigaOS isn't there at the heart of their strategies (although we also respect and understand the path both groups have taken, it should be added.)

Open Amiga's mandate is simple. Like Amiga and Phoenix, we understand the power of buzzwords, of revolutionary ideas and features, and the need to penetrate deep into Intel x86 territory. But we also can not forget our roots, and Open Amiga's members cannot emotionally detach themselves from AmigaOS, no matter how hard we try. The Amiga hardware - the platform - yes, but not the OS.

The third way

So, while we wish Phoenix, Amiga and Haage and Partner all the very best, our conscience demands we put forward a third option: an ambitious, progressive plan for AmigaOS. That plan involves going open-source with the operating system: to both unleash the potential of the Amiga development community and also to make a free, portable AmigaOS a reality.

Open Amiga and AROS both feel that a free, portable AmigaOS available for popular hardware platforms, such as Intel x86, has a real chance of being successful, especially if properly marketed.

We ask that Amiga Corporation release the source code to the AmigaOS under a liberal license policy, and transfer the development of the OS into the hands of Open Amiga and our AROS partners, so that we may begin an ambitious strategy to relaunch the AmigaOS, by forcibly entering the Intel x86 market.

There is more to our strategy than can be covered in the short space of this article, but comments, questions, and feedback from interested parties are most welcome. Please feel free to contact us if you have any further questions.

Steve Crietzman
President of Open Amiga

> **"We want to see progress, growth, expansion, but we want to do it all with AmigaOS at its core."**

For more information on Open Amiga, please feel free to 'phone (01778) 393323 (9am-9pm), e-mail us at president@amigakernel.org, or visit our web site at www.openamiga.org. We would like to hear from all interested users, developers, dealers and manufacturers who support our goals, and would like to see growth in the AmigaOS market.

Rants and Raves

Five steps to Amiga

So Bill McEwen and Fleecy Moss have charged in on their white stallions at the last possible moment and saved the damsel Amiga (tied helplessly to the train tracks, of course) from certain death at the hands of yet another incompetent corporate parent.

We now know that the new generation of Amigas will be based upon Tao Group's "Elate" OS foundation. But how will we know that what this company produces is truly worthy of the Amiga name? Here are the questions I will ask to help me answer - for myself, at least - that endlessly debated philosophical issue:

1) Is the New Amiga based upon, tight, efficient, elegant code? Amiga users know that even in this age of "cheap" RAM and obscenely fast CPU's, any OS that needs 64 MB of RAM and a 400 MHz CPU to feel responsive is a bloated mess (and one that will never be suited to inexpensive mobile computing devices).

> **"Windows 95 multitasks 'with all the grace of an elephant riding a unicycle.'"**

2) Does it multitask nimbly? Wired magazine once said that Windows 95 multitasks "with all of the grace of an elephant riding a unicycle." The Amiga must continue to set the standard in this area.

3) Is it an exciting creative tool? Over the years my Amiga has allowed me to easily and cheaply compose music, create animations, build web sites and produce logos and three-dimensional art. The new Amiga must launch the next generation in killer, "I gotta have that" creativity apps.

4) In their day, the A500 and A1200 provided a cheap way to get into Amiga computing. I dream of a really cheap entry level Amiga that will bring powerful and elegant computing to the masses once again, and have the ability to grow and grow with them.

5) Is it accessible to the novice user, yet enticing to the "hacker" type who wants to tinker under the hood? Only the Amiga launched the European demo scene. Only the Amiga has spawned the incredible shareware scene that has kept the platform alive. Enough said!

You will, no doubt, think of things that I've left out of this short piece. Let me close by saying that I wish Fleecy and Bill the best of luck in creating an exciting new chapter in the Amiga saga.

Steve Folberg

What's in a name?

Something that puzzles me about the Amiga market right now is just how important some people think names are. I'm not talking about spending all that much money on the Amiga name. Nor am I talking about the endless debates on how to pronounce Tao (the answer is Dow, like in Dow Jones, by the way - it's Chinese). I'm talking about the notion that it matters what someone is called.

No one is terribly surprised to see one of the new owners of the Amiga going by the name Bill McEwen. It's a perfectly sane and sensible sort of a name. Fleecy Moss, on the other hand? What kind of a name is that?

It's not just Amiga that can boast assumed names. Phoenix's chief co-ordinator and facilitator calls himself greenboy (strictly no capitals), and one of the other founders is called clash. Some people think that names like these in some way call the projects into question - I say, "so what?"

Sometimes people take assumed names because they have something to hide. In these cases, of course, there is nothing to hide (except, perhaps, an embarrassing name!) These people are known to us by the names they have given - and well enough known that their real names would be far better disguises.

The other objection to these assumed names that people put forwards is that people won't take an organisation or company seriously if they are run by a comedy name. There may be some truth in that, but take a look what Tao Group's Francis Charig says about Fleecy, and how he looked through the name, in the interview with Tao in this issue. QSSL seem to have little trouble with the concept of working with greenboy as well.

Let's put it this way: If a company based important financial decisions about partnerships on the names of the people running potential partner organisations rather than making a judgement based on the financial and strategic impact on their company, then you wouldn't want to have any dealings with them anyway.

Andrew Korn

> **"Fleecy Moss? What kind of a name is that?"**

Above: Fleecy Moss being not very fleecy.

The Eternal Tao




The Tao is hidden and nameless,
This is exactly why the Tao is good
at developing and perfecting.
- Lao-Tze, the Tao Te Ching.

Amiga Active talks to the men behind the new Amiga technology...
...when we can get a word in edgeways.

It is pretty clear after the shortest meeting with Chris Hinsley, Tao Group's founder and Director of Technology, and Francis Charig, Chairman and CEO, that they aren't exactly humourless execs. There's a lot of banter, and a lot of self-mocking. After a slightly longer time, something else becomes obvious about them - they are quite a double act. It's a kind of high-tech corporation version of good cop, bad cop.

Francis is well spoken, with an accent straight from academia and a slick marketing man's presentation. Chris is wilder, scruffier, more enthusiastic, altogether the eccentric English inventor. They aren't exactly opposites though, because each contains a little mirror of the other. Francis belies the marketing man image with a regular stream of (often off-colour) jokes. Chris is clearly a man who knows how to put on the metaphorical ponytail and bring out the hard sell. The pair bounce off each other, and interrupt to finish the other's sentences. Opposites working in harmonious balance, yin and yang. No wonder Japanese corporations love them.

Sometimes you can't help but wonder how much of the fast-talking enthusiasm is part of a cleverly engineered marketing image. They reinforce the message by having the voice of business and the voice of vision talking as one, a sucker punch that's undoubtedly impressive. Whether it is or not, there's a palpable enthusiasm and belief about the pair of them.

Tao have done an incredible job of staying quiet - in the small and relatively parochial UK information technology sector, that's quite an achievement. Many people in the industry imagine them as a "garage operation." A visit to their expensive looking offices housing 60 world-class engineers quickly belies that image. Their funding has come from Japan, and it is quite clear that the Japanese are taking them very seriously indeed.

Tao are suddenly making heads turn throughout the industry. What they are talking about is a more fundamental revolution than pretty much anyone else is offering to the computer industry. Anyone who thought that the new Amiga could not hope to match the revolutionary nature of the original Amiga, think again.

If we had printed everything that was said in the interview, this article would be about three times as long. Having said that, there are also things we can't talk about, like the technology demonstrations (all we can say is that we should be very content with the feel of what we are getting, and the Java engine is seriously awesome), and a few things Tao did not want repeated.

What follows are the words of Tao, pure and simple. There was a lot of material that for one reason or another did not make it, but there's enough here to give a very good idea of the Way of Tao...

Chris Hinsley
Tao Group's Founder and Director of Technology.

Francis Charig
Chairman and CEO.

On the relationship between Tao and Amiga. How it all began.

Francis: It's not just a business relationship. This one is turning into a personal relationship too. We're all of a kind. We always say this about Tao - we take our work really, really seriously, but we don't take ourselves too seriously. We try to make sure that everything is fun.

Bill and Fleecy contacted us in the second half of last year. I didn't know them from Adam to be totally honest with you. My involvement in the Amiga in the last few years has been absolutely zip, and in early years was just confined to the family buying an Amiga.

First of all you can't take anyone who's called Fleecy seriously, you get this message saying "Hello, my name is Fleecy", and you think he's barmy. I said to Chris that I had a feeling that there was something about it. Fleecy's whole style, within it there's obviously a man who's got "it." Whatever "it" is. I took a lot of care responding to him. I kept getting follow ups, and I thought "God, this is going on forever." I thought it was worth following up, but it was getting a little frustrating at times.

Then we got Bill on conference call. I wanted Chris in because I wanted his judgement. I had also done some due diligence, just by going to the web and things like that, that showed that Bill and Fleecy were obviously highly respected in the industry. In the conference call it became quite obvious that with Bill, we were dealing with somebody who knew which way was up. And also had more of an English sense of humour than an American one - in other words he had a sense of humour. That meant we felt comfortable from a personal point of view. Chris and I like to build up relationships with people we deal with. We like to deal with people who are good honest people.

I went to people I knew in the States, who had set up a new [venture capital] fund, explained what it was about, got them organised with the Amino people, and financing went through very quickly. Tao can probably be credited with saving the Amiga, from a financing view. We don't have any ownership in them but we are tied at the hip, and you will see that in the announcements that come out between the two companies in the next few months. You go through the companies that are bidding for our time while we are giving priority to Fleecy and Bill, you'd recognise that there is a real high commitment to this whole thing.

"...with Bill, we were dealing with somebody who knew which way was up."

"...most people in the Amiga community, if you present them with a huge great fat cheque, they are not going to walk away..."

On Tao and the Amiga community. What do they want from us?

Francis: This is a chance for us, in a sense, to exploit the community. The fact is that we recognise that they can write all this good content, and if we give them all the tools, they can in turn exploit our technology to their own needs. There is mutual gain; it is a business. The Amiga community people have been around for 20 years in multimedia, and that makes them the most experienced in the industry. Also there are a lot of blue chips in the film industry, the TV industry, the games industry and so on, with a lot of people who are committed. Some of them may have wandered off, but they've temporarily wandered off, and still have that very strong brand loyalty to Amiga, and are still monitoring what is going on very closely.

They are not like the other community, no names mentioned, where it's about making money, pure and simple, about churning out software as quick as you can. There's no pride in what they do; it's about simply making as much money as they can. Now obviously, most people in the Amiga community, if you present them with a huge great fat cheque, they are not going to walk away from it. The people who are actually developing software content out there have a lot of pride. They want to do it right, and that's their commitment to the industry, but ultimately they would like money and they would like exposure to a much broader base of users than they have currently got.

Bill and Fleecy know the Amiga community better than we do, despite Chris' history, and other people at Tao's history - Chris understands the mentality, but he doesn't understand the exact status right now, and he doesn't have all the access and the contacts. These guys are the perfect people to be our pipeline to the community.

Tao, Amiga and the future - extraordinary times.

Francis: If you could see - it's just extraordinary. The last month and a half...

Chris: Mad.

Francis: ...the world has gone mad.

Chris: Completely barmy.

Francis: We are at the centre of almost every major corporation in the technology industry's radar screen. Java has now become a standard for DVB, the digital broadcast standard, it has become a standard for HAVi, it's becoming a standard for.... Everybody suddenly recognises that they need Java. They need a product that is small, they need a product that is fast, they need a product that can actually do multimedia quickly.... Tell me what else there is apart from us? There is nothing even on the horizon apart from ourselves,

Chris: that was obvious going around CES this year. There was absolutely bugger all else there.

Francis: When people say, "Can the Amiga succeed against the market..."

Chris: Of course it can.

Francis: I mean for God's sake, we're going to be... the Amiga is actually...

Chris: ...is going to drag the rest of the world into the 21st century.

Francis: I mean there is going to be a huge number of our customers who are going to say "My God, there's all this content we can suddenly access. There's all the Java content, and there is all the Amiga specific content." We are going to be the most content-rich environment for multimedia that is out there. There are going to be announcements shortly which we and Amiga are going to be making that will underline this perspective. We will get the global community's attention very shortly in terms of development of content around our content engine.

The people of Tao

Francis: The Japanese love it, the Americans find it quite difficult - I'll say "Well, one of the things we've done with Tao is that our big target is to put together an absolutely world class team of people, and as you can see here today, we have failed completely."

We have the most unbelievable calibre of staff at this company. We've got sixty people - this guy (points to framed CPU diagram on the office wall) Masatoshi Shima - good friend of mine - he designed the 4004, invented the MPU, the microprocessor. At the Transistor 50th anniversary award, which Intel sponsored, Ted Hoff was given the award for the inventor of the microprocessor and he (points at diagram) was given the award for inventor of the MPU. He was a bit confused because he always thought they were the same thing.

We've had investors say that they have never come across a company our size with so much talent inside it. Everyone in this company has one or more of three backgrounds. They are either a world class games engineer, and/or they have got a degree - when I say degree most of them have firsts - masters, we've got Rhodes scholars, really the cream.

People say "oh he's got a first, he's unemployable" Not true! If they are that bright then you can train them to think commercially. When I first knew Chris, he'd look at some piece of technology and go (puts on an impressive vocal imitation and starts swearing). Now he can be a very smooth salesman, because he understands what people are looking for.

The third area is people from the blue chips, top people, top engineers we have taken on from companies like Fujitsu, British Telecom and Raycor, who give us general systems integration experience. You can't just have youth in the company, however brilliant it may be because there are process issues that you have to get right.

The robustness of Tao's vision

Francis: We have done something that no other company in history has ever done before. We have started form scratch and we have written a complete top-to-bottom multimedia environment. Nobody's ever done that before. And we've always targeted this industry. People have said, "Oh, you've re-invented yourselves several times"...

Chris: Rubbish.

Francis: Absolute rubbish.

Chris: What we were saying six years ago is exactly the same thing.

Francis: We developed this system for consumer products, for running interactive content. If you can run interactive content on these devices you can run anything. That is the most processor hungry environment you can imagine, and if you can get footprint issues, you can sort it out anywhere.

The Tao is hidden deeply in all things,
It is the treasure of the good.
- Lao-Tze, the Tao Te Ching.

From day one, we targeted Japan, not the States, because we felt the big new market for products like ours were going to be all the consumer electronics companies. Why, if it had been computer oriented, or machine tools, would we be targeting all the consumer electronics companies in Japan?

Climbing mount Tao.

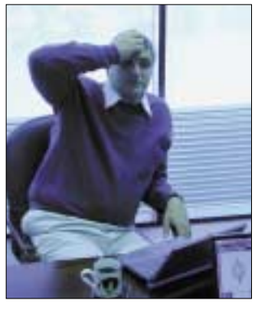
Francis: I once climbed Kilimanjaro - on the last day, you're climbing up sheer scree - two steps forwards and one step back. You go to bed at four in the afternoon, they get you up at midnight. The reason that they take you up at night is that psychologically, if you can see your progress, it kills you.

If you can't see what is going on you carry on bravely forwards. People are saying "Yep, you're almost there Francis, you're almost there" and of course you're nowhere near. Seven hours later, the sun is beginning to rise, and that's about the time you get up to Gilman's point, which for nine months of the year is the highest point you can get to.

All the time you are climbing, people are giving you the false impression that you are nearly at the top. Thank God someone got me up at midnight to climb the Tao mountain. If we had actually seen from the beginning what we were undertaking, I doubt very much that we would have had the stamina to achieve what we have gone through.

"We've had investors say that they have never come across a company our size with so much talent inside it."

Smaller, faster, altogether better.



Francis: We can put a complete RTOS out in the market place, with complete personal Java, and a whole pile of additional capabilities for 2D and so on, all sitting in a footprint of sub 2MB of native code.

Chris: Yeah, not bytecode. Everybody else says they can get it in 8MB, but that's bytecode.

Francis: Not bytecode. Typically there are people out there who say they can get the libraries in two or three megabytes, but they've got a bloat factor

running JITs of 4-6, plus you've got the operating system on top. You end up with a solution which is taking 16MBs when you get to native code size - that's absolutely typical. We are running in 2MB of native. On top of that, we have all sorts of techniques which give us huge advantages in terms of memory efficiency - not just the footprint but the way that we bind the tools - and we've got advantages in terms of general speed, because we run stonkingly fast.

When you start moving towards interactive content then we just kill the competition. We are killing the JITs on the desktop when it comes to interactive content, yet our system was designed for consumer products, so ours was always designed with memory efficiency in mind.

Multiprocessing across networks of dissimilar processors.

Francis: The Elate system has been designed to be object based, to be very fast, very high performance, extremely compact, binary portable and fully deterministic. The modularity and flexibility is obviously very important for the low-end devices. And it's also been designed to be multiprocessing...

Chris: Which will definitely become more relevant, certainly to the Amiga community as they start getting used to the system. The multiprocessing side will become a really big thing for them...

"We are talking about being able to link together thousands of processors of dissimilar types..."

Francis: This isn't traditional multiprocessing. We are talking about being able to link together thousands of processors of dissimilar types and the system just automatically handles the whole lot for you, and the local memory, shared memory, all the different architectures...

Chris: The traditional problem always was that it was just too damned hard to program. Everything had to be statically compiled for a particular machine, with a particular set of processors - it just made the whole idea of making a shrink-wrapped piece of software that could take advantage of parallel processing completely pointless. You just couldn't do it.

Francis: But we can, and we have patents on this technology. Look at the Byte article from '94. We had this ray-tracer, I was running it on my 486...it runs jolly fast, but the really exciting thing was that I then get a board with 8 transputers in and stick that in. I run my system again, I don't even recompile it, and it takes advantage of all the different processors. It works out if there is an advantage doing stuff across a network as well, because sometimes the comms are so slow it's better to stick to a single chip. The ray tracer became that much faster - a linear growth.

Then we get another board, with 4 MIPS processors. 13 processors, 3 different architectures, and without recompiling it again, the program just ran again that much faster. The program didn't have to know any of this - it was handled automatically. Obviously you can't just take a monolithic program and it will magically turn into a parallel program...

Chris: The programmer still has to think! We're not removing that element of it, but making it much, much simpler to put something together.

The two flavours of Elate.

Francis: The processes incorporated in Elate are incorporated into the hosted version as well. The concept we have of a register based virtual processor with translation and the way that we bind individual tools - individual methods in Java language - rather than entire classes, which gives you memory efficiency advantages and performance advantages - that is relevant to both platforms. As is the multiprocessing - you can still use the multiprocessing even when you are sitting on another operating system.

Chris: The applications that are written for the system don't know anything about the host environment, they don't see that they are sitting on top of another operating system. They can do if they want to, we have APIs that allow that to be exposed, on the understanding that if you do that you are making your software non-portable, of course.

Francis: What we have is this intent product which is our whole multimedia applications layer, and the difference is we're not running it on Elate. We'll be calling through the other operating system to control the device drivers, comms stacks or maybe even file systems or whatever, but that's the only difference. There's a certain amount of marketing to be honest - Elate and intent are exactly the same code in reality, but with Elate we have complete control of the

hardware. What we want people to appreciate is that you run our applications layer on all these different Operating Systems - you have intent for Windows, intent for Linux, intent for QNX, intent for Epoc, intent for WinCE and so on.

Just how portable is Java? The attitude of Sun.

Francis: At the moment a lot of the Java libraries are written in C or C++, which means that in reality the applications are portable, but nothing else about the system is...

Chris: Yeah, the actual Java environment itself is not.

Francis: So every Java implementation you have, you have to recompile for each individual platform, this means that...

Chris: And that C-side stuff is all Operating System specific.

Francis: They should know about the seaside, they've come from Bournemouth (general laughter). The point of Java is that it is portable, but you've got these huge codebases to support, which is why most implementations of Java are completely lacking in robustness. We have just one codebase for all of our platforms.

Also the other big problem with Java is that there isn't behavioural consistency between platforms, because there are different libraries for each platform. We have a single set of libraries. We completely re-implemented all the libraries in binary portable assembler, a huge job. But this has meant that we have a completely binary portable Java implementation for all the different platforms, which gives us footprint advantages, it gives us performance advantages, it gives us robustness advantages and it gives us consistency advantages.

Chris: Java still is - rather than "Write once, run anywhere", it is...

When superior students hear of the Tao,
They strive to practice it.
- Lao-Tze, the Tao Te Ching.

Francis: Write once, test everywhere...

Chris: "Write once, test everywhere", that's the situation at the moment. Certainly with the customers we deal with who try to support multiple Java engines, their experience is that they can't just write a piece of code that will run on all platforms, they have to keep tweaking it and messing around with it.

Francis: However I would like to put it on record here - the support we get from Sun is...

Chris: Brilliant.

Francis: Brilliant. And their attitude towards us is brilliant. Some companies have said that they are going to be the next Microsoft, but...

Chris: They couldn't have been more friendly and helpful and co-operative. They've been great, they really have.

Francis: What Sun is trying to do is make sure that there is consistency across the industry. Sometimes they are portrayed as being tyrants because they refuse to open things up which if they did open up...

Chris: Chaos!

Francis: ...would actually mean there would be different versions of Java, and that would remove the entire point of it. In Java you can really concentrate on creativity because you can program five times faster than you can with C. It's more maintainable, it's much faster to generate than C, so why write in C? There are going to be certain instances where you want to write in C or assembler... you might not want to write engines where you need every ounce and every cycle, but for most applications Java is going to be perfect for the Amiga community.

We've got an obligation in the industry to work with Sun and get the consistency, which means that Amiga people can just get on with it - it's about creativity. Whether they are an applications programmer or an artist, they want to be able to create. That's one of the things that I think we can do between ourselves, and Fleecy and Bill, and Sun. Although we don't have to get them intimately involved, because Tao provides the Java side of things, Sun is actually a company that I am expecting to see on our side, and that's good.

"What we want people to appreciate is that you run our applications layer on all these different Operating Systems..."

All those Java engineers who are out there right now saying, "Java is big and slow, I learned it at university and now what do I do with it?" - I'd like to see them come to the Amiga fold and start writing real applications. This is not Francis speaking naively from his office in the UK, I know that we can do it. If you knew what I know, you'd know that we can do it. When I say that, I'm not talking about things that will remain closed for very long.

Transmeta, chips and Tao.

Chris: We have had companies approach us saying that they would like to do the VP processor in silicon, and we keep telling them not to. We've had more than one offer.

Francis: More than one? We've had eight...nine... ten offers?

Chris: Well, it's not two...

Francis: It can't be through hardware - I mean Transmeta say that they give the best MIPS per watt of any company that's out there...

Chris: It might not be as good as an ARM 11.

Francis: ... but it might not in two years time. I can't afford to find myself totally tied into that piece of hardware. If you have an extensible virtual platform like our own, that doesn't matter. Let's say you come to 64 bits at the hardware level, we'll take advantage of that. We've got something that is so truly flexible that we're not tying people in, and that is being recognised.

Putting the right things in the box. Ensuring hardware compatibility across multiple architectures.

Chris: You want people to build machines, sourcing components, putting a box together and selling it like with PC clones but in a much more open way. They don't have to get their CPU from Intel or be on the bad boy's list by getting their processor from AMD. Buy any processor you want, put this stuff on it, stick an Amiga badge on it and sell it as an Amiga machine.

You can write device drivers that are binary portable. We have drivers written on the PC which run unmodified, straight out of the box, on a PowerPC piece of kit. The CPU side is irrelevant, the interrupt structure is irrelevant - the kernel and the VP system virtualise all that.

Fleecy and Bill are intending to do an awful lot of the device driver work.

"We will be making available to companies example source code, full documentation, APIs..."

Chris: It [Transmeta] looks like a very interesting chip, but it's just a chip as far as we are concerned. But all this is missing the point. The consumer electronics companies do not want to be tied to a particular piece of hardware. They've been there, done that with the whole Intel thing and they don't want to be there again. They want to be able to move their software to any hardware they want.

Francis: They want to be able to say to Mr. Arm or Mr. PowerPC, "I can use a PowerPC..."

Chris: "I can use an x86 for this..."

Francis: "So unless you do it for x bucks, I'm going to go somewhere else."

Chris: "So drop your price or I'm going to walk."

Chris: Their [Transmeta's] pitch is "use our hardware and change anything else on top of that," whereas our pitch is, "use any hardware you want and your software stays the same". Now which is the better pitch?

Francis: We will be making available to companies example source code, full documentation, APIs - we don't want to be doing this ourselves. We are world class in about 3 or 4 areas, and we are sticking to those areas and being creative in those. To write device drivers for us misses the point of what this company is about. We shouldn't be doing it, we should allow other companies to. Like printers - I want to get to a stage where Canon, HP and the other companies are writing device drivers for the printers themselves.

Chris: If someone was to build an Amiga box, all they need from us is to understand how they do what we call a "PI" port, which is the Platform Interface Layer. We'd quite happily give them example code for how to do one of those, then they could just pick all the bits themselves, and put the platform together themselves without us really being involved except to make sure that the test suite runs. We want to open it up so everybody can build things.

Francis: The only things that we are 100% in control of is the core kernel...

Chris: Yes, you can't have everybody monkeying around with the API!

Francis: Yes, but because of the way Elate is based you can actually bind whatever tools you like into the kernel, but the core kernel that everybody gets as standard and that you write to and the Java engine sits on top of is in our control. And the translators - because we have to ensure that the translators are all of the highest standards,

Chris: And run all the test suites.

Francis: And run all the test suites, so that if somebody writes something you can rely on it working on all the different platforms. Over time that may open up, but for that we would have to have a far more extensive test suite that anyone can use.

Tools at our disposal: Tao and Digital Content Heaven.

Francis: If you look at the intent multimedia toolkit, Digital Content Heaven, you've got the 2D library provided by Tao, and there's no question that it is the best in the world. We've got the 3D that is being integrated into it from Criterion - in our opinion they are the best in that class as well, they are certainly becoming the industry standard...

Chris: Well it's no accident that they got chosen for Playstation 2 and Dreamcast.

Francis: And shortly we should be announcing our audio layer as well.

Impartiality is kingship.
Kingship is Heaven.
Heaven is Tao.
Tao is eternal.
- Lao-Tze, the Tao Te Ching.

Efficiency in coding. Photogenics vs. the Gimp.

Francis: True story actually. Chris rings me up one day and he's not tearful, but he's distraught, so I ask what's the matter. He's written a method, it was actually a very complex Java method...

Chris: It was actually a polygon drawing...

Francis: ... and I asked what was the matter with it, and he said that it was 2.5 KB in size...

Chris: That's the biggest subroutine I've ever written!

Francis: What we've done is we've managed to get people in the company to think in the same way.

"It's very similar to the Gimp in that respect, but I think Photogenics is even better."

Chris: We have device drivers that do sample mixing and so forth at the low level and virtualise the sound hardware, but there is a whole pile of things you can do on top of that, score players and things like that...

Francis: We are going to provide a standard 2D, 3D, audio engine, Java, C, C++, VP which should be stonkingly good, the best. However we'll also be publishing the information we need to allow people to plug in what they need.

Chris: You've got to have that minimum set of libraries there so that people at least have a foundation to write to. If they then want to use third party libraries and things then fair enough.

Francis: And I'm expecting those applications to be written in VP, in binary portable assembler, where people can really take advantage of the very high performance, minimal footprint, try and get every last cycle out of everything that they do. Which is what of course the Amiga community is all about.

Chris: It [Photogenics] is a really nice program. It's superb. It's very similar to the Gimp in that respect, but I think Photogenics is even better. The thing is that core engine part, he could port that over to VP in probably a few days, and all the plug-ins then can just run on it.... This really is going to be great for the Amiga guys, they are going to love it.

Another big advantage from our point of view from being involved in the Amiga community is that there you have a set of programmers who have lived with a machine that has very low power, and very little memory, and they are used to writing efficient code. It's not like other areas of the market where people are used to writing hundreds of thousands of lines of complex C++ code for simple things. The Amiga community understands what it is all about, and we think we can give them a platform where they can really exploit the skills that they have got. We've got an architecture that really suits people thinking about what they are going to do, organising their program architecturally in a neat way, and I think the Amiga community is one of the best out there for doing that. They've already got that mentality.

Andrew Korn

Reviews Contents

CD Writers

We look at some of the options for burning your own Compact Discs.

Above: Eyetech's Mitsumi CDR stripped bare! (i.e. minus its external casing).

CD writer technology seemed to have reached a plateau. For several years, they had a maximum write speed of 4X (600KB/s). That changed last year, with a few 6X drives at first, followed by several 8X devices. It doesn't stop there - Plextor have just announced a 12X CD writer, which we'll be reporting on next issue. It takes a reasonably fast machine to use the extra speed of an 8X drive, so here, we will take a look at what is involved in creating CDs on your Amiga and examine a couple of 8X drives along with a more basic 4X offering to compare them.

There are three main ways of writing a CD: data, audio and UDF. Audio CDs are the simplest to work with. The CD writing software expects the data in a suitable format, usually WAVE, AIFF or raw CDDA (Compact Disc Digital Audio). The audio data is converted to CDDA on the fly; this is a fairly simple process not requiring a fast CPU. Because of this, there's normally no need to create image files for audio tracks - the audio file itself is sufficient. MPEGA will convert MP3 files to WAVE or AIFF, or you can do this directly within MakeCD.

If you intend to copy from audio CDs, make sure the source drive is fast enough. CD-ROM speeds relate to data, not audio. The Teac 8X CD changer reads files at 8X but audio at 6X. This is not a problem if you set a large enough buffer in the CD software (in addition to the drive's own buffer) as the CD writer can pause between tracks to allow the data source to catch up.
If you have an IDE CD-ROM and intend to regularly copy audio CDs, it would be worth investing in a more efficient IDE interface, like a PowerFlyer. If you want to use an IDE writer, a replacement IDE interface is almost essential.

Image is everything

Data CDs use a completely different filesystem from hard drives. The data needs to be converted to the CD filesystem. The normal way of doing this is to first build the complete CD as a file, known as an ISO image file because CD filesystems are derived from the original ISO9660 standard. This is the safest way to create a data CD, but you need up to 800MB of disk space for the image file. It is a good idea to have the image file on a different hard drive to the source data.

"CD writers rely on a continuous flow of data. Any interruption and the CD is ruined."

Using two partitions on the same drive results in a great deal of disk thrashing.

CD writers rely on a continuous flow of data. Any interruption and the CD is ruined. CD writers have some buffer memory to guard against short interruptions, but only a second or two. Converting data to the ISO filesystem can be quite time consuming, especially on directories containing a lot of small files. This is why the standard approach is to build the ISO image file first, when speed is not important. While safer, it is also slower since the image has to be fully built before anything is sent to the writer. "On the fly" image creation builds the image at the same time as sending it to the writer, using a memory buffer to smooth out any variations in speed. It's the fastest way of doing it, but requires a fast CPU and disk controller for data CDs with complex directories.

The third method, UDF, is also known as packet writing. This uses a completely different filesystem and is more like a removable disk in use. Data is written to the CD in small packets instead of being built up a track at a time. The bad news is that no Amiga CD software currently supports packet writing.

Recordable vs Rewritable

When CDR discs were expensive, rewritable CDs seemed a great idea. Now that CD-Rs are available for as little as 60p each there is less benefit to CDRW. Using CDRW for back-ups seems like a good idea, but you would need two discs to be safe, costing around the same as twenty CDR discs. CD-RW works at half the speed of CDR on the three drives tested here.

Below: Burning CDs is like floating on air with Teac's 8-speed drive.

Software

All hardware testing for this article was done using MakeCD, because that is my preferred CD writing software. There are two other CD writing programs for the Amiga, Master ISO and BurnIT. Each one has its strengths and weaknesses.

Many people swear by MasterISO - it has a more intuitive interface and similar feature set, although it requires AsimCDFS to enable some of the features. While it runs well on my A2000/040, I avoid it because it is unstable on my A4000/060, but this is not a common problem, as many other people use it with a similar set-up.

MakeCD is a powerful program with many useful features. However, these are hidden behind a somewhat unfriendly GUI. It does the job, and does it very well, but it can sometimes take a while to work out just how to do what you want. It was once described as "a programmer's GUI", which sums it up very well. One of MakeCD's unique features is its ability to create audio CDs directly from MPEG audio files. With a fast PPC, you can decode and burn to CD at the same time, even with an 8X drive.

BurnIT is the dark horse of Amiga CD software. While it's not as full-featured as MakeCD, it is more accessible to the first time or casual user. This is especially true when performing standard operations like copying a CD. As with MasterISO, data CDs can be built from individual files, while MakeCD only handles complete directories.

Demo versions of all three programs are on this month's CD, so you can decide for yourself. You don't even need a CD writer to try them. All of them will create ISO image files, which can be mounted with the "cdromemu" tool located in the MakeCD "goodies" drawer.

"Demo versions of all three programs are on this month's CD..."

"You can try as many variations as necessary, without it costing a penny in media."

Above: Yamaha's internal SCSI-2 8x CDR.

However, the Yamaha drive provides the best speed for both, at a lower price than the Teac write-only drive.

Another use of CD-RW is for testing that everything on a CD you are compiling works properly. You can try as many variations as necessary, without it costing a penny in media. There is, however, a much faster and easier way of doing this. MakeCD's "cdromemu" will mount an ISO image file as if it were a CD, in much the same way that Mac emulators use a hardfile to simulate a hard disk.

TAO or DAO?

This isn't another discussion on how to pronounce the name of Amiga's new OS partner. DAO and TAO are abbreviations of Disk-at-Once and Track-at-Once, the two methods of writing data to the CD. TAO is the usual method, where each track is sent to the writer separately, letting the hardware sort out the track markers and spacing. This method has the advantage that the data can pause between tracks, meaning you can build a CD a few tracks at a time and the software can stop writing to allow a slow data source to catch up.

DAO builds all tracks as a single entity on the computer, before sending to the writer. This gives more control of track layout. For example, you can use this to avoid the normal two-second silence between tracks. DAO and TAO normally only affect audio or mixed CDs - data CDs are generally burnt as a single track anyway.

Neil Bothwick A

Teac CDR58S

The Teac is the only CD writer in the test that does not handle rewritable discs.

We tested an OEM (Original Equipment Manufacturer) unit, supplied bare, just the drive and maybe a cable or disc. They are intended for companies building PCs with CD writers pre-installed, but also provide a cheap option for Amiga users who have no use for the PC SCSI cards and software normally provided with a full kit. The downside is that you get no support or documentation.

This drive is fast - not just the 8X writing speed but everything about it. You see this before you even insert a disc; the tray opens at a startling speed. Fixing CDs after the burning is complete is also fast, taking around half the time of the Yamaha. This may not seem important, but if you want to produce batches of CDs, the time taken to fix up each CD is significant.

Apart from that, there's little to say about this drive. As the saying goes, "it does exactly what it says on the box," or would do if this unit had come in a box. If you want the fastest CD writing, and don't need a rewriter, this is the best drive, but it is also the most expensive which makes it difficult to recommend.

Yamaha CRW8424SX

The Yamaha drive writes CD-R at 8X and CDRW at 4X. It comes in three flavours, internal SCSI, external SCSI and IDE. We tested the external SCSI model. This is the most suitable for a desktop 1200 or 4000 owner (the 4000's CD-ROM bay is too short for a CD writer and probably already has a CD-ROM in it). The drive unit is the same as the internal SCSI model, housed in a case with PSU, SCSI and audio connectors at the back. There are two SCSI II sockets and a termination switch, enabling the drive to be daisy chained. You should budget for a SCSI cable too, as none is supplied.

Writing data to a CD-R is just as fast as the Teac drive, but some of the ancillary operations are a little slower. This is offset by the Yamaha's ability to handle rewritable CDs. CDRW writing is still at 4X speed. As writing speeds increase, so do the chances of the computer failing to supply the data at a continuous rate. A 4MB buffer, twice that of the Teac, means this drive is able to survive an interruption of three seconds without trashing the CD.

The Yamaha 8424 comes with a clear manual, although it's really only a matter of connecting the cables and setting the SCSI ID via a switch on the back. Most of the manual relates to PCs.

Mitsumi CR-4802TE

This an IDE drive with 4X write and 2X rewrite. The supplied manual is extremely basic, but connecting up any CD writer is an easy task, no different from connecting a CD-ROM drive. Being an IDE drive, the performance was noticeably slower than the SCSI units. Even though it was connected to a PowerFlyer and not the standard IDE port, MakeCD was unable to read from the source drive (SCSI) and write to the CD at the same time. This makes the use of image files for data CDs compulsory with this drive. This isn't necessarily a bad thing - the type of user that this drive is aimed at is likely to be a casual user with an average Amiga. Power users with high spec Amigas are more likely to be attracted by the fast SCSI drives.

Direct copying of audio CDs is possible, although a large buffer is advisable. With enough memory to preload each track completely before writing it to CD, audio copying is totally painless with this drive.

This is a basic drive at a basic price. However, it does include one very important feature missing from the other two - support. You can buy even cheaper elsewhere, but try asking someone from PC World for help setting it up to with MakeCD or a Blizzard SCSI controller.

Teac CDR58S	
SUPPLIER:	Many PC dealers
PRICE:	£263.00

Yamaha CRW8424SX	
SUPPLIER:	Various
PRICE:	SCSI Internal £219.00 IDE Internal £199.00 SCSI External £249.00

Mitsumi CR-4802TE	
SUPPLIER:	Eyetech
PRICE:	£159.95 £199.95 with MakeCD

Postscript: The future of CD writing

Compact Discs not versatile enough for your storage requirements? There's always DVD...

Just a couple of years ago CD writer (CD-R) and CD re-writer (CD-RW) drives were a hugely expensive luxury for the home user. Recently we reached an important milestone when Mitsumi launched their first £99 CD-RW drive into the UK market. The same dramatic fall in price has also been seen in the re-writable DVD market, an emerging new standard, but one that should take hold among everyday users much faster than writable CDs ever did.

There are currently two different writable and re-writable DVD standards. Both are agreed standards, but no single way forward has yet emerged from the pack.

What is DVD-RAM?

DVD-RAM is a high-capacity, high-performance optical disc that allows data to be read, written and erased. It is designed to work exactly like a floppy disk, allowing users to copy and delete files from it, and use it to run programs. DVD-RAM offers all of the benefits of DVD, including high capacity and compatibility with CD formats, combined with rewrite support. DVD-RAM is designed to play back all DVD-ROM applications as well as being used for desktop storage, data exchange, backup and archiving.

DVD-RAM offers up to eight times the storage of a re-writable CD (5.2GB per disc). It can also read all of the CD and DVD formats including CD-ROM, CD-Audio, CD-R , CD-RW, DVD-ROM and DVD-R.

DVD-RAM discs consist of double layers of metallic film embedded in hard plastic. A laser uses light of varying intensities to write and erase data. The metallic layers in the disc are made of a crystalline material that reflects light in the same way as a mirror. To write data, the laser heats a metallic layer to 900 to 1,300 degrees Fahrenheit and creates pits in the surface. To erase or change data, a weaker laser beam heats the pits to approximately 400 degrees Fahrenheit.

Single-sided DVD-RAM discs come with or without cartridges and can be read by some "newer generation" DVD-ROM drives (check your drive's specification for additional info). The transfer rate for DVD-RAM is determined by the media specification. The 2.6GB double-sided disc manages a healthy 1,385KB/sec. transfer rate, and the planned single-sided 4.7GB disc will manage a transfer rate of 2,770KB/sec. at current drive speeds.

DVD-R

So far there is only one DVD-R manufacturer - Pioneer. Its DVR-S201 drive offers 3.95 GB (a 4.7GB firmware upgrade is planned) of data storage.

Up to 9.4 GB can be stored on one double-sided DVD-R disc.

Data can be written to a disc at a DVD 1X equivalent of 11.08 Mb/sec, which is roughly equivalent to nine times the transfer rate of a CD-ROM's 1X speed. After recording, DVD-R discs can be read at the same rate as mass-produced replicated discs, depending on the speed of the DVD-ROM drive used.

DVD-R is a write-once format, meaning that data can be written to a disc and stored without fear of accidental erasure. The fundamental technology employed is similar to that used by CD-R, except that data is written at a higher rate and density.

So far, DVD-R is winning support as a quick and reliable way to master DVD movie discs. Its high price and expensive media is currently keeping it out of the reach of the mass-market, who are favouring the cheaper and more readily available DVD-RAM format.

DVD and the Amiga

Right now, DVD support on the Amiga is limited. The latest version of Allegro CDFS (as shipped with the Power Flyer and Power's 4-way buffered IDE interface) supports the UDF DVD file system, allowing you to read DVD discs - but there are no MPEG-2 decoders for the Amiga yet, so you can't watch DVD moives.

As yet, DVD-RAM or DVD-R burning is not supported by any of the Amiga's CD mastering tools. However, as prices fall further and demand among users grows for these types of drive, the authors will no doubt consider expanding their products to support the dominant writable DVD format.

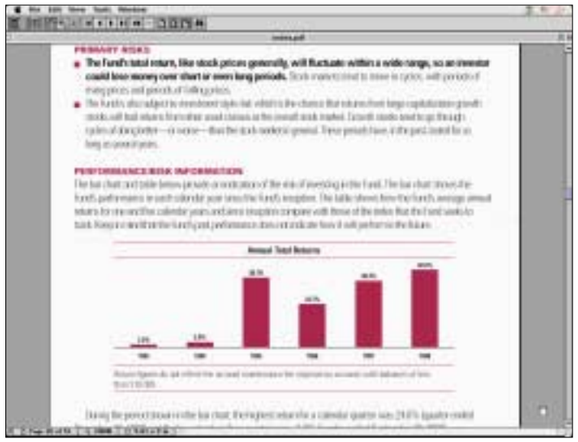
Chris Green A

DVD-R		DVD-RAM	
Description:	Write-once. Provides sequential write, similar to CD-R. No overwrite capability.	Description:	Random access storage similar to floppy disk or CD-RW.
Capacity:	3.95GB/side	Capacity:	2.6GB/side
Rewrites:	0	Rewrites:	100,000
Write method:	N/A	Write method:	Wobble-land-groove
Drive price:	Around £3,000	Drive price:	Around £400
Media price:	Around £60	Media price:	Around £20
Applications:	Pre-mastering	Applications:	Storage, Backup, Archive, Internet, Video

Basilisk II-0.8.1

Is it a case of "Mac to Basics" with Christian Bauer's open-source ShapeShifter descendant?

Basilisk II, release 0.8.1 (Basilisk for short) is the latest evolution of Christian Bauer's 68000-series Macintosh emulation, which started way back in 1995 with the original Shapeshifter. Now available for a multitude of platforms, Basilisk comes complete with free source code under the GPL. If you've always been curious as to how multitasking Mac emulation works on the Amiga, or you have an idea of how to make it better, this is your big chance, and one not likely to be repeated.



Above: Reading PDF files on a Mac, on an Amiga, courtesy of Basilisk.

If you've used a Mac emulator in the past 6 or 7 years, you know the drill: run a small patch program at the top of your startup-sequence to reserve a block of memory for the multitasking MacOS, obtain a Mac ROM (most commonly done by using a small program on a 68000-series Mac to rip the image, but you are legally required to own the ROM or machine as well), and obtain the MacOS, preferably System 7.6 or thereabouts, preferably on CD-ROM. Basilisk can boot directly from CD-ROM, and supports file disk images of any size. Apple provides System 7.5 free of charge in disk image format on their support web site.

Like its peers, Basilisk also supports Mac hard drive partitions.Unfortunately, the interface for configuring drive partitions is uncomfortable, and requires you to calculate the starting block and block length of the partition (the formula, incidentally, is Cylinders * BlocksPerCyl * Surfaces.) The faint of heart may need to stick with file disk images (which are painfully slow) or devote an entire SCSI disk to the Mac, because the emulator can directly access a disk on almost any Amiga SCSI controller.

Your virtual Mac desktop can be opened either in a monochrome Workbench window, a Picasso IV 16-bit picture-in-picture, or its own dedicated screen, which is ideal for most users. CyberGraphX and Picasso96 are both supported, although Basilisk's screen requester did not work on our test machine, requiring the use of GetModeID and editing the Basilisk config file to get the full-screen option to work properly. Sound support is handled through any available AHI device, which of course includes the Paula chip.

Highlights

Basilisk, like the later editions of Shapeshifter, has MacOS 8 support, but it's not at all clear that you'll want to use it. System 7.6 with the Appearance Manager plugin is usually enough to gain compatibility with most applications, and there are precious few Mac programs that require System 8 and still support 680x0 machines. In addition, System 8 has some compatibility problems with '060s that require shutting off the superscalar cache, something that isn't necessary with 7.6.

A few aspects of Basilisk improve on the old Shapeshifter methods. There's no hard-coded limit to the number of partitions and file disks you can use - ShapeShifter limited you to two apiece. The built-in CD-ROM support is better, as under Shapeshifter it was often preferred to use the old Emplant empcd.device workaround driver. The entire Amiga hard drive tree is also mounted automatically under the Mac emulation - no special drivers required.

But these bright spots aside, in the end Basilisk looks like exactly what it is: an afterthought port that reflects the fact that the author has been dedicated to BeOS development for years. There's also a snide, but amusing, policy on bug reporting (*"You found a bug? Well, use the source, fix it..."*). The GUI is sloppy, there's no way to force the emulator to quit if the MacOS hangs, and documentation for the quirks of the Amiga version is spotty.

There's still good news if you want to do Mac emulation on the cheap. Christian Bauer released Basilisk's predecessor, Shapeshifter 3.10, as freeware. Although Basilisk has benefited from a number of minor bugfixes since Shapeshifter's final release, they're not enough to make the switch compelling, and the extremely tricky configuration makes it even less appealing. You might as well tick with FUSION or Shapeshifter unless you know for sure you need the newer emulator, or you want to poke around with the source code.

Jason Compton A

Basilisk

SYSTEM: 68020+, 8-12MB FAST RAM, 50+ MB HD, Mac ROM image and MacOS 7 or 8.

SUMMARY: The most up-to-date Mac emulator, but also the most difficult to use. With only minor differences from Fusion and Shapeshifter, only the courageous need apply.

NAME: USROBOTICS PROFESSIONAL MESSAGE MODEM & MESSAGE MODEM
DEVELOPER: 3COM
SUPPLIER: VARIOUS
TELEPHONE: +44 (0)118 922 8200
COST: Around £119.99 and £79.99 respectively.
WEBSITE: www.3com.co.uk

3Com Message Modems

Ever wanted a modem that could talk back? Read on.

Modems don't just connect computers over phone lines any more. First, fax capability was added, and then came voice operation, allowing you to use your modem as a conduit for receiving voicemail messages.

The problem is that these functions require your computer to be on and running when a call comes in. Well - not any more!

Hooray for STFax

Independent Operation modems are able to store incoming faxes and voicemail messages within the modem, removing the need for the attached computer to be switched on and running at the time the call comes in. Sadly, there is no agreed standard or protocol for this, so most such modems are dependent on their supplied software, leaving Amiga users pretty stuffed!

Thankfully STFax supports three of the most widely available Independent Operation modems - Pace's Solo, and 3Com's Professional Message modem and Message modem. Pace went bust last year, leaving Amiga users with just the 3Com units to choose between.

Message Pro

The Professional Message modem, or Message Pro, is a beast of a modem. Contained in a case measuring 17x12x6cm is the modem circuitry along with a large playback speaker and six buttons as found on a conventional answering machine to control volume, playback, fast-forward, rewind and deletion of messages.

The modem can store 50 fax pages or 20 minutes of audio in 2MB of dedicated on-board RAM (this can't be expanded). The unit supports both V90 and 3Com's own X2 56k format.

Setting up the modem is simple. It's just a case of enabling Independent mode through STFax and recording your answerphone greeting. Your greeting is limited to 15 seconds, which can be coped with but can prove very restrictive. Recording is done using a telephone handset (the modem has a handset passthrough socket) or using the poor-quality built-in mic.

You can dial in remotely to check your messages, much like a conventional answerphone. Likewise you can playback messages from the modem using the on-board controls, or via STFax. In short the Message Pro is very straightforward to use and pretty faultless. Audio and fax quality is excellent, though in tests it struggled to correctly handle some oversize faxes (it squashed them) though this was simple to correct within STFax.

Message modem

At the other end of the scale is the Message modem, the baby brother of the Message Pro. The Message modem has been squeezed into the same casing used for the popular Sportster modem - a small gun-metal grey wedge slightly smaller than a video cassette, though featuring an even larger row of pointless LEDs.

Anyone familiar with the Sportster will notice that the Message modem is missing a few basic things. There is no on-board telephone pass-through any more, though a BT socket doubler is included in the box. The foldout base that allowed you to stand the modem on its end is also gone.

Compared to the Message Pro, there are several economies. Gone are the external answerphone controls and the large, clear speaker. The Message modem has a small, rather poor quality speaker and an equally bad built-in microphone, which is only capable of picking up noise within six inches.

The Message modem has 2MB of shared memory, which holds all incoming messages, your answerphone greeting and embedded system software. This cuts back the storage capacity of the modem to around 11.5 minutes of audio or 25 A4 fax pages. As with the Pro, you are restricted to a 15-second greeting.

Apart from the cut-down hardware features, actual operation of the modem is identical to that of the Message Pro, delivering crisp, clear messages and accurate reproduction of faxes. However, as with the Message Pro, problems were encountered when receiving pages larger than A4, the page being squashed when viewed in STFax.

Chris Green A

3Com Message Pro

SYSTEM: Any Amiga

SUMMARY: Excellent build quality, easy to configure and good recording quality. There is a possible issue with receiving over size faxes, but it is nothing that actually inhibits performance.

3Com Message Modem

SYSTEM: Any Amiga

SUMMARY: Performance is just as good as its big brother. Only let down by its reduced storage capacity.

Mitsubishi Monitors

Looking to replace your 14 incher? However big your wallet is, Mitsubishi will try to cater for you.

"...the display was sharp but colour was slightly washed out..."

An 18-inch flatscreen, being comparable to a 19-inch CRT (Cathode Ray Tube) monitor in terms of display size, is a desirable commodity. However, with 19-inch CRTs being available for around £400, LCD monitors are usually considered far too expensive for the benefits they offer.

The LSA820W supports vertical scan frequencies between 30Hz and 85Hz and is designed for optimum performance with 1280x1024 screenmodes, as are most 18-inch LCD monitors. In use, the display was sharp but colour was slightly washed out and brightness uneven. Because LCD screens utilise fluorescent lighting behind the screen in order to produce a picture, brightness and colour intensities are rarely consistent, even when viewed head-on. Though evident to varying degrees with most - if not all - LCD flatpanel displays, it is an unwanted feature particularly noticeable with this unit.

The ability to take two inputs, the first via a built-in lead, allows this monitor to be connected to a pair of computers at the same time. Switching between the two inputs is achieved via the on-screen display rather than a dedicated button as provided on the Sony L181 flatscreen.

Despite being cheaper than other 18-inch flatscreens, it's hard to recommend this monitor over those reviewed last issue. If you're about to spend the sort of money a monitor like this is going to set you back, you'd probably regret not finding the extra few hundred the best monitors in this category cost.

Small Diamond

17-inch monitors are becoming more and more common these days, and have dropped quite significantly in price as a result. Gone are the days when such a monitor would set you back over 500 pounds - so if you've not yet upgraded your Amiga to a 17 inch monitor or beyond, it's about time you took advantage of those market forces.

The 17-inch DiamondPro 710 from Mitsubishi is a standard CRT monitor. Somehow, it manages to be both large and small at the same time. Lifted out of the box it feels quite hefty, yet looking at it once you have it on your desk you could be forgiven for thinking that someone must have swapped it for a smaller screen when you weren't looking.

Being a CRT, the DiamondPro 710 has a 16-inch viewable area. It can handle vertical scan rates between 50Hz and 130Hz and screen resolutions of up to 1600 x 1200 - standard for today's 17-inch monitors, as is a 0.25mm aperture grille pitch.

Mitsubishi's own DiamondTron CRT technology provides a flat screen which reduces glare, and a whole host of geometry settings, controlled via five buttons beneath the screen, ensure a sharp, defined picture. Tweaking advanced options such as colour temperature, and making use of Mitsubishi's Fine Picture Mode (FPM) technology - designed to give better results with certain types of picture and disabled by default - can improve the 710's display further still.

Despite a lack of punch when it comes to bold colours, the DiamondPro 710 offers pretty good value for money. The picture is sharp, the screen is beautifully flat and the horizontally aligned wires which hold the aperture grille in place are barely visible compared to other 17-inch monitors that we've seen.

David Stroud A

LSA820W

Type:	18" LCD flatscreen
Dimensions:	18.1"(w) x 18.9"(h) x 8.6"(d)
Weight:	9kg
RRP:	£1,875 (exc. VAT)
Summary:	A relatively cheap flatscreen let down by uneven brightness.

DiamondPro 710

Type:	17" CRT monitor
Dimensions:	16.1"(w) x 16.2"(h) x 17.1"(d)
Weight:	19kg
RRP:	£249 (exc. VAT)
Summary:	Functional design, solid picture. Colours could be stronger.

Digicam Bonanza!

A new piece of software has suddenly opened up a lot more options for digital cameras on the Amiga - so we took the opportunity to investigate.

Yes folks, the future really is digital. As I write this, the first all-digital screening of a movie has already taken place in Glasgow (just a few days ago) and Toy Story 2 is due to be the first all-digital screening in London next weekend. Films are just crossing the analogue/digital dividing line, TV (or at least some of it) has already gone digital and photography isn't about to be left behind.

Digital photography is becoming increasingly popular, but rather than taking the place of traditional photography, it's finding new markets and reaching out to people for whom film isn't suitable - either it's too expensive or it just takes too long. Film isn't about to die out though - Kodak recently reported that in 1999, US film sales grew 14 percent along with increasing demand for digital photography products, and predicted that *"the rapid convergence of film and digital imaging products should lead to a 50 percent increase in prints by 2005."*

Predictably, the Internet has had a lot to do with the increasing sales of digital cameras. Anyone can publish on the web, and where once there were just words, there are now pictures. With a digital camera, images can be uploaded to the 'net in minutes. The same pictures taken with a 35mm camera would need to be processed and scanned - or processed straight to PhotoCD - before they could appear on the web. The result? Well, take a look around the web and you could be forgiven that digital's only contribution to photography are small and fuzzy pictures of American families' pets and relations. But take heart! There's more to digital photography than first meets the eye.

Don't Just Imitate; Innovate!

Digital cameras offer a lot of advantages over film-based photography. With built-in LCD screens, digital cameras allow you to see the result of pressing the shutter release button immediately. There's no need to reel off a whole roll of film and then wait for it to be processed - if you don't like the picture you've just taken, just delete it and try again!

Freed from the costs and constraints of film, photographers are finding that they can experiment with new and exciting avenues of photography. At the higher end, some people fix their Nikon Coolpix 950 to a microscope to get some incredibly detailed pictures of extremely small things - and because bad shots can be overwritten time and time again, they can keep taking pictures until they capture the perfect close-up. At the lower end, the now cheaper, lighter, lower resolution cameras are strapped to radio controlled helicopters, planes, boats and hovercraft by RC enthusiasts wanting to get a different perspective on the world.

Freedom with Constraints

From taking pictures of personal possessions for insurance purposes to creating panoramic masterpieces, a digital camera frees the photographer from the constraints of time and money associated with traditional methods. Digital photography needn't just be about taking new photographs either - it is also a perfect way to preserve prints that would otherwise deteriorate with age: Pixels never lose their colour.

Where traditional methods win out is in the all-important area of resolution. 35mm SLR cameras are both cheaper and capable of producing higher resolution images than today's digital cameras. Prices have fallen, but digital cameras are still relatively expensive when compared to 35mm. The main reason for this price difference lies with the CCD. A 35mm camera forms a picture approximately 36mm x 24mm in size, but mass-producing a CCD that size without imperfections is extremely costly and difficult, and CCDs can't achieve the same resolutions as film anyway.

From top to bottom:
- Minolta Dimâge V
- Epson PhotoPC 800
- Epson PhotoPC 850z
- Olympus Camedia C-2020z
- Nikon Coolpix 950

Until the cost of manufacturing CCDs falls, high quality digital cameras will remain out of reach of the mass public, but a top-of-the-range digital camera is no longer a necessity for creating high quality images for use on-screen: image sizes of 1600x1200 pixels are now firmly in the mid-range.

Minolta Dimâge V

This relatively inexpensive camera is quite outdated by today's standards (it's over two years old, which is a long time in digital photography terms), but doesn't deserve to be overlooked if what you're after is a small, light, point-and-shoot camera for low resolution work where image size isn't a necessity. Shooting pictures in 640x480 in "Fine" or "Standard" quality, you can fit 16 or 40 pictures (respectively) onto the included 2MB SmartMedia card.

The LCD isn't up to much, and combined with the lack of an optical viewfinder, taking photographs in low light conditions becomes something of a lottery. Also, the built-in flash has a tendency to bleach out anything within spitting distance, so this camera is best suited to outdoor shots in bright weather.

The Dimâge V has simple, functional controls and something that caused the most interest in the *Amiga Active* offices - a detachable, swivel lens! With a bit of practice, you can hold the camera body in one hand and conceal the lens somewhere else about your person to catch people off-guard. Topped off with basic zoom and macro functionality, this is a handy, pocketsize camera for the amateur photographer. Eyetech bundle it with Camcontrol (see boxout, below) for £259.95, so you've all you need to get started.

Below and right: The Minolta Dimage V's swivel lens allows you to catch people (and tired mailhounds) off-guard.

Above and left: The Epson PhotoPC 800, ideally suited to the casual Bournemouth tourist.

Epson PhotoPC 800 & 850z

Next up, we tested a couple of Epson's PhotoPC line of cameras - the 800 and 850z. The 800 is a fixed lens compact camera with digital zoom and a solid feel to it. Despite being a little awkward to hold in one hand without obscuring the lens or viewfinder, the meaty 1600x1200 maximum resolution, built-in anti-red eye or slow sync flash, auto and manual focus and 9 levels of exposure compensation (-2 to +2EV) make it a very versatile and great all-round camera. Downloading pictures to the Amiga can be achieved with Digicam (see boxout).

The more expensive 850z from Epson is a wonderfully constructed piece of kit. From the leather-feel grip which your right hand automatically wraps around, to the built-in automatic lens cover which opens and closes as smoothly as a Star Trek sliding door with a gentle whirr, it oozes build quality. A trapdoor above the two-inch LCD allows sunlight to act as a backlight when outdoors in bright conditions, prolonging the life of the four AA batteries housed on the right hand side of the camera.

With the batteries effectively in your right hand, the 850z almost manages to be a single-handed camera. If the four buttons down the left-hand side of the LCD were re-positioned closer to the right hand side, everything bar the diopter adjustment could be quite happily controlled with the one hand. An external flashgun shoe and time-lapse photography modes (anywhere from 10 seconds to 24 hours between

The Soft Option

When it comes to software for controlling a digital camera, there are options...

One rather nifty piece of software to have cropped up recently is Digicam, written by Volker Remuß. Digicam takes advantage of the digital camera protocol figured out by Eugene Crosser, author of PhotoPC, a Linux program. The list of cameras it theoretically supports is quite substantial, and includes several models each from the likes of Epson, Olympus, Sanyo, Nikon and Agfa, although when we tried it out on an Agfa ePhoto CL30 and a Fuji MX2900z, it failed to communicate. We were, however, sufficiently pleased to discover that Digicam does work with the Nikon Coolpix 950 and the Epson PhotoPC 800 and 850, albeit rather sporadically at times.

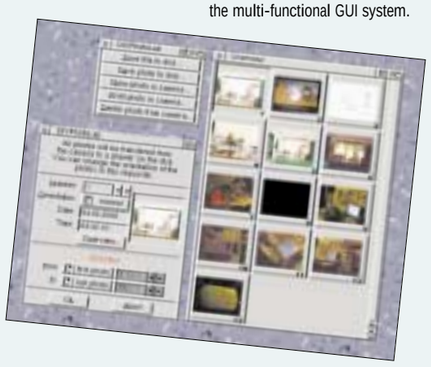
For more information about the protocol, and a list of cameras that are known to work, take a look at www.average.org/digicam/

Under Control

Camcontrol is a commercial piece of software from Vesalia Computer in Germany (distributed in the UK by Eyetech for £29.95) which supports cameras such as the Minolta Dimâge V, Mustek VDC-200P and several models from the likes of Casio, Fuji, Kodak and Olympus.

Requiring OS 3.0 or higher, and a recommended 10MB of RAM, Camcontrol allows the viewing, downloading and printing of images, as well as offering several ARexx scripts to interface the package with programs such as PPaint 7, Pagestream 3, AdPro 2.5, Photogenics 2 and DPaint V.

Below and left: Camcontrol from Vesalia, the multi-functional GUI system.



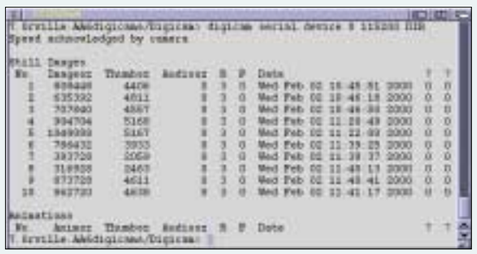
With the Minolta Dimâge V for instance, CamControl's baud rate is fixed. Downloading 1.75MB of pictures took nearly a quarter of an hour. Buy larger memory cards at your peril!

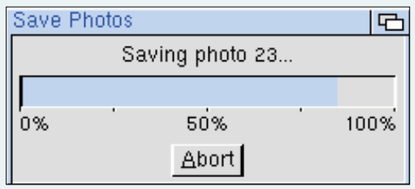
The bottom line is that until USB solutions arrive on the Amiga, the transferring of pictures from digital cameras is likely to remain a rather long-winded affair.

Slow Transferzzz...

Downloading digital photos to your Amiga is a slow affair, as there is only one option - the serial port. With some cameras and a high-speed serial interface such as the Surf Squirrel, faster baud rates can help to speed up the downloading process, but it's not always so cut and dried.

Below: Digicam lets you download pictures from a host of digital cameras with similar protocols.





From Lights... ...to Bytes

In a traditional camera, light passes through a lens and "burns" an image into photographic film. In a digital camera, the same light falls on a CCD (Charge Coupled Device), a grid made up of millions of photosites. Electrons are knocked from each photosite, resulting in an electrical charge.

The charge emitted from each photosite corresponds to the amount of light falling upon it and is recorded by the digital camera. The levels of charge are then converted to numbers, which recreate the picture in digital form.

Put some colour in your cheeks

That explains how a digital camera measures the light intensity for each pixel in a digital image, but you might be wondering how it measures colour.

One pixel in a picture is actually represented by three photosites on a CCD, each of which is covered with a red, green or blue filter. Since different levels of red, green and blue light can be combined to make any other colour in the visible spectrum, the values measured from the intensity of light falling on each of the red, green and blue photosites are combined to give each resulting pixel in the digital image a colour.

Therefore, the CCD of a digital camera which is capable of 1600x1200 pixel colour images is made up of over 6 million photosites.

Storage & power

Currently, the two main storage media used by digital cameras are CompactFlash (Nikon, Epson) and SmartMedia (Olympus, Minolta). 64MB versions of each are comparable in price (selling for around US$180 via online mail-order sites) but CompactFlash cards are available in up to 128MB capacities.

Something smart *and* compact is the IBM Microdrive (pictured above). Available in 170MB and 340MB varieties, a handful of digital cameras and other products already support this nifty little mechanism. Coming to a digital camera near you soon...

Power up!

There's just one thing you need to remember about digital cameras - they eat batteries like there's no tomorrow. Standard alkaline batteries are drained in minutes and provide just a handful of shots. Nickel Metal Hydride (NiMH) batteries, however, are rechargeable, and last a lot longer in between charges.

Left: Impressive clarity from the Epson PhotoPC 850z's optical zoom.

Right: Not to be outdone, the Nikon Coolpix 950's optical zoom also shows good detail.

pictures) add to the already alluring appeal of the 850z. You can download your pictures to an Amiga with the freely-available Digicam software as with the PhotoPC 800, although results with the current version proved slightly erratic - working one minute, not working the next. More than worth it when you do get it working, though....

Olympus Camedia C-2020 Z

A more compact zoom camera than the Epson PhotoPC 850z, the C-2020 Z from Olympus sports 3x optical and 2.5x digital zoom, an intuitive menu system on its 1.8" LCD display (which proved to offer a clear picture even in sunnier conditions - the best of those here) and even a remote control and a 12-second timer for taking pictures. Despite lacking a shoe for an external flashgun, a synchronization socket is provided which will allow you to connect an external flash.

Camcontrol works fine with the C-2020 Z, despite it not being officially listed as one of the cameras supported. Thumbnails appear corrupted in Camcontrol's thumbnail window, but pictures are fine when downloaded. This is a great little compact camera, and image quality was more than acceptable - the 2.5x digital zoom wasn't too shoddy either.

The real-time sepia and black & white modes are a nice little bonus, and the ability to take a picture without making certain changes permanent is a nice touch, and certainly speeds up operation.

Nikon Coolpix 950

This 2.1 Megapixel Nikon Coolpix swivels in the middle, just like the Minolta Dimage V, but unlike the Minolta, it is packed with features. Your hands wrap easily around the camera body, and it feels completely natural to use as a result. An added advantage of this swivel-lens is the ability to take pictures whilst holding the camera by your waist and looking down at the LCD screen, rather like using a waist-level finder on a medium format camera. People don't shy away from a camera when they don't know that it's pointing at them, so not having to raise the Coolpix to your face will help to capture people in a much more natural, relaxed state rather than running away from the camera.

> **"...image quality** was more than acceptable - the 2.5x digital zoom wasn't too **shoddy either."**

Below: The Olympus C-2020Z's optical and digital zoom combine for extreme closeups!

The Coolpix supports plenty of resolutions up to 1600x1200, automatic and manual focus, auto and manual white balance, continuous shot mode, best shot mode (automatically selects and saves only the sharpest image from a sequence) and plenty of other little features, but best of all has to be the 950's macro capability. It completely outshone the opposition with the ability to focus as close as 20 mm (see picture).

The only downside to this camera is the seemingly constant clicking noise made by the autofocus mechanism. Unless held absolutely still in front of a static subject, the lens has a tendency to click away happily to itself, which can be quite distracting. Apart from that, there's little to fault the Coolpix 950 on.

Leaps and bounds

If you think the cameras on these pages are impressive, then here's a taster of the cameras that have just been announced from a few leading companies. The Nikon 990 addresses a few criticisms levelled at the 950 - it is capable of 3.34 Megapixels and can capture 40 seconds of MPEG video at 320x240. The more than reasonable asking price of Sony's Cybershot DSC-S70 includes a top-of-the-range Carl Zeiss lens, and a battery that apparently lasts for 2,500 shots. The Fuji FinePix S1 Pro, thanks to Fuji's SuperCCD technology, is capable of pumping out 6.1 Megapixels (that's a resolution of over 3,000 x 2,000 pixels in layman's terms) from a 1.1" CCD.

If these announcements are anything to go by, you should expect some of the cameras you've just read about to be appearing on the second-hand market very soon. You may just spot a bargain...

David Stroud A

Above: Capable of getting as close as 20mm from your subject, its macro capability is the icing on the cake of the Nikon Coolpix 950. We've printed this picture at 50 percent, by the way.

You want more?

There are several good web sites that cover digital cameras and digital photography in much more depth than we have done here. A great place to start is www.shortcourses.com which covers pretty much everything from taking pictures to printing them on the right type of paper. A good place to go for the latest digital camera news is www.dcresource.com. This site also features reviews of digital cameras, as does www.inconference.com/digicam/

Finally, to see some of the digital photographs we've used here on your Amiga, take a look inside the Magazine drawer on this month's AACD.

If you're thinking of shelling out for one of the four more expensive cameras we've covered here, you'll need to know how they compare...

Epson PhotoPC 800	
Dimensions:	113 x 67.5 x 36 mm
Weight:	240g
Batteries:	Two AA
Max Resolution:	1600x1200
Zoom:	2x digital
Macro:	15-50 cm
Memory type:	Compact Flash (8MB card included)
Connectors:	AV out, DC in (3.4v), data out (USB and serial cables provided)
Software:	Digicam (on our CD)
Notes:	Microphone for audio notes (up to 10 sec) with photographs. Intuitive menu system, built-in manual lens cover.
RRP:	£458.72 (exc. VAT)

Epson PhotoPC 850z	
Dimensions:	126 x 82 x 72 mm
Weight:	400g
Batteries:	Four AA
Max Resolution:	1600x1200
Zoom:	3x optical, 2x digital
Macro:	20-50 cm
Memory type:	Compact Flash (8MB card included)
Connectors:	AV out, DC in (7v), data out (USB and serial cables provided)
Software:	Digicam (on our CD)
Notes:	Microphone (as PhotoPC 800). Trapdoor above LCD for sunlight to act as backlight. External flashgun shoe.
RRP:	£535.32 (exc. VAT)

Olympus C2020 Z	
Dimensions:	107.5 x 73.8 x 66.4 mm
Weight:	304g
Batteries:	Four AA
Max Resolution:	1600x1200
Zoom:	3x optical, 2.5x digital
Macro:	20-80 cm
Memory Type:	SmartMedia (8MB card included)
Connectors:	Video out, DC in, data out (serial cable supplied) and flash sync.
Software:	Camcontrol (Eyetech)
Notes:	Full auto TTL (Through The Lens) white balance. 1.8" LCD offers good contrast even in sunny conditions.
RRP:	£649.99 (inc.VAT)

Nikon Coolpix 950	
Dimensions:	143 x 76.5 x 36.5 mm
Weight:	350g
Batteries:	Four AA
Max Resolution:	1600x1200
Zoom:	3x optical, 2.5x digital
Macro:	2cm - ∞
Memory Type:	CompactFlash (8MB card included)
Connectors:	Video out, DC in, serial out, external flash sync.
Software:	Digicam (on our CD)
Notes:	Continuous autofocus, exposure compensation, manually configurable white balance and a fully-featured menu system.
RRP:	£799.99 (inc. VAT)

Top Reads

If you ever get bored with plugging things into your computer, you can always pass the time by reading about them.

Instant HTML Programmer's Reference

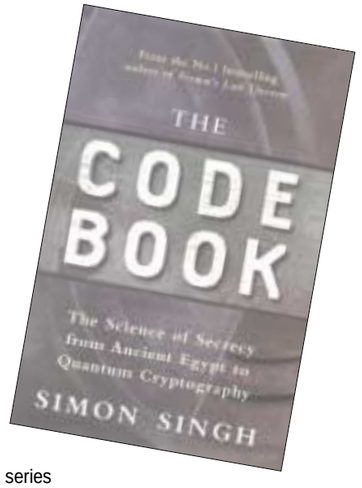
There's not a lot to say about the Instant HTML Programmer's reference, other than if you plan on spending any serious time building web pages, you should own it. Over 400 pages cover everything from simple text layout to Javascript and Cascading Style Sheets to an extraordinary depth.

Instant HTML maintains a good balance of clarity and depth - the degree of clarity is surprising given just how in-depth this book goes. It even contains an alphabetical reference to all the HTML tags, listing all the attributes available to each tag, and a table of platform compatibility so that you can see whether the code you are writing is likely to work in Netscape as it does in Voyager (not that Voyager is included, of course).

There is one major flaw with this book, and that is the poor accessibility of some of this information. The index is rather convoluted, and for something that is, after all, meant to be a reference volume, it can actually take a little while to refer to. However if it's HTML 4.0 you are after, this is the definitive resource.

Andrew Korn A

Authors:	**Alex Homer, Chris Ullman & Steve Wright**
Publisher:	**Wrox**
Cover Price:	**£18.49**
Amazon price:	**£10.94**
ISBN:	**1-861001-56-8**



The Code Book

If you enjoyed Channel 4's series on the British attempts to break the Enigma code in WWII, you'll find this book of interest. The Code Book is not a cryptographic cook book, full of recipes for encryption. Rather, it chronicles the development of the arts of codemaking and codebreaking over the last two thousand years. From the basic ciphers used by the Romans to the currently unbreakable (in real terms) RSA encryption methods used by PGP, The Code Book charts the efforts of cryptographers to create the unbreakable cipher, and the equally intensive labours of the codebreakers to prove them wrong.

Most chapters devote more space to the activities of the codebreakers and the extraordinary lengths to which they go to in order to get enough information to break a code. For example, the RAF would mine specific areas of the Atlantic during WWII so that they could intercept the warning messages to the U-boats knowing locations they would contain. The chapters on public-key cryptography concentrate on the development of the technology, since breaking such ciphers is currently impossible in practical terms.

Other chapters cover the interpretation of inadvertent ciphers, documents written as plain text in a language or script long forgotten, such as Egyptian hieroglyphics.

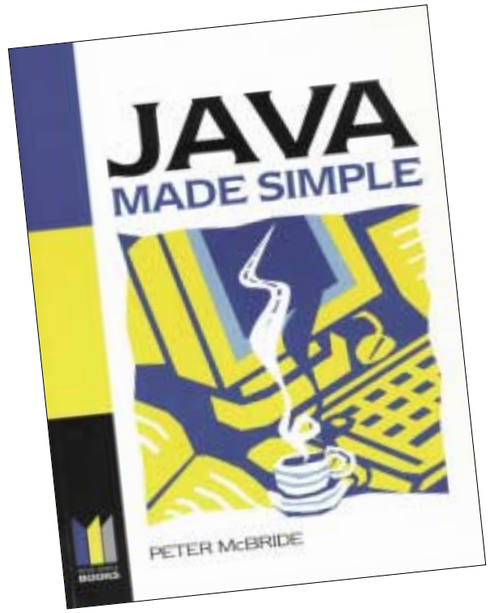
The book looks at quantum computers, theoretical machines that would be able to break any current encryption. Quantum physics also provides a means to an intrinsically unbreakable code, a method that has already be used with some success under test conditions.

This is a book about the people more than the science, even though it is written by a scientist. It looks at the issues raised by encryption, privacy versus security. The Code Book attempts to cover the history of a technical subject without getting too technical, and succeeds. It was an impulse purchase, spotted while looking for something else. I'm glad I did spot it.

Neil Bothwick A

Author:	**Simon Singh**
Publisher:	**Fourth Estate**
Cover Price:	**£16.99**
Amazon price:	**£13.59**
ISBN:	**1-85702-879-1**

"Quantum physics also provides a means to an intrinsically unbreakable code..."



Java Made Simple

Unless you study computing at university, or work in IT, there's a pretty good chance you've never taken the time to have a good look at Java. Although there are various Java tools for the Amiga such as the Jikes Java compiler and Kaffe, using Java on the Amiga is not a realistic proposition right now. This, of course, is going to change.

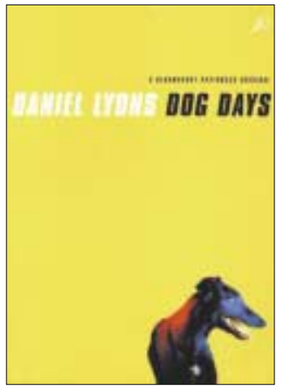
With the new Amiga / Tao alliance offering what is likely to be the ultimate Java platform, it's a must-learn language for people interested in coding for the next generation Amiga. Once you get past some of the ugly looking C++ - analogues, it's as simple to use as Blitz Basic, and a whole lot more powerful. It runs on anything, can produce applets that run in a web page and, when we get new Elate powered Amigas, will actually run at a pretty decent speed too.

Peter McBride's Java Made Simple is an annoying book. On the one hand it is well named; the explanations are beautifully well explained, the code is clearly commented and the structure is simple to get to grips with. The book takes a practical approach, expanding the breadth of detail with each chapter, and setting exercises to help hammer the lessons home. An extensive use of screenshots is unfortunately (if inevitably) PC oriented, but the information should be applicable enough. On the other hand, it is rather out of date.

Java Made Simple is too simple. This is really because it has not been updated in a couple of years, while Java itself has come some way. The book is pretty much based on Java 1.0 and misses a lot from current implementations. If you are looking for something definitive, or are an experienced programmer, this is certainly not the book for you. However, if you are relatively new to programming, or only used to higher level languages such as Blitz Basic or Amos, this book does a superb job of helping you to understand what Java can do and how it works. For someone new to Java, making their way through this book in preparation to more in-depth (and much fatter) Java books is excellent training.

Andrew Korn A

Author:	**Peter McBride**
Publisher:	**Made Simple Books**
Cover Price:	**£11.99**
Amazon price:	**£9.59**
ISBN:	**0-7506-3241-0**



Dog Days

Dog Days is to computers what Fever Pitch is to football. It's an excellent debut novel written for the geek-chic generation, mixing slacker comedy with an enthusiastic frenzy of computer industry name-checking.

The heroes of Dog Days are Reilly and Evan, a pair of Trekkie programmers living in the run-down Italian neighbourhood of Boston's North End. They are working for a large software house, developing an e-commerce application which is running way behind schedule and way over budget. They play Quake on the office network, visit Microsoft to be mocked by their engineers, discuss the new American Dream of finding the venture capital for their own Internet start-up, suffer agonies over the love of good (and bad) women, and kidnap a champion greyhound from the local Mafia kingpin.

Lyons artfully blends IT sector office politics with demented comedy to great effect. The play between the personal lives and professional careers of the characters may be pure Coupeland, but their descent from out-of-their-depth code-bashers to way out-of-their-depth dognappers on the run from the Mob is a glorious absurdism that Coupeland's Gap - wearing Microserfs would be too boring to manage, however much you might wish it upon them. Lyons himself never gets out of his depth; his prose is as convincing when he tries to portray the grace and power of Coco, the champion greyhound, as when he is writing about Reilly's pain at losing the woman of his dreams to an up-and-coming VP, or his morbid lack of faith in his own ability to write device drivers.

Between the crisp observations of desks strewn with printout, empty cans of Jolt Cola and picture of Jobs as Satan, and the high farce of the run-in with the mob, Lyons gets away with a surprisingly old-fashioned love story. Reilly's uncaring glamorous girlfriend versus caring girl-next-door love interest would be trite if you ever really had time to worry about it, but you don't. After all, he's so good at getting himself in every other kind of mess that you can believe that he'd be blind to a plot device as standard as that, too.

Dog Days is a fast paced and wickedly funny novel that manages to be an extremely well researched story about the IT industry too - if there was ever a book to read whilst sipping café lattes in a cybercafe, this is it. Highly recommended.

Andrew Korn A

Author:	**Daniel Lyons**
Publisher:	**Bloomsbury**
Cover Price:	**£9.99**
Amazon price:	**£7.99**
ISBN:	**0-7475-4056-X**

Buying on the web

If you're buying books about computers, why not purchase them via your computer?

We've listed prices from amazon.co.uk current at time of going to press, and as you can see there are decent savings to be made. To make your life easier, you can find direct links to these books, for US or UK purchasing, on our web site at www.amigactive.com.

Active Shareware

Finding MP3s without tears, handling archives *with* tears, identifying CD-Rs and a great way to download...

With the current boom in home CD creation, Andrea Vallinotto's IdentCDR is a small tool that can give some invaluable information about a specific disk without all the hassle of having to load up your mastering software. IdentCDR's main purpose is to identify the brand and type of the media currently in your drive, which some may, or may not, find useful.

What is more useful is the extra information learned, such as whether the last session is closed or not, and whether the media is writable or rewritable. By using the "INFOS" tooltype, extra information such the software used to create the disk, the publisher, copyright and abstraction can all be seen in a Reqtools requester on your Workbench. So if you are one of the new 'burning' brigade, this little tool could be a Godsend.

Above: IdentCDR's ample investigation of a recordable CD.

Above: Archiver. Wonderful, if you like that sort of thing.

Based on the MUI GUI system, the interface offers support for most of the common types of archives - like LHA, LZX and ZIP - via the unarchivers usually stored in your C: directory. When started, it will scan for these programs and offer the use of the ones it finds, ghosting out archivers it cannot locate.

Although not a new concept, GUIs do offer many advantages over the command line interfaces usually associated with programs like this, but you have to find the right one, which unfortunately Archiver is not. While the use of MUI is becoming more common for all types of applications, the need to exploit it fully is even more essential. Archiver doesn't offer any drag'n'drop of archives into the GUI, which it really should support via a set of internal filetypes to recognise archives automatically. The options could then be offered depending on the facilities of that particular archiver. Instead, the GUI is arranged using pages, one for each program, and this makes it rather messy and uncomfortable to use. There are some defaults defined and most are sensible, apart from the text reader which is defined as "Most," a reader obviously favoured by the author. "More" would have been a much better default - chances are you'll have to change this before continuing to use Archiver.

Such a simple program as this doesn't really need Hothelp, but it is something that all MUI applications should support. Sadly, Archiver (again) is lacking in this respect. The Amigaguide documentation is difficult to read and one of the links is broken resulting in an 'Unable to load' error. Also, it would benefit from the guide being split into English and German versions rather than being combined as it is now, making it hard to follow. Archiver does come with a version of the executable to suit virtually any processor, although a program of this nature really only needs an '020 version rather than the five different compiles included in the archive.

In its defence, Archiver works, and does get the job done and includes a comprehensive ARexx port to allow remote control, but really does need some more time spending on it. The author does mention in the documentation the fact he has spent a year on it already, so perhaps we'll have a while to wait.

"Trying to download stuff from different sites on the Internet can sometimes be a real pain."

Archiver

If you don't use Directory Opus Magellan, with its very clever built in archive handling that allows drag'n'drop unarchiving and viewing, chances are you'll be using some sort of GUI to handle these mundane tasks for you, although you are not spoilt for choice. One of the latest offerings in this department is Archiver by Jurgen Spath.

GoFetch!

Trying to download stuff from different sites on the Internet can sometimes be a real pain. Wouldn't it be nice to have some sort of automatic download list? Well, guess what - you've got one! GoFetch is an FTP and HTTP tool that will allow you to enter the site details and pathnames for files you want to download, and it will go away quite happily and get on with it. Not only that, but author Ian Chapman has implemented some extremely good ideas to save a lot of hair pulling. For instance, it will fully support FTP Resume, so you can hang up the phone part way through a download and when you reconnect, GoFetch will carry on quite happily continuing the file. This can be very useful for some of those larger files found on some sites. Also planned for a later release is an implementation of HTTP resume, so no matter which way you download, stopping will no longer be a problem - provided the server supports resume, that is.

Above: The outrageously useful GoFetch! downloads stuff while you work.

"GoFetch uses a rather well designed MUI interface..."

GoFetch uses a rather well designed MUI interface, which is arranged into Main, Profile History and Preference sections. Main is where all the important stuff happens, while the Profile History is really just to tell you what you've downloaded in any one session. The Preferences section is rather simple, with only your anonymous password (usually your email address), default download directory, log screen and completion beep settings to select.

Operation is reasonably simple: clicking 'Add' in the main window lets you enter in new site details, and these can be pulled in from your profiles by clicking the down arrow gadget in the center. Once you have configured the server, path, filename and password/login settings (usually most servers, especially Aminet, will accept anonymous logins) you can click OK to return to the main window.

You can enter in as many sites as you need, one for each file, and next time you connect up to your Internet account, GoFetch! will start to work its way through the list. Having to enter a separate entry for each file is a little tedious, and some way of setting a list of partially filled sites may be better, especially for people who spend lots of time trawling through numerous Aminet downloads. Having to keep entering Aminet server details gets boring. In essence though, GoFetch is an extremely good idea, and one which, I'm sure, will be improved upon.

Included in the distribution is a collection of ARexx scripts that, in various ways, collate information from various sources and enter it as profiles in GoFetch. A particularly nice one is the YAM script, which allows clicking on an FTP site name in any mail to define an entry in GoFetch's profile list. As the profile list is purely an ASCII text file, I'm sure there will be numerous innovative ways people will find to integrate with GoFetch. If you are a download freak, this offering is for you.

Simon Archer A

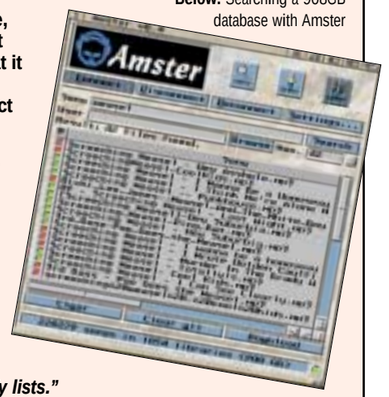
Amster

It's not small and it's not furry!

A strange name for an application of this type, and it certainly doesn't describe the genre that it belongs to, but then neither does the correct title of an 'Amiga Napster Client'. *"What's one of them?"* You ask. Read on and find out...

"Napster,"* says the documentation, *"is an MP3 sharing community using a special client that features things like chatting, searching, downloading and notify lists."

Below: Searching a 908GB database with Amster



With the recent news of the merger between Thorn-EMI and AOL-Time-Warner pushing MP3 as an Internet standard and many music publishers already endorsing the standard by releasing music purely in MP3 format, it comes as no surprise that you would need some way of finding and downloading such files. This is where the Napster community steps in. Amster is a MUI based version of the Napster client for use by Amiga users that wish to find, download and play music in MP3 format... easily.

"...find, download and play music in MP3 format... easily."

Loading up the interface, you are greeted with a GUI that doesn't look totally straightforward to start with, but soon becomes familiar. The program is configured to automatically connect to the optimum server for your location, eliminating bad download times, so you need only a simple click on Connect to start the ball rolling. Providing you are online at the time, Amster will find and connect to a server, and from there you can spend many hours searching the hundreds of freely available music tracks and demos. In the string gadget labelled 'Song' you can enter song titles, or part of, and the program will search for all titles that match your search criteria. Any MP3 files that may be in the database at the time will be shown in the list below, and the speed of connection shown by the coloured lamp in the left hand column, with green being the fastest, and helping to cut download time to a minimum. Beware, however, as most song tracks, even at only 3 minutes, can be over 3MB.

That really is all there is to Amster. There are a few little niggles - it's only up to version 0.4. The chat facility has yet to be implemented, and changing the username and password from default seemed to stop the ability to log into a server, but apart from that, this is an extremely handy program for all Internet music lovers. Provided you've got a pretty fast connection, or plenty of money, of course.

Directory Opus Magellan

Opus Magellan has a wealth of features, but some of the best ones aren't immediately obvious...

Directory Opus Magellan II is an extremely powerful program, and with that power comes an inevitable complexity. It's also a bit of a mouthful, so we'll call it Opus from now on. While Opus can be as easy to use as you want, the range of options available is huge. This can make configuring it to do what you want in the way that you want a little daunting at first. This Masterclass is not intended to be a replacement for the Opus manuals, more a supplement showing some of what is possible, and how.

"While Opus can be run as a standalone file manager, it only shows its full worth when used as a Workbench replacement..."

While Opus can be run as a standalone file manager, it only shows its full worth when used as a Workbench replacement (WBR). We will assume that is how you are running it. To convert an existing installation to WBR, run the installer again and choose the Workbench replacement option.

Program launching

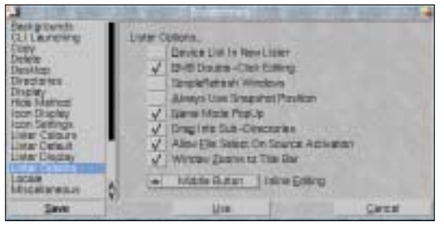
If Opus is to replace Workbench, the first thing it must do is to provide a way of starting programs. In fact, it provides at least five different methods. Double-clicking an icon runs the program in the same way that Workbench does, but there are other choices. Button Banks, User Menus and Start Menus all do the same thing, using similar internal methods but with a different user interface. A button bank takes up screen space for each program, but is the fastest way of starting commonly used programs. User Menus are less convenient but use no screen space, making them ideal for programs you run less often. Open the Menu Editor, select Add from the left hand button set and type in the menu title. Now drop icons onto the centre listview to add items to that menu, then press save.

You probably don't run Workbench preferences programs very often, but when you do it requires at least six mouse clicks to find and run one, more if you have to scroll windows. Add a menu called "Prefs". Open the Prefs drawer, select all of the icons and drag them over the Item listview. When you release the mouse button, Opus will create a separate menu item for each one. Press Save and you have a User menu to launch any of your preferences programs, all from a single mouse click.

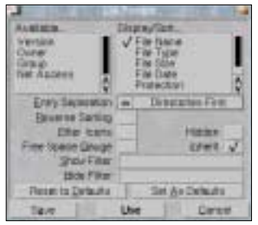
Listers

Listers are central to Opus, in the same way that windows are central to Workbench. Each lister can operate in any of three modes. Icon mode is equivalent to the "View by Icon" mode of Workbench. Name mode is similar to the traditional file manager display - each lister contains a text list of a directory's contents, with a toolbar across the top. Icon Action mode is a hybrid, displaying the files as icons but with the features of a Name mode lister.

A lister does a lot more than simply display a list of files, particularly in name mode. Click the right mouse button over a file's name and you get a popup menu, the contents dependent on the type of file. You can click on a file's name with the middle mouse button to rename it, or change the date, comment and protection bits in the same way. This is much faster than using the rename requester for single files. However, the rename requester allows you to rename a bunch of files in one go. Select a number of image files and open the Rename requester. Type *.iff in the top line and *.ilbm at the bottom. Any file with an .iff extension will be renamed to .ilbm. This works with any pattern, not just extensions.



Above: More alternatives for Lister display than you can shake a very large stick at.



Above: Double-click the RMB to set the layout of an individual lister.

Button Banks, Menus and Start Menus

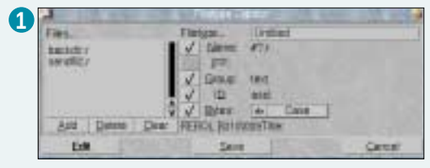
A button bank gives instant access to commonly used programs. Previously, each button could perform three separate actions, one for each mouse button. Later versions of Opus removed the three-item limit. The first three actions are still performed with the left, right and middle buttons respectively (if you have a two button mouse, hold the shift key and left-click to get the third item). Hold down the left button for a second and a menu will popup with all actions for that button. This means you can have instant access to a large number of programs from a small number of buttons. A Start Menu takes this a stage further, allowing three levels of menus from a single button. The idea may have been lifted from Windows, but it has two major advantages: It is far easier to work with and it doesn't require Windows.

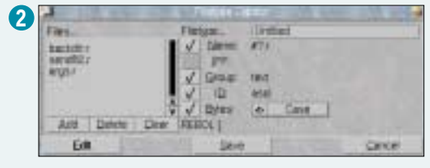
By default, button banks and start menus have drag bars, so you can position them easily. But once you have your buttons set up as you want, a drag bar is unnecessary. However, as you access the bank's configuration by pressing the RMB over the drag bar, what happens when you want to edit the button later? Hold the control key while pressing the RMB to open the control menu for a button bank or start menu.

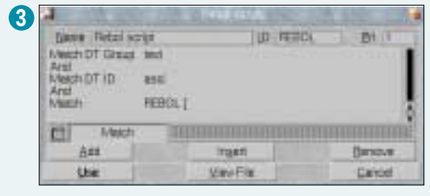
"A lister does a lot more than simply display a list of files..."

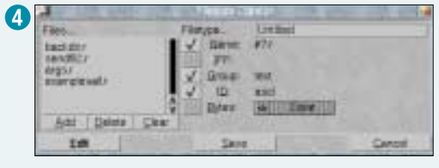
Above: Just one way of laying out a Workbench screen. Icon priorities are used to ensure that drive and left-out icons appear down the left of the screen, while AppIcons run along the bottom. The toolbar at the top provides access to the most used programs, while the StartMenu below gives instant access to the most used directories. There is another Start Menu, hidden behind the open one.

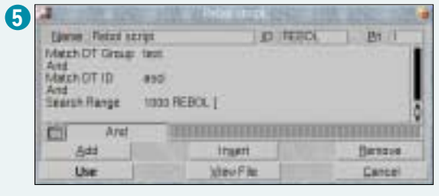
Creating a Filetype...











Five easy steps to filetype recognition.

1 Here we have a couple of Rebol scripts in the Automatic Filetype Creator. Scripts can be fairly hard to identify, because they are basically plain text. Filename extensions can sometimes be used, but matching on contents requires some a care. By only choosing two scripts, we are in danger of picking up on features common to these files, but not all Rebol scripts.

2 Adding one more file causes the Bytes match to change. This is a pretty good match, as adding a few more scripts doesn't change anything.

3 Here is the filetype we get based on these scripts. The last line is looking for the string "REBOL [" at the top of the script, but Rebol allows comments to be placed before the "REBOL [".

4 Now we've added another file to the list, one that starts with comments. The Automatic Filetype Creator can no longer match on bytes at the start of the file, so we have to work this part out for ourselves.

5 Every Rebol script must contain the string "REBOL [" before any commands. There are two filetype matching commands that will find it. "Search For" scans the entire file for a string or sequence of bytes. This is fine for a Rebol script as the string will be near the start, but what if you have a large text file? It would take a lot longer for Opus to scan a huge text file only to find it's not a Rebol script. "Search Range" works in the same way as "Search For" except it only scans the number of bytes given as its first argument - 1000 bytes in this case.

"There are over 450 filetypes on the AACD this month, but don't be tempted to install every single one of them."

From here you can edit the functions or appearance and save changes. There are other shortcuts: Shift-LMB toggles the drag bar on and off, and Alt-LBM on an individual button opens the Button Editor for that button. Don't forget to select Save Layout from the Settings menu to snapshot your button banks and start menus. This will also snapshot any open listers to open them the next time Opus starts. The toolbar at the top of each name mode lister is a form of button bank and is edited in the same way.

Filetypes

Opus is able to recognise virtually any type of file and treat it accordingly. Filetypes are defined externally, although there are a few internal definitions too, so you can add any new files you encounter. There are over 450 filetypes on the AACD this month, but don't be tempted to install every single one of them. Forcing Opus to check each file against 450 possibilities is a sure way of slowing it down. Put the filetypes you are likely to use in DOpus5:Filetypes and put the rest in DOpus5:Storage/Filetypes.

Sometimes you'll come across a file that doesn't match an installed filetype. Opus has a command to check against the filetypes in storage, and another to create new filetypes based on selected files. The easiest way to use this is first to create a general filetype by hand. Select Filetypes from the Settings menu and click on Add. Set the filetype up as:

```
Name: All
ID:   All
Pri:  -126
```

Add three criteria to the definition list:

```
Match *
Or
Directory
```

Click on Use and you have a filetype that matches everything, since everything you can display in a lister is either a file with a name matching "*" or a directory. Now click Edit, followed by the Add button below the Icon Menu list. Type in a suitable label, like "Find filetype". Click on Add, set the cycle gadget to Command and press the folder button next to it. This will give you a list of internal commands - choose FindFileType and press the various OK, Use and Save buttons to get out of the filetype editor. Open a lister and press the right mouse button over a file's name or icon. You should see a menu pop up, with "Find filetype" as the bottom item. If you don't get the menu in Name mode, select "Name Mode PopUp" in the Lister Options section of Environment Settings.

Select the new menu item for a file and the Filetype Finder will open, showing all filetypes that match the file. Filetypes without a tick are currently in Storage. If Opus finds a filetype in Storage with a higher priority than the current match, you will be given the option of installing it. Other options include editing the filetype and creating a new one. When you call CreateFileType from the finder, it only has one file to inspect. The filetype creator has no way of knowing which parts of the file are typical of all files of this type. The solution is to drop more files of the same type onto the window. The filetype creator will select any common attributes, from which you can choose.

A word of warning - don't use the file name unless absolutely necessary - eventually you'll encounter a differently named file. If it picks up a match on a datatype, it's usually best to stick with that. Press Edit to open the filetype editor, give the filetype a short ID string and set its priority. The datatypes system is also useful for recognising files (see the boxout on page 38 for a step by step example).

Once you've installed or created a filetype, you need to do something with it. The usual first choice is to configure a double-click action. Open the filetype editor, either from the Settings/Filetypes menu or with the Edit button in the filetype finder. Select Double-click from the list on the left and press Edit (or simply double-click double-click!). This opens the standard Function Editor, used many times in Opus and covered previously. Set this to call whatever commands you prefer to deal with this type of file.

Filetypes have priorities. If a file matches more than one filetype, the higher priority will be given precedence. For example, you could have a generic Picture filetype using "Match DT Group pict" and a double-click action using Multiview. Then add a specific JPEG filetype that uses the same and "Match DT ID jfif" and calls Visage as its double-click action. If the first filetype has a lower priority, a double-click on a JPEG will show it in Visage, while other pictures will use Multiview. It also means that any popup menu items defined for the generic picture filetype would also apply to the JPEG one. You could add menu entries to load the file into PPaint or ImageFX, without having to repeat the process for each picture filetype you use.

You may also want to add a Drag and Drop action to the "All" filetype created earlier. The internal default of drag and drop is to copy a file in name mode, whereas icon mode and Workbench both move a file is source and destination windows are on the same partition. Setting up the Drag'n'Drop action:

```
Command    Copy MOVEWHENSAME
```

will cause name mode to behave in the same way, and because the "All" filetype has the lowest possible priority (-126), this will not interfere with any filetype-specific actions you may already have.

Neil Bothwick A

Looking Good

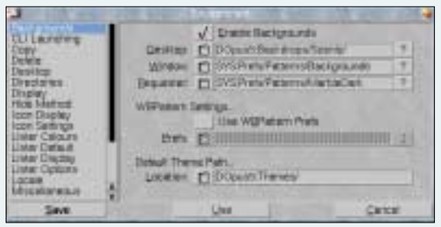
If you're going to spend a lot of time using your Amiga, you want an environment that pleasing to work with as well as being effective. Opus has many options for altering its appearance. Backdrops for the Workbench, windows and requesters can use any image recognised by your datatypes. Workbench images can be tiled, centred or scaled to fit the screen. However, scaling the same picture each time you boot is a waste of time.

Load each image into an image processor and scale it to the correct size. Not only does this save time, it also gives better quality. If you give a directory instead of a filename for a backdrop, Opus will choose an image at random from that directory. You should set the Workbench WBPattern preferences to a plain pattern. If you have an image here, IPrefs will load it even though it's not displayed, wasting time and memory.

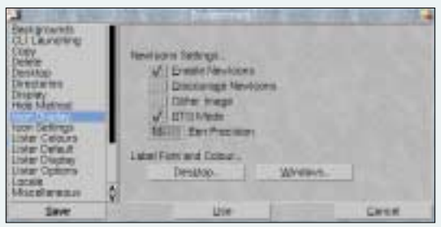
Fonts can also be changed. Unlike Workbench, the icon text for disks, other icons and name mode lister can be set independently. Themes allow you to change the overall appearance by changing many visual elements at once. There are several on this month's CD, and next month we'll look at how to make your own.

Icons are another key element of any Workbench set-up or replacement. Opus supports the various icon formats and offers a few extra features, such as the ability to split the icon text onto two lines if it is significantly wider than the icon image. Filetypes can have icons, giving a default icon for each type of file. With the Disk filetype, the Override option means your icon is used even if an icon exists on the disk.

There are few icon shortcuts you can perform using a combination of the mouse and keyboard.



Above: Choosing files or directories for backgrounds. Make sure you don't have a background saved in WBPattern.



Above: Overall Icon display settings are changed here. The NewIcons section is ghosted because I'm using OS 3.5.

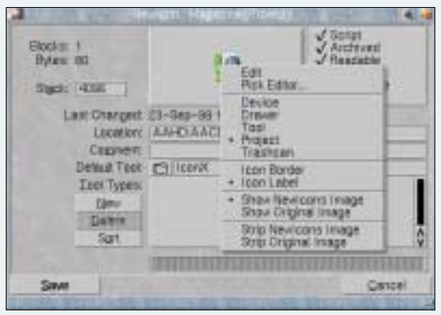
"...Opus will choose an image at random from that directory."

Hold shift while double-clicking a drawer icon to open the new drawer and close the current drawer. Hold alt and shift while dropping one icon on another to copy the image from the first icon to the second. All position and tooltype information remains unchanged, only the image is updated. You can also do this from the Icon information window, but the first method is much faster. Hold shift and press the RMB over a selected disk icon to remove it from the Workbench. It will stay hidden until you reboot or remove it from the hidden drives list in Environment/Desktop.

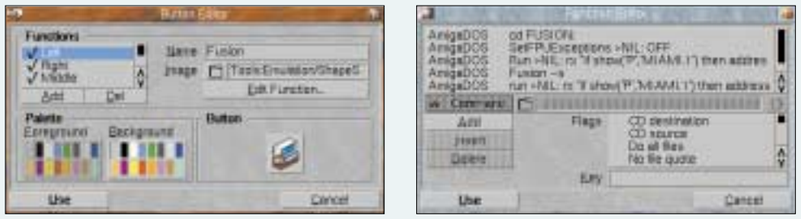
Hotkeys and Scripts

If you're thinking, "he said there were five ways of launching a program but only mentioned four," here's the fifth. When creating a function for a menu or button, you can assign a hotkey to it. You can also create hotkeys separate from them. One reason for doing this is that menu/button hotkeys only work when an Opus window is active. Separate hotkeys can be global.

Scripts are executed whenever a particular event occurs. For example, the default setting opens a new lister containing a list of devices when you double-click the Workbench background. If you would rather Opus did something else on a double-click, change it in the Scripts Editor. Sounds Events are a particular case of scripts - instead of using a script to play a sound when an event occurs, a Sound Event will play it directly. You'll soon get tired of a sample playing each time you open or close a lister, but sound events are a good way of letting you know when a slow action has been completed.



Above: The Icon Information window can copy icon images by drag and drop. It can do far more, like changing the type and display of individual icons.



Above: Setting up a button image, and the function to run from it.

Creating functions

When you create a button or menu item to launch a program, you are creating a function or set of functions to be run when that menu or button is selected. For program launching, this is normally a single function, but it is possible to create more powerful buttons and menus that call a list of functions. This gives you a drag and drop script builder - much easier than trying to do the same job with DOS or ARexx script.

An example of a more complex function set is the Initialise option in the popup menu of the AACD filetype (in the CDTools/DOpus drawer of the CD or check the Opus settings/filetypes menu if you have it installed). This option executes the Welcome script without loading the HTML front end, but the script changed for the introduction of AutoRun on AACD04, so it needs to be called with different arguments depending on the CD. This is achieved by an AmigaDOS script written as a set of functions:

```
AmigaDOS   cd {Qa}
AmigaDOS   set aacdcd `cd`
AmigaDOS   if $aacdcd ge "AACD04:"
AmigaDOS   execute Welcome QUIET=YES
AmigaDOS   else
AmigaDOS   execute Welcome NOHTML=YES
AmigaDOS   endif
```

{Qa} is replaced with the name of the object calling the function script. In this case, it's the device name (CD0: or whatever). To get the actual disc name, the next line uses CD to set a variable - if you use the CD command without arguments, it returns the name of the current path. Then it uses standard AmigaDOS script commands to decide how to call Welcome.

Internal commands are handled differently from the four external types; they are executed before the others. Try creating a button or menu entry with this function:

```
AmigaDOS   Wait 10
Command    Beep
AmigaDOS   RequestChoice "Test" "All done" "OK"
```

You would expect it to wait ten seconds, beep and then display a requester. In fact, the Beep happens first, then Opus builds a script containing the external commands and executes that. The solution is the FinishSection command, like this:

```
AmigaDOS   Wait 10
Command    FinishSection
Command    Beep
AmigaDOS   RequestChoice
"Test" "All done" "OK"
```

Any time you want to use an internal command after an external one, place a FinishSection between them. Any function that makes external calls creates a temporary script in T: that is deleted as soon as it finishes. If you are having problems with a function and want to see exactly what Opus is doing, add the following to the end of the function to make it hang around long enough to read it:

```
Command    FinishSection
AmigaDOS   Wait 1 min
```

That's all there is to it!

Next Month...

It's impossible to cover everything in one go, so next month we will take a look at some other features of Opus, such as:

- **Program Groups**
- **ARexx scripts & modules**
- **FTP**
- **Creating themes**
- **Sound events**

Play Neutrino!

Something very, very wicked this way comes...

If you read the interview with QNX Software Systems Ltd.'s Dan Dodge in the article on Phoenix and the Neutrino operating system at the front of this very magazine (see page 10), you would have read something rather jaw - dropping that he casually mentioned as if in passing. I'll repeat it here, because it deserves repeating - *"We have already obtained source for Quake 3 Arena and Unreal Tournament. The ports took a few days each."*

"...the best two first-person shooting games on the planet are running on Neutrino, NOW. We simply couldn't resist..."

"This is state-of-the-art gaming. No more need be said."

Yes, you read that right, the best two first-person shooting games on the planet are running on Neutrino, **NOW**. We simply couldn't resist the opportunity, so welcome to the first ever Neutrino-themed *Active Gamer*. No, these aren't going to run on your 68k, AGA Amiga, but when QSSL promise us an Amiga-like next generation Operating System and it runs games like these, who are we to argue?

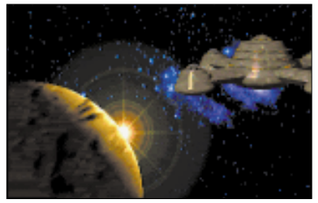
UT and Q3a (as they are commonly termed) are the games currently taking the gaming world by storm. Based on the older Quake and Unreal titles, these latest versions contain some of the best 3D games engines around, and lead the field in player vs. player gaming. Both are arena games aimed at Internet play, but both titles also have some very sophisticated "bots", computer controlled players with clever pseudo AI routines, which make them very playable in single player mode too.

This is state-of-the-art gaming. No more need be said. Just look at the screenshots, and smile.

Andrew Korn A

NAME: SPHERICAL WORLDS
DEVELOPER: 4MATTED
SUPPLIER: ALIVE MEDIASOFT
TELEPHONE: +44 (0) 1623 467579
COST: £9.99
WEBSITE: www.alive-mediasoft.co.uk

Spherical Worlds



Above: The animated intro - AGA, but probably the best part of the game, graphically speaking.

Spherical Worlds, as the name doesn't imply, is a two-dimensional adventure in which you take control of a spherical droid whose mission it is to roam the various sectors of a space station.

Quite why isn't clear - there are no printed instructions, and the only "readme" included on the CD merely talks of 68040 data caches and other technical gubbins. There is a brief animated intro to the game, but it doesn't really help to explain matters, so getting stuck in is the order of the day.

On loading the game, you are presented with just two options: Start Game or Enter Teleport Code. The game itself is fairly slow going - your spherical battle droid has to skid about a derelict space station, avoiding holes, sliding over ice, shooting other little robots and things, while searching for the exit to the next level. On level two, it gets harder... droid builders scuttle about, seemingly with a death-wish to collide with you and explode. Avoiding them (and other obstacles) is sometimes a hit-and-miss affair, but most usually a "hit" as you find your battle droid unable to turn quickly or accelerate away from danger.

There's not much in Spherical Worlds to get you hooked - yes, you can upgrade your weapons and you get to do all sorts of exciting things like use teleports and collect keys - but the graphics are small and uneventful, as is the gameplay. It's okay in a sub Alien Breed 1 and 2 sort of way, and there are a few marginally distracting moments, but it doesn't hold your attention for long.

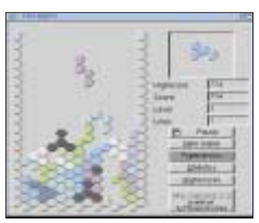
David Stroud A

Spherical Worlds

SUMMARY: **A 2D adventure which sadly fails to inspire.**

NAME: TOTAL TETRIS
DEVELOPER: VARIOUS
SUPPLIER: EPIC MARKETING
TELEPHONE: +44 (0) 1793 514188
COST: £10
WEBSITE: www.epicmarketing.ltd.net

Total Tetris



Above: Hexagons puts a slightly different twist on Tetris, whilst Spelltris (**inset**) tries to be that little bit too different for its own good.

If you've heard that a game called Tetris used to be popular, this CD should confirm it. It's a dual-format disc, containing both Windows and Amiga versions of Tetris in all shapes and sizes.

Yes, from WBTris to RobocopTris via WormTris and HexTris, if you've heard of an obscure Tetris clone but never been able to find it, chances are it's on this CD. There are a lot of poor attempts included in the collection (not that there's much incentive to leave some out when you have a whole CD to fill with Tetris clones) but there are others which deserve more than a passing glance.

Hexagons is a cunning twist on the original which uses hexagonal rather than square tiles to make up the falling pieces. 6Tris allows you and five mates to battle it out in perhaps the ultimate multiplayer Tetris (barring the advent of a TCP/IP networking version taking the whole world by storm) and TetrisPro is one of the more polished versions, which I seem to remember soaked up a good few hours of my time when it first popped up all those years ago.

Unless you 're a major Tetris freak, this CD could be considered a novelty rather than a must-have. More casual Tetris players will probably be happy just downloading one from Aminet. If your joystick needs a workout and your reflexes are slowing up (or you just can't get enough retro gaming experience), your tenner could be well spent on Total Tetris.

David Stroud A

Total Tetris

SUMMARY: **Good value collection for total Tetrisheads.**

NAME: WHALE'S VOYAGE 2
DEVELOPER: NEO
SUPPLIER: ALIVE MEDIASOFT
TELEPHONE: +44 (0)1623 467579
COST: £19.99
WEBSITE: www.alive-mediasoft.co.uk

Whale's Voyage 2

Clearly, one outing for the Whale wasn't enough...

All aboard! You are now a crewmember of the Whale. This fine ship is destined to travel the stars, visiting planets, wheeling, dealing and fighting off pirates (well, running most of the time actually). You are about to endeavour to become the richest in the Galaxy... well, after you un-DMS the game onto five floppy disks if you want to save your game.

Now I'm ready to become the Kingpin of the Universe. Well, I would be if the documents for Whale's Voyage 2 were included on the CD. Alive insists that the documents were only missing from the initial run of CDs, but they weren't forthcoming after weeks of promises, so it's a good thing that WV2 is reasonably easy to figure out, thanks to its amalgamation of a number of classic gaming pretences (trading, RPG, turn-based battles) and the similarity to Whale's Voyage 1.

Wonders of Creation

Before you become the ruler of the known universe, you must create your four-man crew. As with many other RPGs, this is a matter of random stats. Next you choose the character's main drawback (we all have them), such as 'pomposity', 'clumsiness', and 'spending-mad'.

This is an excellent idea that provides an extra dimension of strategy throughout the game - you wouldn't want to send the spending-mad crewmember onto a planet to go shopping, would you? Finally, you send your players to university, where they'll probably spend most of their time getting drunk and chasing women (or aliens). In theory, they are there to learn their advanced skills.

Then you get to the game proper. The screen shows the bridge of the Whale, comprising of a central screen and icons for Telephone, Select Planet, Leave Whale (once you're on a planet), Extras (fuel, etc.), and Goods (buying and selling). Available funds are also displayed, and the communication window in the top left is where your employers get in touch with you to offer jobs, deals and so on. It's all a matter of balancing your finances, investment and resources in a very open-ended financial strategy game.

surrender (never! Damn... okay) and you'll be treated to a few turn-based bouts of tense death-defying battle wonder (I wish). Great. That was fun. Not.

Beam me up! Please!

Beam down to a planet and a 3D world awaits you - kind of. The graphics of this section are absolutely deplorable. Textures may vary slightly from planet to planet, but the view from your eyes is some twisted vision of Wolfenstein interbred with 3D Pacman. I applaud the programmers' vision, but not their execution. This becomes even more laughable when you see the denizens of these worlds, who are just cardboard cutouts that literally moonwalk around. They all seem to be modelled on firing-range dummies because practically all carry a weapon.

"Beam down to a planet and a 3D world awaits you... kind of."

But hey, graphics and animation are but one aspect of any game. Other things are more important, like gameplay. Unfortunately it's not awe-inspiring here either. There's plenty to explore - you can enter rooms through doorways, buy and sell goods and meet your contacts, all of which is quite logically controlled via the mouse and action icons for each of your characters. You can liven it up with a fight, but I tended to get thrashed all the time, despite four-to-one odds, which in a night-club environment would be a no-loser. Maybe there's something I'm missing in the documents after all, or maybe I just kept stumbling across planets full of real hardcases.

All in all this is a good game if you get all gooey over financial management, but that's about the only interesting aspect.

Gary Storm A

Whale's Voyage 2

SYSTEM: AGA, CD-ROM

SUMMARY: **An overpriced trading / management game with space combat (cough!), and 3D exploration sections thrown in - unfortunately the additional sections would have been better thrown out.**

NAME: VULCANOLOGY
DEVELOPER: VULCAN SOFTWARE
SUPPLIER: WEIRD SCIENCE
TELEPHONE: +44 (0)116 246 3800
COST: £4.99
WEBSITE: www.weirdscience.co.uk

Vulcanology

It may not be triple-A, but 10 games for a fiver must represent quite a bargain, surely?

Vulcanology is a compilation disk representing the first three years of Vulcan Software's output. As such I have rather mixed feelings about it. Vulcan started off well with the big selling overhead talky adventure game Valhalla, but went on a downward slide from then. Increased ambition and a few years experience eventually saw them launching some real quality titles on CD-ROM, but Vulcanology is a collection of their older, disk-based games. Arguably, it could have been called *"The worst of Vulcan,"* which is not a good place to start.

I approached this disk with much trepidation. Just reading the contents was enough to bring me out in a cold sweat - I just don't want to be reminded of that awful time a few years back when Amiga gaming was synonymous with the likes of Burnout and Tiny Troops.

Vulcan became the biggest company in the Amiga market by default - all the big boys had gone, and that was all we had left. Amiga gaming went backwards - the graphics were worse, the gameplay less innovative and less fun. It was a painful era when all the magazines forced themselves to dole out vaguely acceptable scores in the vain hope of making things "okay."

too realistic) flight sim, ruined by a slow engine - you get about the same performance on an '060 machine as an '020 gives with the old Microprose classics such as F-15 and F-19). Hillsea Lido is a Theme Park style management game with very linear gameplay and ugly graphics. Somewhat better in a modest way are the Lemmings-like Timekeepers 1 and 2, and platformer Bograts, although I could not persuade this latter title to work on my machine.

Most games require no more than dragging the appropriate drawer to the hard drive, and some run straight from disk. I needed to boot with no startup sequence for a couple, but on the whole the compilation is extremely straightforward. The low quality of some titles is offset by the really rather good fun Valhalla games *(it's a gem! - Desk Ed.)*, and while you may find that the demos of Odyssey and Genetic Species get more play time on your machine than some of the full games, the fact is that you get an awful lot for your money. Forget any bad memories you may have - for five pounds you can mark the bad titles down to nostalgia and consider the rest of the collection to be great value for money, and a worthwhile addition to any Amiga gamer's collection.

"Forget any bad memories you may have..."

Refreshingly cheap

Time passed, the Amiga games market got itself a new lease of life, and games like these were banished from the pages of games magazines to make room for genuinely good games like Napalm, Quake, WipeOut, Wasted Dreams, Foundation, and even Vulcan's own Odyssey and Genetic Species. Now that we can look back on that brief era of horror, and purchase pretty much the lot for the price of a couple of pints of refreshingly expensive beer, the whole thing doesn't seem half as bad.

Most of the games on this compilation are the sort that you will load up once, play with for an hour and then put down. Tiny Troops is a simplistic and limited variant on Dune 2, cursed with blocky and badly coloured graphics. Burnout is a top down car crashing game, pure PD with a polish (if you can bear the interlace), but totally lacking in depth. Jet Pilot is a fairly ambitious and realistic (possibly

Don't talk back!

The stars of the collection are without doubt the Valhalla series, the rather charming adventure games that made Vulcan. The graphics are somewhat simple but full of character, the puzzles are pretty well balanced, and overall they are actually pretty good and rather charming fun. Having said that it annoys me to be told *"You KNOW what that is!"* when trying to identify a squiggly inventory graphic that Vulcan erroneously assumed would be self evident.

Compared to the oft-painful installers these games originally had, the current format is bliss.

Andrew Korn A

Vulcanology

SYSTEM: CD-ROM, others vary for individual games but at most 6MB and AGA.

SUMMARY: **The Valhalla games are good fun, the rest distinctly average - but at a fiver this is a rock solid bargain.**

Contents

Interactive

Your chance to pester the Editor! Write to: Amiga Active Magazine, 3-11 Spring Road, Bournemouth BH1 4PZ. Or, if you enjoy the pleasures of being online, send your e-mails to us at **interactive@amigactive.com**

Art of Games, revisited.

Damn what a fine piece of writing, very thought provoking, at the end of it you have to ask the long asked question of What is...?

What is art? Truly, art can be anything created by a human, perhaps even a living or unliving thing. Something that appeals to us in more than a superficial way.

In that case, I feel computer games can be called art, it just happens that a lot of games are really bad art, or having not been analysed may not be seen as art.

In fact, games are perhaps more art than Art itself, as they give the observer a chance to interact with the medium, either in a controlled or uncontrolled way. I think to look at games in this way we should look at the currently accepted (well almost) ideas of computer art, William Lathams work with Organic Art, other attempts. The Macintosh based "Nirvana Engine" and a few other similar tools create an image or form of art from the input of user - these are more accepted by the art world but where do we draw the line?

Andrew Robson.

I disagree with one part of your initial description - I think that art isn't simply defined by its appeal or effect on us, but must also imply a conscious attempt on the part of the artist to provoke a response. We can be as moved by a random assortment of clouds as by a painting or symphony, but the wind is not an artist.

The question about interactivity is a very interesting one, and something I would have dealt with in the article had it been longer. Can something participatory be art? I think so, because the artist defines the limits of that participation, and thus creates a response - a flexible one, but a response none the less. Some people would argue that if the viewer determines the course of the experience then it cannot be Art, but I feel this is a rather elitist attitude. The playwright Berthold Brecht always talked about there being a "fourth wall" to the stage, the wall between actors and audience, which he believed distanced the audience from the message. Much of his work was concerned with trying to break down this fourth wall.

As for the matter of acceptance, you are of course right. Why should Nirvana Engine get any more interest than Colourspace, the program Jeff Minter developed 15 years ago? Presumably because one was created by a Japanese artist who knew how to talk the talk, while the other was written by a scruffy Welsh hippy games coder.

Photoshop, Photoshop.

Thank you for a super magazine, the layout and quality is very professional. I enjoy your reviews and masterclasses and of course, where would we be without the letters and problem pages>? Could you possibly consider a tutorial on digital photography/art especially using image FX and Photogenics, scanners and video? I get fed up reading about how do it using Photoshop in other mags. I would be particularly interested in the 'layers' function of image FX for creating photographic art rather than anims.

Ivan Jacob.

"...games are perhaps more art than Art itself, as they give the observer a chance to interact..."

THE FUTURE OF AMIGA CLOTHING...

AA

Here at Amiga Active, not only are we intent on bringing you the latest and best Amiga news and reviews, we think you should have access to the best Amiga clothing too. Each month, as from this very issue, the best letter we receive - the one which makes us laugh the most or think the hardest - will win its author an Amiga Active T-shirt. If the lucky star (above) makes an appearance next to your letter, you can expect one in the post shortly afterwards.

Note: You must include your postal address when you write to us to be in with a chance of winning.

"As for Bluey, he eats pretty much who... I mean WHATever he wants."

When a Mac magazine writes a tutorial based on Photoshop, they pick the most popular package but hope that the basic techniques will be applicable to other packages. Obviously it's a lot more useful to people who actually do have Photoshop.

We have approximately the same problem. If we talk about layers in ImageFX, then people who use FXPaint, Photogenics or Art Effect are going to be a little left out. I don't think being too package-specific is very clever. On the other hand, layers in general are and would certainly make an excellent subject for a masterclass - we'll do one as soon as possible.

Dogs, clones & toys.

As per standard procedure, the mag is groovy and well informative.

But it raises the question: Is Andrew Korn a clone?

I put it to you that there is not enough time in the day for one man to write so many articles and still have time to be on the AA mailing list. I suspect some of the clones are based overseas as I have noticed emails with time relating to the early hours of the morning. Or daytime in Ohio.

What about Neil Bothwick? Is he a single person or is he in fact, a large number of small hair like growths flying in close formation to hide the office block with the hundreds of departments and reference rooms inside?

Is David Stroud a boy in a toyshop? Toys, toys, toys and more bleeding toys. Is this what the great Amigan public are £4.95 for? So you can play with these baby computers and monitor screens that turn daylight into darkness?

And feed your bleeding dog or he'll go the way of the poor thing I saw on the street today - Photo attached.

Shame on you all.

Steve Clark
CEO (Chief Elf Overseer)
DruidPoet & Planet Elf Productions.

There is a simpler answer to how I write so much and why I post at all hours - I never sleep. An intravenous concoction of Turkish coffee, Laphroaig and various herbs has allowed me to stay awake for 5 years now. Sleep... is a waste of time. So much to do and so little time to do it. Neil is in fact an ARexx script, written by Mat Bettinson, ex- technical editor of CU Amiga, to compile CDs for him. Many years ago it broke its programming and has now gone rogue. Dave in fact hates playing with all the latest and coolest flat screen monitors, digital cameras and palmtop computers, but it is a sacrifice he is willing to make for the sake of our readers. As for Bluey, he eats pretty much who... I mean WHATever he wants.

Where to go?

Thanks for a great mag. I wonder, however, what the future holds. The advent of your mag seems to have made the overall amount of advertising dwindle... will there be enough to support two mags? Whilst we are on the subject of diversification (yes we were), it seems to me that the diversity of directions being taken by Amiga developers my just spell the end for the "machine". From where I am sitting it really does look as if what is really needed is some good leadership and direction.

The products being produced by the Amiga developers are good the O/S is basically solid, but with everyone pulling in different directions all we get is confusion. Where do I go next? Beos, O/s3.5, Linux? What platform should I run it on? 68k PPC or the new IBM base? I thought Gateway would provide the missing direction but it now seems that they too have forsaken the Amiga Community. Where do we go from here?

Allan Shillitto.

The overall amount of advertising has increased, but there are fewer companies advertising at all in the market. This is because confidence amongst buyers was hit badly by Gateway's antics. We're pretty sure that without Amiga Active, the situation would be a whole lot worse.

I have heard from a fair few people who haven't owned an Amiga in years, and went out and bought themselves one, or who have taken their machine out of the attic and started using it again after seeing Amiga. Where to go next? Everyone wants to know the answer to that. The direction the market is taking will become a whole lot clearer over the next few months, but there may be some rather big surprises on the way...

Overclocking a WHAT?

Dear Amiga Active magazine,

I was in WH Smiths and picked up a copy of your magazine (issue 4), and was delighted to find that it was so good - although I noticed that quite a few of the coverdisks had come away from the other magazines. I'm afraid a single blob of glue will not suffice. I think being a new publication has a lot to do with it, as you are not bogged down in what has gone before, as other long standing publications seem to be. The overall feel of the magazine is very fresh and friendly and the colour-coded sections are a nice idea, also you don't write anything that doesn't need writing. In a recent issue of PC Answers they ran an article about overclocking a pocket calculator, and they only ended up with a 0.0015% performance increase. I can't make my mind up if this was actually cutting-edge journalism at its most tangential or an early April fool.

Andrew MacKenzie.

Our apologies to everyone for the glue used on issue 4. We were warned that it might be a bit lower grade over Christmas, but to be honest we weren't expecting that. We've beaten people with sticks, and instilling the notion in their minds that they should use sufficient glue to make the CD stay stuck to the mag. Otherwise we'll beat them with sticks some more.

"I'm beginning to think that I'm a very small extra in a very sophisticated VR Soap Opera..."

I did overclock a Tamagotchi once - the poor fellow became quite hyperactive until it burnt out. I don't intend on publishing an article about it though.

Suitcase full of Wonga!

Huh? Wha....? FLIPPIN 'ECK !!!

What on earth is going on? I had a few too many at the New Millennium Eve parties that I staggered to, and now that I am fully conscious again, my bleary eyes light upon the news that the Amiga has been sold again!

I don't think I can keep up with this. Still, at least it was quick (blink and you'll miss it!). No sooner had Gateway turned into yet another set of bad guys than Bill and Fleecy ride into Amiga-land with a suitcase stuffed full of Wonga! I'm beginning to think that I'm a very small extra in a very sophisticated VR soap opera (did you see The Matrix?).

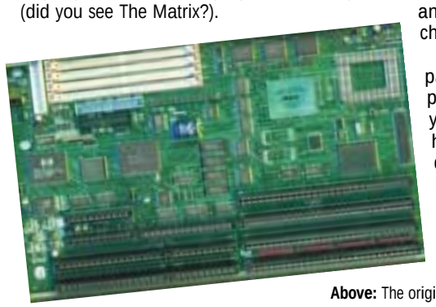
To cap it all, it looks like the OS will be English and there is the slim prospect of ARM powered Amigas in the future - a long held dream of mine. This of course has completely shaken my world view again, since I had resigned myself to the fact that the "Spirit of Amiga" would be encased in the QNX micro kernel and GUI. But now we have a system that is very similar, is virtually platform independent and is English! What a choice elegance and NASA or elegance and patriotism!

You'll be telling me next that that dawdler Mick Tinker has finally given up trying to build in every possible technology and has given us a production version of the BoXeR!

Dave Cox.

No-one can explain what is happening with the Amiga right now - you have to experience it for yourself. I have a blue pill and a red and white checked pill...

Check our news pages Dave. No production BoXeR yet, but the hardware development is frozen and the logic is all that is left to do. Bizarre, isn't it?



Above: The original BoXeR motherboard.

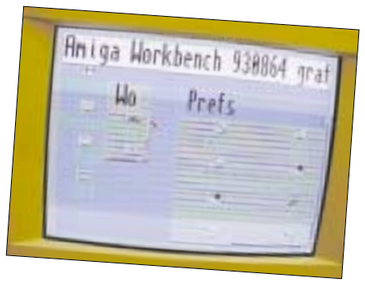
Unlucky 14

1. The Best News and Editorial pages yet. Love to see an Editor profaning. Only question is: what was the word?
2. As I read AA backwards (I know the news from the web already so I read the other bits first), I was quite tickled by a certain occurrence - viz.: Page 54, the Editors note on Keith Halstead's letter - *"That's 'MCC', dammit! - Pedantic Desk Ed."* and then, reaching the front of the magazine - page 14 bottom of column one, *"...The classic example of this has to be the debacle of the MMC announcement at World of Amiga '98."*
3. Love the use of different fonts in the Fonts Masterclass and that screen grab on page 41 is just laughable! Does anyone - sane or not - still run WorkBench in Low Res? Would've liked a list of places to get some fonts though.
4. Hyperion: Drool.
5. The Art of Games. Just don't get me started on what should or shouldn't be classified as art! Lovely!
6. Black Viper Review: One to steer clear of, I think. (Get it?) Chris - I thought you weren't a games person? :)
7. Who's the owner of "Bluey"? More to the point, who's the owner of that mattress?
8. So glad you had a picture of a broken CD on your Guru pages. Though yours is in five bits, mine was only in three.
9. Couldn't end on No. 13, now could I?

Samuel Byford.

1. "Elastop."
2. Reading AA backwards is silly - it's a palindrome. MMC is a chip, MCC is a computer.
3. That's not Low Res, the fonts were just very big.
4. Yep.
5. Oh, go on.
6. He's a fiend for racing games.
7. Bluey is Pinprint Publishing's tyrannical boss and isn't owned by anyone. The matress used to belong to an orphanage, but Bluey muscled his way in and cruelly took it for himself.
8. How did you do it? We had to hit ours repeatedly with a hammer to break it.
9. Don't worry - we had to cut your letter short to make it fit anyway!

"Does anyone - sane or not - still run Workbench in Low Res?..."



Right: It's Topaz, but not as we know it.

"Many people have said that in terms of hardware, Playstation is the spiritual descendant of the Amiga."

Our Valentine...

'Tis the month of Valentines and the time when our minds turn to a little bit of what we fancy, and here it is. The box you see on this page is the Sony DTL T10000, a developer's box for the Playstation 2. "So what's it doing here?" you may ask...

When Sony president Nobuyuki Idei said *"Playstation may be a radical challenge to the PC world which has been lead by Intel and Microsoft,"* he was talking about dealing with the whole range of digital devices. This doesn't just mean that PS2 hardware will be seen in set-top boxes, either.

Sony has announced that they would be producing a range of high-end workstations aimed at the people who create the content for the networked digital age. Given their Yaroze strategy, who would bet against a "home developers'" version? Wouldn't that fit in rather well with Amiga's vision?

The amusingly named "Tool" runs Linux, but a home system needs a better multimedia solution. Step forward Elate, which can run on Linux, and int**e**nt, which contains the Renderware software Sony have signed as a middleware tool for the PS2. Begins to make sense?

Many people have said that in terms of hardware, Playstation is the spiritual descendant of the Amiga. We'd like to see that become more solid. What better OS to run on a home PS2 workstation than the new Amiga OS? It would be a match made in (digital content) heaven. Cupid, draw back your bow - you have some matchmaking to do.

Andrew Korn A

This month: Problems with a PowerPort Junior, DVD movie aspirations, translating text files to non-native formats, plugging in a BNC monitor, persistent AACD icons and how to recognise large hard drives.

Knock-on effect

Hardware

Dear Guru,

I recently had to replace the motherboard in my tower, which had taken to only displaying 16 colours. I took the opportunity to install a PowerPort Junior serial port that I had bought from the now defunct Active Technologies. With the PowerPort connected, my computer refused to boot at all. I disconnected it and after a long delay it booted and seemed to be working perfectly, including my CD-ROM etc. That was until I tried to insert a floppy. My two floppy drives are now both dead as doornails. This motherboard had been in my desktop before transplanting into my tower, and the floppy worked O.K. Is this just sheer bad luck, or was it due to the power port? Is there any way of testing it as I would still like to be able to use it. I intend trying the second board in my desktop but I would be loath to connect up this port if it will cause the same problem to occur.

Yours Sincerely

Bill Power, via e-mail.

You don't mention which revision of the motherboard you have, but it is possible you have one which includes the full clock port header. The clock port was designed to have 40 pins, but most motherboards were only ever shipped with 22, although some were shipped with all 40 pins. If you have one of these less common boards, check to make sure that the PowerPort Junior is aligned to pin 1 and not connected at the wrong end of the header. If this is not the case, it certainly sounds like the unit could be faulty, and we suggest you try to return it for checking.

Slow video?

DIY

Much respect, great blue one,

I have been given a DELL DVD/MPEG-2 PCMCIA card, it's for a laptop but I thought it might work with my Amiga. With the possibility of connecting PCMCIA Ethernet cards to Amigas using the cnet.device, I thought it would be good to play DVDs in a window on my Workbench using this card. I assume the card has its own CPU specifically made to decode DVDs. I thought that if the PCMCIA port on the Amiga was fast enough, it could send the DVD data from the drive to the card, decode it and send back a video output. By using the Allegro CDFS filesystem along with my power flyer IDE adaptor the DVD data could be read fast enough and my BVision Graphics card is hopefully fast enough to play them back on my screen (it does have it's own TV output on the card as well).

Could you please give me your opinions on this idea. It would be great to play DVD'S on a Workbench screen wouldn't it? Yours sincerely,

Andrew Griffiths, via e-mail.

Indeed it would, but unfortunately your plan is a little flawed, mainly due to the dire transfer speed of the 16bit PCMCIA port.

Your idea could however work if a standalone DVD decoder was available that could take an input from the DVD drive and output a TV signal to plug into your machine via some other hardware.

Hmmm, this is getting somewhat expensive now - it would be nice, but perhaps a dedicated piece of DVD hardware, like one of the high street offerings at under £300 might be a better option.

Porting data

Software

Dear Guru,

Some years ago, I created files on the Commodore Amiga. The program was Protext - word processing. I presently wish to use these files on a PC, which does not recognise the format. Is there a way of converting from one to the other? I would appreciate any advice you may have.

Fred Seaton, via email

Unfortunately Protext wasn't one of the widely adopted formats, but most word processing packages should have the ability to import plain ASCII text. You will have to load your intended documents into Protext and save them out as plain text, then import on the other platform. More than likely you'll lose any text styles and formatting, so it might be an idea to print out the document to give you a layout sheet for guidance first.

If you don't have access to Protext any more, some wordprocessors (such as Microsoft Word) have the option to "recover text from any document". This will usually leave in some extraneous characters, page breaks and so on, but will get you most of the way there.

Massive Monitor

Hardware

Greetings Sir Guru....

My brother Nick wants to give me a 21" monitor. Great! He has his own graphics firm; needless to say, they only use Macs. The monitor is not new - I reckon it's 4-5 years old. It was always connected to a desktop Mac. When the firm upgraded to G3s, he was told that he wouldn't be able to use this particular monitor with the G3. The connecting cable has RGB (BNC) at the monitor end, but, the computer end is not a standard VGA plug. The plug is a 15 pin, which will fit into the Game/MIDI port on a PC sound card... I've tried it out.

The monitor make is a "Radius"(?), Model No. GDM 1950, with a Trinitron Graphics Display. On the back of it are two other (BNC) inputs, one says "HD" the other "VD", and above these is written "SYNC IN".

Above: The rear of a monitor using BNC video connnectors.

1. Have you or any of your illustrious mates ever seen, heard of, or even used anything like it?
2. Is it conceivable that someone would build such a monitor, that will only work with a certain line of computer?
3. What are the chances that if I buy a RBG-to-VGA cable it will work with my A4000's Picasso IV?

Yours Sincerely,

Keith Stevenson, via e-mail.

Yes, Yes, Yes! Sorry Keith, couldn't resist it... you'd probably like some more elaborate answers, so here we go:

1. Yes, the Radius monitors are extremely good quality and last well in service.
2. Definitely, but luckily for you, this should not be such a beast.
3. OK, you'll need to buy a BNC lead that terminates into a standard 15-pin. SVGA connector. The lead will allow you to connect up the Red, Green, Blue and Sync. These are the Horizontal and Vertical Synchronization signals that are needed to stabilise the picture. There are a few different standards of BNC monitors, some use a Sync-on-Green system which combines an sync line for both HD and VD along with the Green signal. Depending on the lead, you may need to support the HD and VD connections that you mention. Eyetech are probably your best bet for a ready-made cable.

The PicassoIV card is extremely well suited to monitors like this, and the software will allow you to tweak the settings to get the best from it. When setting it up, start off at 31Khz in your settings program, and work up from there but I would expect it to run much higher than that. Just see how far you can get your card software to push it, it should take anything the Picasso card will throw at it.

CD Woes

Software

Hi Guru,

I'm still having problems getting rid of the AACD icon from my workbench. Other cover CDs used to do the same but they have now sorted it. Can you use their system for CD's rather than assigns? It would certainly save my workbench from being cluttered up with icons if you can sort it out.

Many thanks,

Ivan Jacob, via e-mail.

No problem Ivan, we'll scrap months of work on the CD just for you! No, but seriously, most problems have been sorted out now. We don't know of any circumstances under which the icon would remain on your desktop when you click the "Remove CD" icon (which does remove all those assigns). If you would like to send an e-mail to our AACD address (aacd@amigactive.com) and describe your problem with more detail, including machine specifications, it would help us to try and find out why your problems exist.

Learning to Drive

Hardware

Hello,

I recently bought an IDE hard drive (a 17GB since that was all they had in), and the Amiga refused totally to recognise the drive at all! It didn't even flash the HD lamp. Is there a fault in the Amiga's IDE interface wherein the interface refuses to recognise any drives larger than some threshold size, and if so how large drives are recognisable (without use of PowerFlyer, IDE-Fix etc.) I have given up on the IDE drive and ordered a SCSI drive instead.

Kind regards

Jan-Erik Karlsson, via email

There is certainly no such problem with the hardware of the Amiga IDE interface. The interface should always recognise a properly configured drive on its bus. The size limitations are to do with the software that runs the port, not the hardware itself. It sounds like you may have a problem either with your cable, or perhaps you have not configured the drive jumpers properly. Mostly IDE is much less hassle than SCSI - no termination is needed and you don't have to set Logical Unit Numbers - but you will need to set the drive as Master or Slave in order for it to work along side other drives. Some modern drives will autosense if they are Master or standalone, but it would be worth checking the drive jumper information sheet.

The Guru A

Feeling blue? Ask the Guru

It's not necessary to climb the Himalayas to bring your problems to the *Amiga Active* Guru. If you have any technical problems, tips you'd like to pass on, or requests for in-depth coverage of a particular problem, please send them to: Ask The Guru, *Amiga Active* Magazine, Systems House, 3-11 Spring Road, Bournemouth BH1 4PZ - or alternatively, e-mail them to the Guru's personal mailbox: guru@amigactive.com

Please don't send us an SAE with your letters, as we cannot enter into personal correspondance due to time constraints. Also note that techincal queries cannot be answered over the 'phone, as the *Amiga Active* Guru spends most of the month meditating. Thank you.

What do they mean?

Our lovely Guru will sort out your silicon.

Sloppy software? Bug the Guru!

Networking and the art of Zen explained.

Get the most out of your Workbench.

Confused about your creative potential?

Save money - get the job done yourself.

Say WHAT? You must be bonkers!

DarkSpace Media

This month we take a look at DarkSpace Media, and their everyday use of the Amiga.

DarkSpace Media's design business has revolved around the Amiga for the last five years, involving in web site and graphic design, which includes some artwork for WipEout 2097.

Liam Welford told us, *"we found many reasons for using Amigas. We are all real Amiga enthusiasts and enjoy using the system, which is our primary reason. Also, apart from enabling us to do everything we need in an effective and efficient way, it is great fun too."*

Liam goes on to outline their software choices: *"Directory Opus Magellan has enabled us to create custom ARexx scripts, simplifying the editing and updating of HTML and graphic files based on the filetypes system. Also, the quality of software available has always impressed us, including Arteffect3, Photogenics4, TVPaint, Pagestream3 and Drawstudio2. We have many other packages which all come in handy, and the wealth of great shareware and freeware software has improved our work no end."*

"Arteffect3 is great for work needing layers - the masking tools works well and the package is very responsive. Photogenics is another amazing package that never fails to impress people we show it to. We don't tend to stick with just one package, we find each has something to offer that another may not be so good at. Working this way, we can produce higher quality work, and the Amiga's multitasking helps a great deal. TVPaint, which is free, is our main tool for the creation of web graphics, and it is quick and easy to use. Candy Factory Pro is also great fun, and when used sparingly can help spruce up logos and designs."

While, as Amiga users, we all know how much easier and fun it can be, the rest of the industry doesn't see it as a favourable platform to use, but this doesn't seem to bother those fellows at DarkSpace. *"There have been occasions when the need for a PC has seemed inevitable,"* continues Liam, *"but so far, we have resisted. We are able to make use of scanners and digital cameras with ease using only our Amiga systems, with all software and drivers being available.*

"With upgraded systems, there are always ways we can circumvent compatibility issues. Currently we have three Amigas, two low end systems used mainly for HTML and web graphics design and the main system which is an A1200T 040/25 + 200mhz PPC with a BVision graphics card. Not the most powerful Amiga available but it does the job well, and also runs Linux PPC which enables the testing of pages in Netscape, another way we have managed to avoid buying non Amiga systems." A

darkspace media

Show Us!

If you use Amigas in a professional capacity and would like the opportunity of having your work exhibited in the Active Gallery, please get in touch. You can reach us via e-mail or write to us at the following address:

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Amiga Active Magazine
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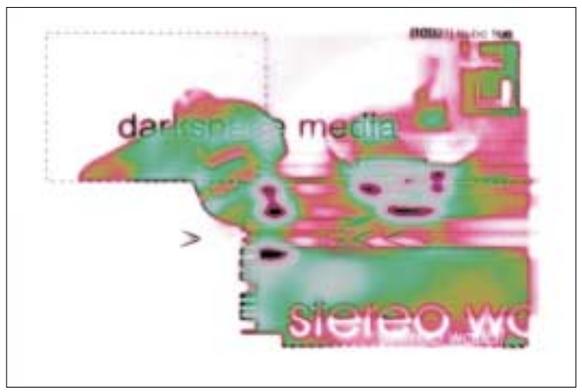
Bournemouth
Dorset BH1 4PZ (ENGLAND)

active.gallery@amigactive.com



Protect and Survive!

Be careful when you join the Global Village - not all the locals are friendly....

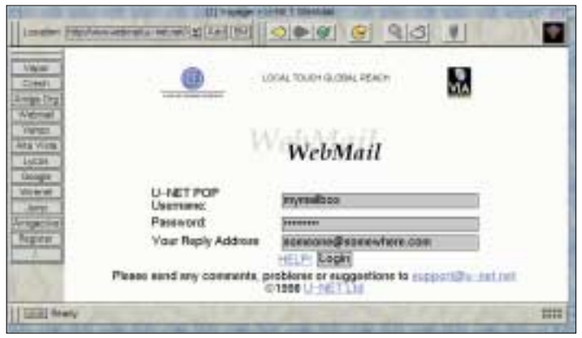
The Internet is a network of networks. Normally, any machine connected to one of those networks has access to any machine connected to another network. When you dial into your ISP, your computer becomes part of their network, which is why you can access most other machines on the Internet.

This is not a one-way street; it is also possible for others to connect to your machine. When you have one person using one computer, as with most home Amiga users, security is a non-issue. There's only you using the Amiga. Once you connect to the Internet, this all changes. You are risk from any "c00l d00d" who thinks that hacking into other people's computers is a substitute for a life.

Passwords

There are various ways of "hacking" your system, ranging from gaining access to unguarded openings to your TCP connection to simply stealing your password. Miami and Genesis are both basically secure in their default configuration. It's only when you start changing things that you really need to be aware of the security implications.

The easiest way for a hacker to compromise your system is to simply steal your password, which can be done in a variety of ways. There was a fake "improved" datatypes.library that contained a "Trojan horse," a program concealed within another, otherwise innocent program. It waited until you were online and then e-mailed your Miami configuration file to the hackers.



Above: WebMail, a useful method provided by some ISPs for reading your e-mail when away from home. Just make sure you're not watched when typing your password.

However, the most successful way of stealing your password is to ask for it. Never give out your password to anyone. There are some web sites that offer free web access to your mailbox. To do this they need your mailbox password, which is often the same as your account login password. Be careful who you trust - even if the company is honest, can you be sure they are security conscious?

One reason for using a webmail service is when you are away from the computer you normally use to read mail. Be very careful when using such a service on a public machine. Make sure no one watches you type in your password, and flush the browser caches after you log out, or your details will remain in the machine.

Many web sites ask you to give a password when first connecting - the server running the Amiga Active mailing list does this. Do not use your dial-in password for these services. I'm not suggesting that companies like ONElist and eGroups would deliberately release this information, but you can't know how secure each and every system is. I use the same password for all of these innocuous services, but keep a separate password for each critical service.

Why is it so important to keep your login and mail passwords safe? Anyone connecting to your account using your login and password will be taken to be you, and you'd be held accountable for their actions. If someone used your account to hack, spam or send abusive e-mail, you would probably lose the account, along with your e-mail address. Access to your mailbox would mean someone could read and reply to your e-mail, as if they were you.

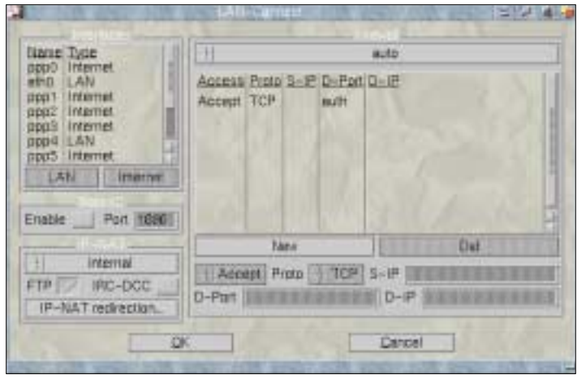
"The easiest way for a hacker to compromise your system is to simply steal your password..."

IRC and TCP:

There is a way that a hacker can gain access to your machine without your running a server. TCP: device is a very useful way of connecting to any port on a server from a script, without getting involved in the complexities of socket programming. It can also leave you wide open to attacks. Open a shell and type "newcli TCP:12345". Now open a telnet program and connect to localhost, port 12345. Type some AmigaDOS commands and you'll see the output as if you'd typed them directly in the shell.

I wouldn't suggest typing "delete #? all force quiet" but it does work. You've used TCP: to connect to your machine via your TCP stack - someone else could just as easily do the same.

If someone on IRC "advises" you to open a shell with TCP:, don't. This trick can be used to do most things that can be done from a shell. These could be harmless "fun", like sending an offline command to your TCP stack. They could be more serious, like reading the contents of files on your hard drive, such as configuration files containing your login and password details. Unless someone started pulling large files from your hard drive, you wouldn't even notice the extra network traffic.



Above: Miami Deluxe has its own firewall, for restricting access to your local network.

Ports of call

Communication between Internet hosts uses a selection of numbered "ports". This means that a host can handle various types of traffic. For example, a web server normally runs on port 80, while you collect mail from port 110 of the mail server, and send it to port 25. Samba offers a particularly dangerous potential vulnerability, opening a file server on port 139 which can be used to give people full read and write access to your hard drives. It is through these posts that other machines gain access to any Internet host, including your Amiga. When a computer attempts a connection to a specific port on your machine, it is handled by a program, called a daemon, listening on that particular port. If there is no daemon listening on a port, there is no way to connect to it.

The simplest way to prevent unauthorised access is to have no daemons running on any port. Unfortunately this isn't possible, as some are necessary for normal Internet access, but don't add any that you don't need.

Daemons can be run in one of two ways. A few are run as separate programs (some web servers work like this). Most are handled by the Inet "super-daemon". This watches all ports and starts up whichever program is specified in the InetD of Genesis or Miami. If no program is given, or the entry disabled, no one will be able to get into your system through that port. There are some ports you need to keep open, but these are running innocuous tasks that aren't subject to hacking. The most important one is port 13, which provides the "ident" service. Some servers use this when you log in, to verify that you are who you say you are. The default set-ups of Genesis and Miami are safe, but the same couldn't be said of AmiTCP 4.0, which allowed people to connect to the finger port and execute commands which would often crash the Amiga.

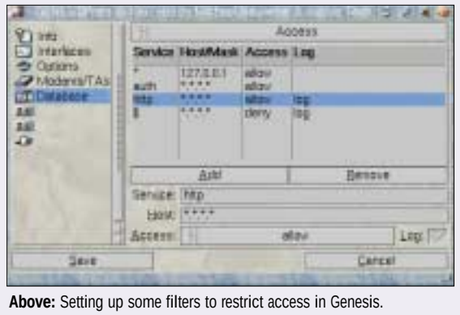
If you add extra services to InetD, it's important to keep them secure. The most dangerous option is to add an open server, such as an FTP or WWW server. If you want to use one of these locally, either on a single machine or a local network, you should protect it from access from outside. Miami Deluxe has a built-in firewall - in the TCP/IP section, click on the "LAN-Connect..." button and set the firewall to "Auto". This defaults to blocking traffic to all ports except "auth" (another name for ident).

A firewall is used to separate a network from the Internet at large, only allowing certain types of traffic to cross between the two. Companies use these for two reasons. Firstly to protect the machines on their network from outside interference, secondly to prevent people inside the network connecting to unauthorised servers, so they get some work done instead of chatting on IRC all day.

Neil Bothwick A

"Samba offers a particularly dangerous potential vulnerability..."

Port protection



Above: Setting up some filters to restrict access in Genesis.

To block access to ports in Genesis or Miami you need to set up some filters. This is done in the IP Filter section of Miami or the Access section of Genesis. The illustration shows Genesis, but Miami uses a similar format for the filters.

Each filter has four entries: the name of the service to filter, the hostnames or addresses this filter applies to, whether to allow or deny access and whether to log each access attempt. The filters are scanned from top to bottom, with only the first matching filter being used.

The first line (see picture) allows access to any port from the IP address 127.0.0.1 (localhost) with no logging. We assume you don't want to block yourself from anything. The second line allows any address to connect to the auth port without logging. The third line is an example of how you would configure Genesis to allow access to a web server. This line allows all hosts to access the http port, but logs each attempt into Genesis or Miami's logfile. The final line denies access to all ports from any host, logging the attempt.

This line uses "$" instead of "*" for the pattern. "*" would match all ports, whereas "$" matches only those from the Services section of the configuration database, allowing connections to temporary ports (such as those used by ICQ) and reverse-connects as used by FTP. Blocking these would stop FTP and ICQ from working.

Right: This site at http://grc.com/x/ne.dll?bh0bkyd2 will give an idea of how open to attack your system is.

Cool Sites

...and News Bytes

The new face

New owner, new web site. Following the acquisition of Amiga by Amino, the web site has changed to reflect the new company, goals and attitudes. After a few weeks with what was basically the old site with some off-the-wall press releases, Amiga now have a brand new look. While looking around Amiga's site, you should have a look at what their new partners have been doing. Tao Group's site provides an insight into their current products and general philosophy.

www.amiga.com
www.tao-group.com

Left: Tao Group's web site offers an insight into their technology.
Below: Amiga's new look.

Portals, please!

On January 1st, the Amiga Web Directory shut up shop. This was one of the most popular Amiga sites providing news and reference information. While the news aspect is well covered by other sites, we have lost a great all-in-one resource. Several people are discussing alternative resource sites, although it is too soon to say which will succeed. This depends on how well each site is organised and the amount of useful information it contains or links to. Two sites in the early planning stages are AmigaResource and Amigaglobe. We will bring you news of any other sites as we receive it.

www.amigaglobe.com
www.amigaresource.org

Below: Amiga Resource.
Right: AmigaGlobe.

Above: The Internet Movie Database offers tons of information on everything related to films.

Hooray for Hollywood!

Mention film related sites and someone is bound to suggest the Internet Movie Database (IMDb). This has become one of the standard reference points on the web, providing a huge amount of information on almost any film you can think of and many more you probably couldn't. The offline version of the database is some 230MB, yet it only offers a fraction of the information available online.

For some less serious film information, there are many movie trivia sites. Cinema Bytes is an online trivia quiz, full of the sort of information you can use to impress your friends. If your friends require a little more to impress them, try visiting UselessKnowledge.com. This site contains trivia on a whole range of subjects, including films - and whilst no-one should take themselves too seriously, proudly proclaiming *"Tell A Friend how useless this site is!"* may be taking things a little too far.

www.imdb.com
www.cinemabytes.com
www.uselessknowledge.com

Above Right: Cinema Bytes
Right: Useless Knowledge

The Internet Giant

The big news this month is the merger of AOL and Time Warner. It may not have a significant impact on the UK or European Internet business, but it shows how big it has become, with AOL holding a 55% share of the new company. This merging of an online service provider and a traditional media company is a pointer to what's coming on the Digital Convergence front.

@home Threatened

The American ISP @home was threatened with a Usenet Death Penalty (UDP) because of the quantities of Usenet spam originating from their subscribers and open servers. The spam continued to increase in spite of many complaints, until a UDP was threatened. A Usenet Death Penalty involves all participating news services cancelling any posts from the names servers. This effectively cuts them, and their subscribers, off from the rest of Usenet. @home capitulated and took steps to reduce the spam from their system, so the UDP was not imposed. However, the threat remains, not only for them but also as a warning to others. As permanent Internet connections become more commonplace, through cable modems and ADSL, this problem can only get worse, so this sort of strong action is needed to prevent Usenet from becoming unusable.

BT under pressure

Forty MPs have signed a motion demanding that BT do away with standing charges on residential lines. BT's response of *"Yes, we have a standing charge - along with every other telecom company in the world."* conveniently ignored the fact that most other telecom companies provide unmetered local calls as part of that standing charge.

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next issue...

THIS IS JUST THE START...

...score one for Amiga.

Oh yeah, and some other stuff like Imagine Work in Progress, VNC, Plextor 12x CD-R, SurfXS, Getting even more from Magellan, updates on AmiJoe, BoXeR and Heretic 2, plus oooh, probably about half of all the other wonderful things we have been promised for Amiga Active 7! *

That's issue 7, on sale Thursday, March 30th 2000.

To find out in advance how well we've predicted the future this time around, or if you want to find out how to join our electronic mailing list, see our web site...

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Retroactive

As if 'Rocket Ranger' and 'It Came From the Desert' weren't Retro already...

Remember Cinemaware? Arguably the most consistently entertaining game publisher of the late 80s and early 90s - Cinemaware's Defender of the Crown was virtually synonymous with the Amiga, and there is little doubt that the Amiga was the target platform for each of their products. The vagaries of a shifting gaming market put Cinemaware out of business in 1991, but two veteran game developers have revived the company name and launched a new company site at www.cinemaware.com.

The résumés of the two directors, Lars Fuhrken-Batista and Sean Vesce, are as interesting for what's in them as for what's not. The two collaborated on games such as Mechwarrior 2 and Interstate '76, but neither was involved with the original Cinemaware, except - it would seem - as avid fans. Judging by their education histories (both graduated college in 1994), they were probably in high school during Cinemaware's heyday.

Although the well-designed web site speaks of creating high-tech remakes of Cinemaware classics, it's not entirely clear just what they own of the old Cinemaware intellectual property. Their FAQ answers the pressing *"How can I get copies of classic Cinemaware games?"* with a rather cagey pointer to "auction sites like eBay," which is not exactly the free-spirited answer classic game fans were hoping for.

The new Cinemaware is actually going out of their way to court fans with long Amiga memories, with special Amiga news and an Amiga retrogaming forum on their website. That has not translated into a commitment to develop games for either present or future Amigas, however. Will a decade of faster CPUs and better graphics chips be able to outdo the ECS classics concocted by the original Cinemaware? I guess we'll just have to wait and see.

What We Did For Love

If you were a serious A500 user for any length of time, you would have become frustrated with its limitations and raged against them. The third-party hardware companies would have answered your call. But with only the memory expansion belly slot and an all-purpose sidecar slot, there wasn't much room. So we got all manner of internal hacks and bizarre devices.

If you were a true A500 butcher, you might have cut a jumper trace or two to activate the 1 MB Fat Agnus which Commodore shipped in many late-model 500s but left jumpered as a 512k version. Or you could have expanded past 1 MB of system memory using a daisy-chained set of belly slot RAM expanders - there was one long module with 1MB or more onboard, and on the end of that you plugged in your standard 512kB expansion.

"...every time I've brought up in conversation how much I liked the 1.3 topaz, people look at me like I'm crazy..."

Don't even get me started on the most useless of all A500 "hacks", which was hardly one at all: replacing the 68000 with a 68010. A simple operation, as they were pin-for-pin compatible, but hardly worth the effort. At best, you gained a pathetically small performance improvement. You also subjected yourself to all of the compatibility problems of '020s and above, but with none of the rewards.

All of this sounds strange, until you remember how history repeats itself. The past few years have seen the emergence of a fair number of snap-on, clip-on, and otherwise hacked in expansions for A1200s, including keyboard adapters, scan doublers, and of course the various clever abuses of the otherwise useless clock port.

My girl Topaz

Am I really the only person who was disappointed when Commodore changed the topaz font in the upgrade from 1.3 to 2.0 and beyond? I wouldn't have thought so, it's just that every time I've brought up in conversation how much I liked the 1.3 topaz, people look at me like I'm crazy. *(How else can you justify liking Topaz? - Bluey the mailhound.)*

I thought it looked nice and crisp in white against that lovely 1.3 background blue.

I will concede that it doesn't hold up as well under the 2.0 and beyond default grey colour scheme, but that's only for boring people anyway. I admit I didn't feel strongly enough about it to take drastic measures. *(Prediction: our topaz-hating Desk Ed. will write a comment in the previous paragraph - Ed.) (Wasn't me! - Desk Ed.)*

One of the better anecdotes on Dave Haynie's "Deathbed Vigil" videotape came from OS master Andy Finkel. He worked with a software engineer who refused to upgrade his Amiga to OS 2, so Finkel created a custom 2.0 ROM that looked exactly like 1.3 (topaz and all!) and secretly replaced the Luddite's ROM. It fooled him... until the incompatibilities between 1.3 and 2.0 showed up and started crashing his computer!

Jason Compton

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