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US EDITION



COMPUTING

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PLUS

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You can have an exclusive look at the first Amiga pictures of Championship Manager 2. Ah, go on...



### TRACKSUIT MANAGER 2 **64**

You too can blame your poor performances on the colour of you away kit. Man Utd? Whinging girls? Nah...

### SLAMTILT **66**

Right. Stop programming pinball games now. I'm sick and tired of seeing them. There are plenty around now so no more please



### WORLD GOLF **69**

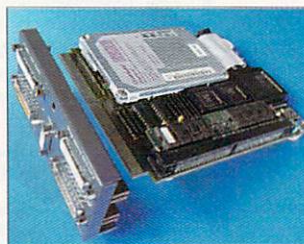
Put on your baggy chequered pants, a ridiculous hat and one glove and tee off right now



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Andy Maddock goes wild over this device to breath life into your tired old CD32



Expand your CD32 beyond all recognition with the Sx32

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### OPERATION DATABASE **38**

Paul Overaa continues his six part series on programming databases with this third installment

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We look back over the past hundred issue and the villains and heroes that contributed to our success



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Steve White finishes his six month series on getting the best from your Amiga for beginners



# THE COVERDISKS

## STORMC

A 4Mb demo of the most advanced C/C++ compiler available for the Amiga. Every part of the compiler environment is fully functional and unrestricted so you can try out every part

## STORMC 2

StormC is so big it even takes up half of the second coverdisk. However, we have still managed to cram a whole host of amazing utilities on it including:

ClassAction v3, Lupe, AppCon, EasyAssign, NoFill NoDraw, ShellBench, TaskBar, TolleUhr and UrouHack v1.7



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Come and see the doktor. Don't worry, he'll fix your problems and if you leave with a faster machine that's a bonus

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## SUBSCRIPTIONS

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# 100th Issue 39,802

**S**ome of you may be wondering about our ABC figures at the bottom of this page. How is it, in a world of declining Amiga use and with other magazine sales dropping by as much as 37 per cent, that we have managed to add about 47% to our readership figures just like that? The answer's simple really. Not only are we the best Amiga magazine on the market with exclusive reports brought to you before anyone else on things like the new Amiga, the stories in this issue about VisCorp buying Amiga Technologies, and NewTek's LightWave announcement and so on, we are also unique in the fact that we have two editions, one for Europe and one for the American market. The reason for our increased ABC is our loyal American and Canadian readers who rely on us to bring them the up-to-date news, reviews and features every month that we bring to the rest of the world.

## THE TRUTH

But why do our readers like us? Well, as always you can rely on *Amiga Computing* to tell you the truth about a product. Just because the market is shrinking, it doesn't mean we will puff products against our better judgement, after all, it is you, our readers, to whom we are responsible and you won't trust a magazine's judgement if you buy a product we have said is perfect and it turns out to be a bit mince.

We also appeal to the more mature,

## Double the readers Double the fun

serious Amiga owner. The kind of chap, as our survey reveals, that spends more time using 3D packages than playing games, that almost certainly has a hard drive and CD-ROM. This sort of person doesn't enjoy being talked down to and we strive not to do that.

So here we are, poised on the brink of yet another chapter in the Amiga's chequered career, with VisCorp announcing that they will continue to support existing Amiga markets and develop new ones, pretty much the same stories we heard from Escom last May. We'll have to wait and see, as usual, but at least Don Gilbreath, one of the head honchos at VisCorp, was the designer of the CD32, so he has more pedigree than most of the current Amiga Technologies team. And this time there shouldn't be any of the delays in production of new machines, because, as we understand it, VisCorp are buying Amiga Technologies lock, stock and barrel, so they won't have to find a factory to produce Amigas which will need to be retooled and so on.

Perhaps VisCorp might also attract back some of the real Commodore talent from their posts at other companies. Names like Dave Haynie, Mike Sinz, Peter Cherna et al. would be the ones best suited to breathing life back into our favourite machine in a

amiga  
comment



The very first issue of Amiga computing - note the printing error on the masthead!

way that Amiga Technologies, through no particular fault of their own, have failed to do.

From reading IRC transcripts and attending conferences we know that there is still an awful lot of potential in the Amiga yet. Other platforms have shown the way forward perhaps, but there is still time for our machine to rise from the ashes of Commodore and Escom and renew itself, phoenix-like, as the machine for artists and multimedia types the world over. We know there is a market out there from our reader survey. We know you are now more clued up than ever, and we know that you are sticking with the Amiga because it is still the best machine for your current computing needs. Let's stick out the year and see the looks of disbelief surface on the faces of those fairweather Amiga owners who ditched everything they knew for a personality-free PC when VisCorp show a PowerAmiga at next year's CeBit show...

Ben Vost  
Editor

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**SUBSCRIPTION** 0151-357 2961

Member of the Audit Bureau of Circulations

**ABC 39,802**

July-December 1995

Published by IDG Media, Media House, Adlington Park,  
Macclesfield SK10 4NP  
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We regret Amiga Computing cannot offer technical help on a personal basis either by telephone or in writing. All reader enquiries should be submitted to the address in this panel for possible publication.

Amiga Computing is an independent publication and Amiga Technologies GmbH are not responsible for any of the articles in this issue or for any of the opinions expressed.

Amiga Computing (ISSN 0959-9630) is published monthly by IDG Media, England, a subsidiary of the IDG Corp. Application for second-class postage rates pending at Boston, MA and additional mailing offices.

**Postmaster:** send address changes to AMC Subs Dept, 460 Hillside Avenue, Hillside, New Jersey 07205.  
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For 8 years Amiga Computing has been the leading magazine for Amiga enthusiasts. As a key member of the IDG communications group, Amiga Computing promises to inform, educate and entertain its readers each month with the most dedicated coverage of the Amiga available.

US yearly subscription rate:  
USA Gold \$70, USA Standard \$44

Printed and bound by  
RR Donnelley & Sons Company  
Senatobia, Memphis



Paxtron is North America's largest wholesale supplier of Amiga replacement and upgrade chips

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## SURFACE MOUNTED DEVICES

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C65 inc. all chips, latest ROM (PAL only)	\$74.50
C128	\$49.95
C128D	\$69.95
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A500 (Rev. 5/6) with Super Denise	\$89.50
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A500 Internal	\$38.95
A2000 Internal	\$49.95
A3000 Internal	\$49.95
A4000 Internal	\$49.95
CD32 Replacement CD mechanism	\$39.95

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C64 5.2 amp Heavy Duty (also 1750 REU)	\$39.95
C65 220 Volts	\$12.50
C128D Internal	\$24.95
C128 external 5.2 amps	\$39.95
1541 II/1581 (limited quantity)	\$8.50
A500	\$38.95

A590	\$19.95
A500/A600/A1200 Big Ft. (200 Watt) Micro R/D	\$79.95
CD32 Original / Factory (110 volts)	\$21.95
CD32 Original / Factory (220 volts)	\$14.95
CD32 Big Foot (200 Watt) Micro R/D	\$74.50
A2000 110/220V. internal original	\$89.95
A2000 Big Foot (300 Watt) Micro R/D	\$144.50
A3000 internal (110/220 volts)	\$99.95
A3000 Big Foot (300 Watts) Micro R/D	\$144.50
A3000 Tower	\$124.00
A4000 internal (220 volts)	\$99.95
A4000 int. 110 volts Big Foot (300 Watt)	\$199.95
1084S Phillips Flyback Transformer	\$34.95
1084-D1 Phillips/Daewoo Flyback	\$34.50
1084-D2 Daewoo Flyback Transformer	\$34.50
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1084S power supply board (refurbished)	\$29.95

## KEYBOARDS (Factory New)

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C65 (Special Keyboard)	\$19.95
A500 (limited quantity)	\$39.95
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A1200	\$34.95
A2000 (U.S. version)	\$69.95
A3000 (U.S. version)	\$69.95
A4000 (U.S. version)	\$69.95
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CD32 Black	\$39.95
5X1	\$39.95
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A2000 keyboard adapter to A4000	\$8.95
A4000 keyboard adapter to A2000	\$8.95
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## ADD ON BOARDS (Factory New)

A386 (25MHz) Bridgeboard /SW Instr.	\$264.50
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A501 original Ram Exp. - 512K (A500)	\$17.95
A590 external A500 Contr. (no h/d) with p/s	\$169.95
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2MB RAM, 100MB H/D, Power Supply	\$369.95
ICD Trilecta 500 EC: IDE hard drive 16 bit controller, up to 8 megs of fast RAM, space for hard drive	\$159.95
ICD Ad Ram 540 (8K) up to 4MB	\$69.50
ICD Ad Ram 540 (A500) w/ 4 Megs	\$209.00
ICD Ad Ram 510+1MB for A500+	\$59.95
ICD Ad SCSI 2000	\$89.50
ICD Ad Speed	\$99.95
ICD Flicker Free Video	\$248.95
Microway Flickerfixer	\$224.00

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CBM 1351 C64/C128	\$19.95
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Wizard 3-button (for all Amigas)	\$22.95
A4000 (Amiga Technologies)	\$22.50
Amiga CDTV	\$15.95
Amiga A1200 mouse port replacement kit	\$7.95
CD32 controller	\$11.75

## DIAGNOSTICS

Advanced Amiga Analyzer (see below)	\$59.95
Final Test diagnostic disk	\$7.95
Amiga Troubleshooting Guide	\$7.95
Commodore Diagnostic II	\$6.95
C64/128 Dead Test cartridge/manual	\$19.95
C64/128 Diag. cartridge/no cable	\$24.75

## SERVICE MANUALS (Just arrived)

CDTV/C64/128 Dead Test	\$13.95
A500/A600/1084/51/1802 each	\$16.95
A2000/A3000/A4000/1960/C128D each	\$19.95
— 65 different service manuals in stock —	

## CLEARANCE SALE

A2000 (refurbished) complete/keyboard	\$399.00
5X1 Expansion Module for CD32	\$199.95
A600 Complete Computer System	\$199.95
CD32 Network: CD ROM/cable	\$53.75
VGA 15 - 23 pin RGB Adapter (390682-01)	\$19.95
A520 (New) Video Modulator	
Adapter kit/cables/instructions	\$12.50
Rom Switch - (Switch It) with speaker	\$17.50
256K4 RAM for A2058 expander, etc	\$4.50
Monitor Cables	CALL
C64 untested motherboard/all chips	2 for \$25.00
C128 untested motherboards	\$24.95
Monitors: 1084S, 1950, 1802, etc	CALL
Commodore PC10/20 motherboard	\$23.00
PC power supply	\$24.00
CDTV modulator	\$2.95
CDTV complete unit	\$158.50
5X64 computer (refurbished)	\$179.00
6502 chip	\$1.50
RF modulator (PAL) 313371-05	\$8.00
Sony QD6150 data cartridge	\$9.00
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## EXCLUSIVE NEW PRODUCTS

## ADVANCED AMIGA ANALYZER 2.0™

## AN INEXPENSIVE DIAGNOSTIC ANALYZER THAT WORKS ON ALL AMIGAS

A complete diagnostic hardware and software analyzer [uses point and click software interface.] The analyzer cable plugs into all Amiga ports simultaneously and through sophisticated software, displays 8 screens to work from. Shows status of data ports, memory (buffer) checker, system configuration and auto test. Reads diagnostic status of any read/write errors from track 0 to track 79. Software automatically tells what errors are found and the chips/components responsible. 85 to 90% of the problems presented to service centers are found with this analyzer. Saves you lots of money on repairs and no end user or repair shop can afford to be without one. Don't be fooled by its low cost. Simply plug in cables from the analyzer box. This diagnostic tool is used by end users and Amiga repair centers worldwide and is the only one of its kind. Over 11,000 sold.

New low price

•• New 2.0 Version ••

\$59.95

## IMPORTANT NOTICE

PAXTRON is pleased to announce that we have purchased the entire parts and chips inventory of Service Management Group (SMG), who were the sole parts distributor for Amiga Technologies in the US. Special new prices for dealers, fax or write.

## A500/A2000 EMERGENCY DIAGNOSTIC/REPAIR KIT

## (Spare parts of the future)

Each kit contains 8372 Agnus, [2] 8520 CIA, 8364 Paula, 5719 Gary, 8362 Denise, 2.04 O/S Rom, pico fuse, Burny PLCC chip puller, Amiga Troubleshooting Guide, Final Test disk. All chips are new and plug into sockets on the motherboard.

A \$159.00 value (save \$59.00)

\$99.95

## ★ HOT NEW ITEMS ★

Commodore GmbH Germany, Commodore Philippines (manufacturing) and Commodore U.K. Ltd., has liquidated their entire Amiga inventory. A sizable amount of that inventory was purchased directly by Paxtron U.S. We also are receiving a sizable amount of hardware from Commodore subcontractors.

- VIDEO ENHANCER PLUS for CD32. The enhancer does two important things: It allows you to use the RGB format instead of composite and electronically enhances the RGB signal for a much improved display .....\$29.95
- A501 original CBM 512KB Memory Expansion Card with clock, calendar/battery for A500. In original box instructions and warranty.....\$17.50
- A520 Video Modulator Adapter Kit with cables and instructions (NTSC). Run any Amiga on your television. ....\$12.50
- Super Buster Chip (rev. 11). Latest A3000 plug in upgrade (390539-11) .....\$29.95
- A2000/A3000 new Internal floppy drive - getting hard to find .....\$49.95
- A3000 (25MHz) populated motherboard (factory new), all chips. Last chance to get a replacement/spare .....\$359.95
- CD32 Motherboard - contains all chips (Lisa, Alice, Paula, 68020-16, ADV101) except the 512K memories. ....\$99.95 (Complete new CD32 motherboard with memory, tested ready to go \$124.50)
- AMIGA COMPATIBLE KEYBOARDS - High quality PC-type keyboards for the A500 (external), A2000, A3000, A4000 are now available in the US for the first time. These keyboards offer the advantage of an IBM keyboard with 100 percent Amiga compatibility (specify model) .....\$59.95
- 1084S MOTHERBOARD WITH FLYBACK TRANSFORMER - This new board will cure 90 percent of 1084S monitor problems. Simply switch the PCB and your monitor problems are solved! The Flyback, if purchased separately costs \$35.00. Compatible with all 1084S monitors .....\$79.95
- COMMODORE 1976 SCIENTIFIC CALCULATOR - Save a piece of the past. A valuable antique. Brand new with charger/manual.....\$8.95
- SURFACE MOUNTED DEVICES - Large inventory for the A3000, A4000, A1200, CD32. ....See above or call for quantity pricing
- COMMODORE C65 MOTHERBOARD - (Very rare - limited production run) PAL only/latest ROMs. ....\$74.50
- A500 MOTHERBOARD COMPLETE - Rev.3/1988. New includes all chips. Use as a spare or for parts. \$79.00 value (Save \$20.00) .....Final price \$59.95

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# news

By Tina Hackett

## SHOCK ACQUISITION OF AMIGA TECHNOLOGIES BY VISCORP

Just as we were going to press, Amiga Computing learnt of the shock announcement that Escom were to sell Amiga Technologies to Viscorp, developers of set-top box technology. A binding letter of understanding has been signed between the companies and it states that Viscorp would acquire Amiga Technologies, including the intellectual properties of the Commodore Business Machines. The transaction value is around \$40 million – \$10 million more than Escom bought Commodore for just over a year ago. The acquisition is subject to approval by both companies' board of directors and terms were not disclosed.

Gilles Bourdin, PR Manager for Amiga Technologies explained: "We have changed Mother companies because of the financial position of Escom. They were not in a position to hold Amiga Technologies and so we have a found a company that are more development-orientated - an Amiga-oriented company." When asked whether this is definite he commented: "We are quite sure this is going to happen." In January, Escom posted losses of 72 DM million and in March they revised that to 125 DM Million.



The Surfer Pack  
- ready at last?

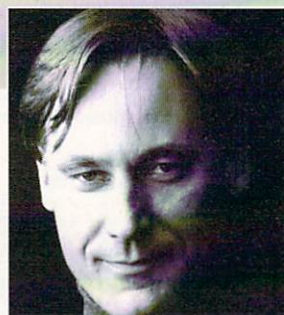
Although primarily the acquisition is to give Viscorp full access to Amiga Technology for its set-top box, they have stated that support of the A1200 and

A4000 will continue. Helmut Jost, now Chief Executive of Escom AG (see separate story) commented: "Viscorp anticipates the support of ongoing European sales of popular models such as the A4000T and the A1200 as well as the current developments and future releases of Amiga Technologies."

At the press conference at the World of Amiga show, they outlined their plans further. William Buck, Viscorp's CEO, commented on the rumoured offer of \$40 million when Escom bought Amiga Technologies for only \$10 million, "People are saying that these guys are crazy...remember though that money was spent subsequently. What we are buying is an asset. An asset that involves the inventory of finished goods, inventory of components which we can use to do what was being done but we can also use them to do what we want to do. Plus we're getting the intellectual properties. We think we're getting a great deal." Viscorp were present at the original auction for Commodore.

Petro Tyschtschenko offered: "This procedure is not affecting our day to day business, on-going projects, or my position as president of the company."

It was also stated that the distribution deal already in place with Escom when the original licensing agreement was signed was still in place. The proposed time scale for development is projected to be the end of 1996 for Universal Internet Television Interface for the US and the UK and the full set-top box with genlock and card-swipe for 1997. We'll bring you a full report of World of Amiga and more on the Viscorp deal next month.



Manfred Schmitt (pictured) quits Escom board. He is replaced by ex-Commodore man, Helmut Jost

## ALL CHANGE AT ESCOM

Manfred Schmitt, Escom's CEO, has quit the board and has been replaced by Helmut Jost. The Supervisory Board accepted Schmitt's decision and he left his position on 31 March. However, he is still with the company in the role of consultant.

Jost has been head of IBM's German PC business since November but previous to that he was Managing Director of Commodore GmbH and Vice President International. In 1993 he accepted a post on the board of ESCOM AG where he was responsible for the Sales and Marketing functions and for the management of subsidiaries.

Amiga Computing spoke to Gilles Bourdin, PR Manager for the company, about the recent events. He confirmed Schmitt had quit the Board but contrary to current rumours, he denied that Petro Tyschtschenko was also leaving. More news from Amiga Technologies this month is that the Internet pack is finally ready. According to Bourdin, the software and the modem are finished, and the delay was put down to the fact that each country needed a different modem and because the Telecom agreements varied between each country.

## PHOTOGENICS 2 TO LAUNCH

Almathera have revealed that their much anticipated Photogenics 2 package is about to be released. As a follow-up to their highly successful graphics package, it contains many new features – so much so that they have put it on CD-ROM. They have included Animation support to load and save standard IFF Anim files, powerful AREXX scripting where you can create macro scripts to automate conversion, build animations or interface with other Amiga software. This also allows Photogenics 2 to link directly to LightWave 3D.

A new full-screen Effects system has also been incorporated and provides many new effects that you can apply to a complete

image or a masked area. You can write your own effects but those included are Radial Blur, Warp, 3D Rotate and 32-bit Fractal generator. Another new feature is their Virtual Buffers which means you can work with images larger than your memory will allow. Almathera claim this is 'unique' because it allows this without the speed loss usually associated with virtual memory programs. Hypertext On-line help is provided on the CD-ROM in HTML format, and a Web browser is also included. The price is expected to be around £99.95.

Almathera can be contacted on 0181-687 0040. or e-mail [almathera@cix.compulink.co.uk](mailto:almathera@cix.compulink.co.uk)



## LIGHTWAVE 5 ON THE HORIZON

NewTek took the opportunity given to them at NAB to announce the latest version of LightWave. The best news is that Modeler is to receive a much needed update, with tools to bring it in line with the current range of state-of-the-art CGI programs. Modeler has been neglected in comparison to Layout, with only Metaform being of any note as an update in recent revisions.

LightWave 5 is set to change all that with several new ground-breaking features. Firstly, there is MetaNurbs, and LightWave is the first product with this feature. It breaks the barrier between spline-based modelling and traditional polygons by automating the transition between the two. Another feature much loved by 3D Studio users is MetaBalls



which will be included directly in Modeler (rather than having to be a plug-in, as in 3D Studio). MetaBalls is a system that is fairly hard to explain in a few words, but allows for the kind of 'globby' effects as seen in the Organics advert on TV. In addition to over 100 new features for both Layout and Modeler, LightWave 5 also promises full integration with OpenGL a graphics system for realtime shaded views in Layout, and, presumably (they didn't say on the press release), Modeler. But where will that leave Amiga owners who won't have access to OpenGL? NewTek don't say, but the PC version will be the first available, with Alpha, MIPS and SGI to follow. The pricing will be \$1495 for the full version, and upgrades will cost \$495 from any previous version.

## ZIP IT UP

Omega have announced that shipment of their Zip Drives has passed the One Million mark. In an announcement at the CeBIT trade show in Hannover, they revealed that they have shipped more than one million Zip drives in less than a year and also shipped nearly ten million Zip disks.



The Omega Zip Drive has shipped over one million units

## RAM IT HOME

Trade paper CTW has reported that games companies are being targeted by 'RAM raiders'. Computer thieves are breaking into the companies and stealing thousands of pounds worth of memory boards and other equipment. Code-masters are the latest victim of the robberies and want other companies to take note and put up protection against the thieves.

## LIVE '96 AND KICKING

The Consumer Electronics Show is all set to happen at Earls Court, London, in September. Scheduled for the 25-29 of the month, companies such as Sony, Demon Internet and Mitsubishi have already signed up. The show also plays host to the Battle of the Bands contest as well as the latest in games, computers, Internet, audio and Television.

**LIVE '96**  
THE CONSUMER ELECTRONICS SHOW  
EARLS COURT • LONDON  
25 - 29 SEPTEMBER 1996

## HOPE FOR LEISURESOF

Wholesalers Leisuresoft hope to see off current difficulties by going into administration, it was announced recently. The company are reported to be having financial troubles but according to the joint administrator, Bob Bailey, they are giving out a 'business as usual' message. Trade paper CTW said that 12 staff have been made redundant, leaving a workforce of about 60. The administrator commented that people had expressed an interest in buying the company but they had no intention of putting it up for sale.

Leisuresoft are one of only two Amiga distributors, the other being SDL. SDL also fell into problems back in October and went into Administration, to be bought out only four weeks later by Anglo Corporation. No-one from Leisuresoft was able to comment at the time of going to press what implications this would have for the future of their Amiga line

## news snippets

### PREMIUM PRINT

Kodak have announced a new range of Photographic Paper and Transparency Film designed to get the best results from desktop Ink Jet printers. They are offering superior grades of photographic-quality A4 paper and transparency film which is ideal for producing high quality print-outs in vivid colour or black and white. They will enhance the quality of documents or overheads by making accurate graphics, solid colour saturation and crisp text possible.

### REAL GEMS

Gillet Multimedia, the company behind the 'Little Gem' Desktop Micro Audio Mixer and EQ Unit, have announced that due to the success of the unit they have reduced the price. Originally retailing at £69.95, they have knocked this down to £49.95. Launched last summer, the unit has sold in its hundreds all around the world - it even earned itself a 9 out of 10 score from Amiga Computing. For more information contact Gillett Multimedia on 01353 669203.



### TERMINUS TERMINATED

According to rumours circulating on the Amiga Directory, the modem terminal program, Terminus is no longer being developed. Apparently the author, Jack Radigan is considering a port to OS/2 but is waiting to see if the BeBox becomes a player.

### JOIN THE CLUB

A new Amiga computer club has opened in Lancashire at St Thomas The Martyr School Hall, Highgate Road, UpHolland, Wigan. The club meetings are held every Sunday at 1pm, admission is £1.50, and members can benefit from free advice, free software and a huge Public Domain library totalling 18Mb of software. Refreshments are also available. If you're interested and can actually get out of bed on a Sunday before 1pm, take along your Amiga and get computing.

Hugh Poynton



## GET YOUR VIRTUAL MOTOR RUNNING...

A new solution has emerged in Japan to the age old problem of how to train motorbike riders without actually exposing them to too much danger on the open road.

Virtuality KK, a subsidiary of Virtuality Group plc, have announced that they have completed the development of a motorbike simulator for use in driving schools in Japan. The completion of the simulator has coincided with the Japanese Police's decision to revise the traffic law so that simulators will have to be used as part of the teaching programme, particularly for candidates of bikes over 400cc.

Virtuality KK expect to make massive profits on the motorbike simulator as the market is estimated to be about US \$50 million and the only other company known to be

working on a bike simulator is Honda. The real advantage of the simulator is the fact that it can allow student drivers to drive in hazardous conditions without fear of injury. Dangers such as difficult weather conditions, busy roads, and pedestrians walking out in front of them will enable them to experience the worst they could expect to come across on the open road, and to learn from their experiences.

Rather than use a flat screen, the simulator makes use of a 'Visette' Head Mounted Display through which the student sees detailed real time 3D graphics. According to Mr Terushisa Tajima, HMD is used because "...it is the only way to ensure that students turn their heads left and right before they make a turn at an intersection."

Hugh Poynton

## AND I'D LIKE TO THANK...

The Industry show, ECTS, has rapidly approached and with it came the famous awards night to celebrate the best and the rest in the industry. The show was hosted by BBC's Emma Forbes (Live and Kicking) and GamesMaster's Dominik Diamond, and if that's not enough excitement for the evening, there was also a performance by the Oasis tribute band, No Way Sis. Nominations included Worms, Destruction Derby and Wipeout for the Most Original Title. Command and Conquer, Descent, Worms (again), Screamer, EF2000 and NHL Hockey '96 have been nominated for Computer game of the Year. We'll keep you posted...



## DESKTOP DREAMS

This Spring saw the release of E.M. Computer Graphic's new professional Desktop Video CD for the Amiga, the EMC Phase4. The package is aimed at anybody who uses their Amiga for video, presentation or graphics work.

EMC state that the CD contains a large number of fonts, music modules and sound samples that will be suitable for commercial presentations. As well as this, the CD contains 300 megabytes of professionally designed backgrounds covering such diverse subjects as weddings and technology, and a wide variety of backgrounds are available too such as marble, fabric and stone. The CD also contains countdown animations, on screen timers, multimedia buttons and testcards so that very professional looking presentations can be created.

The EMC Phase4 Desktop Video Dreams CD is available for £39.99 + p&p. Contact them on 01255 431389

Hugh Poynton

## HAMA SANDWICH

Hama have announced that they have taken over the distribution of Videonics. This gives them the largest range of Post Production Product available from any UK supplier.

## BROADCAST INDIAN '96

The Broadcast India '96 Exhibition and Symposium will be held from the 24-26 October at the World Trade Centre, Bombay. The exhibition covers all aspects of TV, Radio, Video, Audio, Film, Cable, Satellite, Computer Graphics, Multi Media, Transmission, and many other associated technologies.

India's broadcasting industry is flourishing after the privatisation of channels and the arrival of the international networks in India. With 80 channels expected to exist in India within the next year, it is thought that the Indian

broadcasting industry will require over 1,000,000 hours of TV programmes per year. Such a huge boom in the broadcasting business means India currently needs 50 times more hardware and technology for its existing and new facilities, making one of the largest markets for broadcast hardware and also computer software.

Anybody interested should contact Saicom Trade Fairs & Exhibitions PVT. Ltd at phone: (91-92) 2151396, 2152721 or fax: (91-92) 2151269

Hugh Poynton

## news from the net

## WHO'S EATEN ALL THE CAKES?

CompuServe, the world's largest On-line Services and Internet Access provider, announced on 2 April that Steven P Stanbrook, formerly President of the Sara Lee Corporation HQ in Chicago, was to be appointed to their newly created position of President International.

Stanbrook will implement CompuServe's global expansion campaign, providing strategic direction and general management of international offices.

Hugh Poynton

## HACKED OFF

An Argentine computer hacker found himself in deep trouble recently when he was overheard bragging to his girlfriend that he had broken into US military computers and other top security systems. A judge authorised Julio Ardita's telephone to be bugged and he was heard boasting how he had used the Internet to break into the systems.

Ardita also hacked into the Argentine telephone company, Telecom Argentina, and they suspect someone had given him the password - a combination which would have taken years to uncover. Ardita was allowed free on parole but could face up to three years if found guilty.

## WORLDWIDE HONOURS

The creator of the World Wide Web, Tim Berners-Lee, is to be given an honorary degree from the University of Southampton. He will receive the degree of Doctor of Science (DSc) this summer.

Berners-Lee created the Web back in 1989 when he was working at the European Particle Physics Laboratory, CERN. He now directs the W3 Consortium from the Massachusetts Institute of Technology.

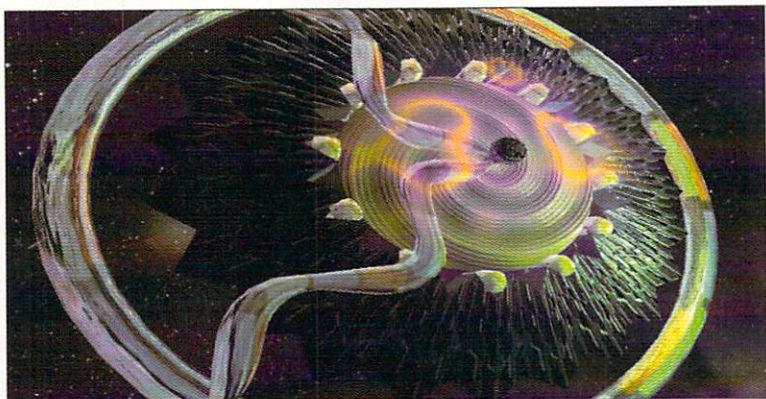


# Nova acquire Aladdin 4D

It used to be that there were two major rendering packages on the Amiga – Impulse's Imagine on the lower end, and NewTek's LightWave on the upper end. Contenders have come and gone. About a year ago, Maxon's Cinema4D got an English translation, and its low cost and high power set the market astir. It's just got quite a bit hotter.

Nova Design, renown the world over for their high-end image processor ImageFX, have acquired Aladdin 4D from Adspec Programming. While Aladdin 4D has never actually gone out of production, its interface and features are currently going through a major overhaul by Nova Design programmers. Previous to Nova's acquisition, Aladdin 4D was often noted for powerful animation control and its ability to create realistic vapors, clouds, and gasses. An old competitor has returned to stake its claim on the high-end, low-cost rendering market.

Nova Design intend to release Aladdin 4D 5.0 in the third quarter of 1996, but a price has not yet been determined. For more information on Nova Design, ImageFX, or Aladdin 4D, you can reach Nova Design by phone on (001) 804-282-5868, by fax on (001) 804-282-3768, by e-mail at [kermi@cup.portal.com](mailto:kermi@cup.portal.com), or on the Web at <http://www.portal.com/~kermi/>



Creating realistic images like this one is easy with Aladdin 4D. Will it be even better under Nova Design?



## NEW SETUP FOR WCS

World Construction Set, the package that interprets geographical survey DEM files into realistic landscapes, has reached a new version. Questar Productions have decided to put out a 'pre-release' version, without all the features fully implemented and fixed. The pre-release will be less expensive than the full package, and all pre-release purchasers will be entitled to a free upgrade upon its completion.

While Questar produce WCS for other platforms, the price of WCS on the Amiga will be lower than their versions of WCS 2. WCS V2 allows timeline editing of animations, a configurable MUI interface, better waves and water control, multiple DEM files in a single project, and compatibility with LightWave through an import filter. WCS V2 Pre-release is shipping now, and dealer and distributor inquiries are invited.

Questar Productions can be reached on (001) 303-659-4028, [wcsinfo@arcticus.burner.com](mailto:wcsinfo@arcticus.burner.com) through e-mail, and <http://www.dimensional.com/~questar> on the Web.

## INTERNET FOR THE NORTH

Internet Direct and Istar Networks are offering a special Internet access package to Amiga users, complete with one month's free access. With the Amiga Surfer and SurfWare packages still unreleased in North America, this marks the first time a nationwide effort has been made to provide a one-stop Internet setup to Amiga users.

The package includes the demo version of AmiTCP 4.0, with companion autodialer, AMosaic Web browser, GUI-FTP client, and telnet client. IDirect and Inforamp will provide regular updates of the software to their customers as it becomes available. The package is currently in stock at Amiga dealers throughout Canada, and the iSTAR and Internet Direct networks have dozens of dialups included in the offer covering Canada's major metropolitan areas. For more information call (001) 905-723-0930.

## OPEN AGAIN FOR BUSINESS

The Wonder Computers chain of Amiga retail stores went into bankruptcy in late January, but Wonder CEO, Mark Habinski, publicly promised the Amiga community he would try his hardest to re-acquire as much of Wonder as possible and re-establish it as a new, debt-free corporation. This has been done.

On 1 May, Wonder Computers International opened their first store and corporate headquarters in Ottawa, Canada. Habinski's bids for the two largest Wonder locations, as well as for the physical capital of the corporate headquarters and the trademarks and rights to the Wonder name, were accepted by the bankruptcy trustees. Keynes Emeruwa, former Marketing Manager of WCI, said of the return of Wonder: "We are more excited

now than ever before. We're looking forward to working with and helping the entire Amiga community. This resurrection is a testament to the success of the Amiga."

Wonder's initial two locations will be the home store and corporate headquarters in Ottawa, with a sales office in Vancouver, British Columbia, and expansion is planned for the city of Toronto as soon as possible. In addition, two western Wonder stores whose assets were acquired by a former Wonder manager may become affiliated with the new company. While the planned World of Amiga Vancouver in June will not be possible, Habinski has indicated that World of Amiga Toronto in December will still be held, and that a date will be announced soon.

## BANDITS ON THE WEB

Dan Barrett, better known to Amiga users for his BLAZEMONGER humour series, has turned from biting sarcasm to somewhat more serious subject matter. His new book from O'Reilly and Associates, entitled 'Bandits on the Information Superhighway', deals with Internet risks, scams, and hoaxes. Barrett deals with security issues, junk e-mail, and other concerns, and works to debunk the myth that the Net is strictly a playground for paedophiles and perverts.

'Bandits' can be found at many bookstores, or can be ordered under ISBN 1-56592-156-9. For more information, you can reach O'Reilly and Associates at (001) 707-829-0515, or read a chapter of the book at <http://www.ora.com/info/bandits/>



## EXTRACTING COVERDISK FILES

Before you even think of putting the coverdisks anywhere near your computer you should make sure you write protect them by moving the black tab in the top corner of the disk, so you can see through the hole. Doing this makes sure you cannot damage your disks in anyway. There is no reason why the coverdisks need to be written to, so even if the computer asks you to write enable the disks, don't do it.

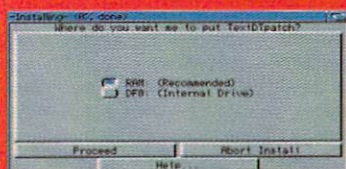
To extract any single archive, simply double-click its icon and follow the on-screen instructions. If you want to quickly extract the program to RAM, select the NOVICE level on the welcome screen and press proceed once on the current screen, and then again on the next. The program can then be found in your RAM disk. Normally most programs need further installing, so read the documents on how to do this.

## HARD DRIVE USERS

Hard drive users do not have to boot with the first disk, but you must make sure you have the Amiga's *Installer* program in your C drawer. To make sure your hard drive has the correct files in place, double-click on the SetupHD icon. This will check if you have the Installer program and if not will copy it across - do not worry as it will not write over any existing files.

All you hard drive owners will find MultiExtract very useful. It is a separate method of extracting the coverdisk files and allows you to extract a number of files in one go, to your hard disk or RAM.

When you run MultiExtract you will be presented with a number of check boxes, each representing one of the programs on that coverdisk. Just de-select all the programs you do not want extracting and then press proceed. All the selected programs can now miraculously be found in the selected destination.



This is MultiExtract for all you sensible people with hard drives

## DISK 1



StormC's advanced debugger allows you to keep track of what your programs are doing



Its huge, a 4Mb demo of StormC.

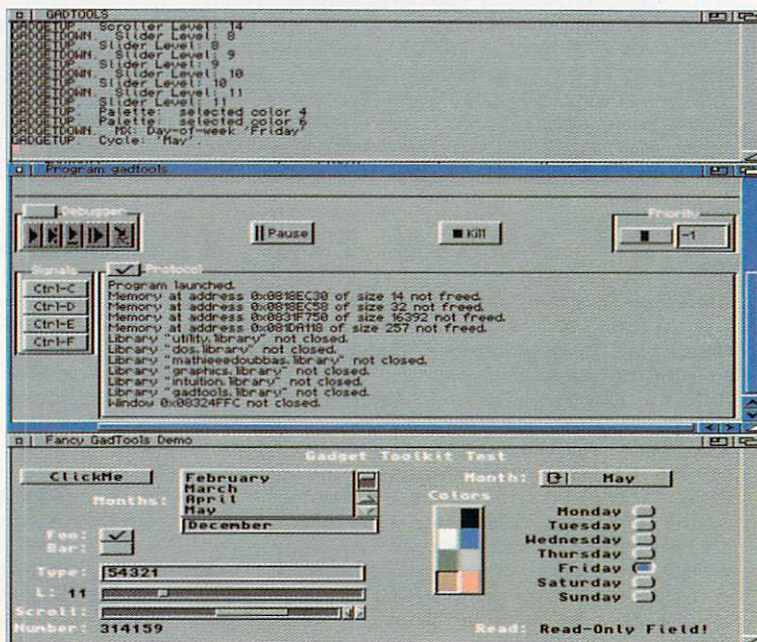
A complete C/C++ development environment for the Amiga

## INSTALLING STORMC

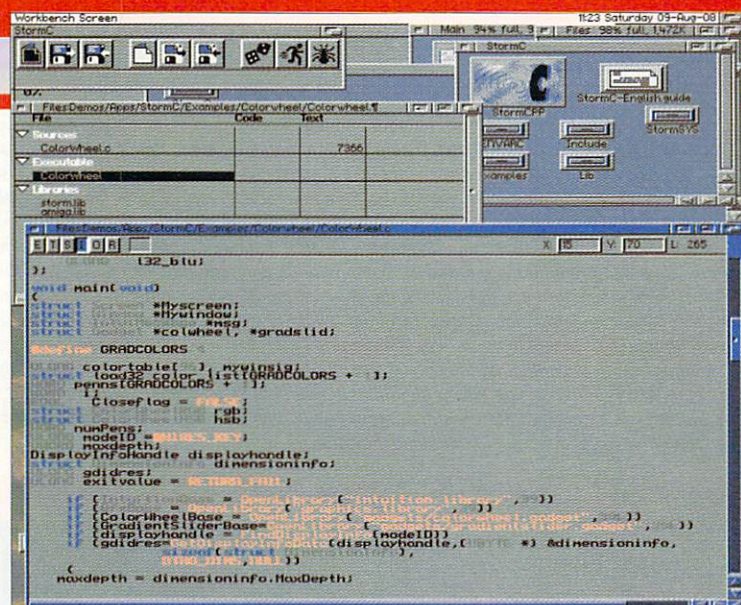
StormC is not a small program as it gives the programmer a complete C/C++ development environment. The total amount of hard drive space required is almost 4Mb. Installation is a matter of a few mouse clicks on the installer icon then all you need to do is say where you want StormC to be placed. The archive is so big we had to spread it over the two coverdisks, so half-way through installation you will be asked to insert the second disk. Once done, StormC is ready to run.

With the StormC demo there are two example programs that you can compile and run. To load them, click on the open project icon and go to the Examples directory. There are two projects already setup for you. One creates a demo Gadtool interface and the other makes use of the Amiga's BOOPSI colour wheel.

Select one and once it is loaded click on the run icon to compile and run the program. This will show you StormC running through its compile and link sequence, and then the debugger that works alongside the compiled program.







With the end of development for SAS C a huge gap was left in the Amiga market. There was no commercial C compiler, and as SAS C never gain object-oriented extensions, this left the Amiga lacking a very important product. StormC looks like it can very easily fill SAS C's boots.

The heart of StormC is the project manager, from which all other components are invoked and are provided with data. The project manager is not simply a better MAKE, but the administrator for all your program modules such as sources, object libraries, documentation, ARexx scripts, pictures and resources, along with compiler, editor and project options.

A further component of the system is the editor, with its ability to emphasise keywords and syntax characteristics colourfully. With this text colouring you can read your program much easier because you will be better able to see its structure. Apart from this it also helps you avoid errors while editing your sources. As soon as a keyword or an Amiga function is entered, the word is marked colourfully and you know you completed it correctly.

Next is the extraordinary debugger, extraordinary because it makes no difference whether the editor or the debugger is running. The debugger uses the abilities of the editor which means that the debugger uses the editor window for its output. Therefore, you can watch the source, set breakpoints, look for functions and variables and so on

with the ease of using the editor. The structuring and the colouring of the source are helping you to do your debugging job.

The most important part of our development system is the compiler. Object-oriented programming is all the rage. Hardly any software developer programs in ANSI C anymore, at least that's the impression I get. The truth, however, is quite the opposite. While many programmers use C++ compilers, these are suited just as well for translating ANSI C code. StormC is a

## STORMC

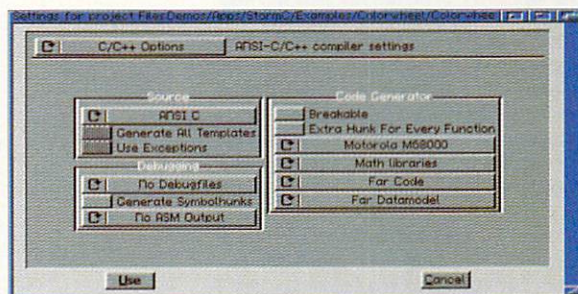
Author: Haage & Partner Computer  
Workbench 2.04, 4Mb Hard Drive Space

The program editor automatically highlights C keywords and commands



compiler for both parties. The traditional programmers will use our very fast and compatible ANSI C compiler, and they can switch to object-oriented programming with C++ at any time, completely or partially. StormC is their tool for the future. The others will use the outstanding C++ compiler. StormC implements C++ according to the design by Bjarne Stroustrup and it supports the extended AT&T 3.0 standard. The compiler generates code for all Motorola 680x0 CPUs including the 68060.

StormC is suitable for all programming projects, be they administrative, graphics, music or game programs. For all these projects StormC should be your first choice. The existing preview version of StormC helps you with the decision for your future compiler system.



The compiler even allows you to produce 060-specific code

## STORMC SPECIAL OFFER **SAVE £90**

The full version of StormC normally costs £265/\$398 but Amiga Computing readers can purchase StormC at the special discount price of DM398/£175/\$265 as long as you order before the 29 May.  
The shipping costs are DM20/£10/US\$15.

To order, send a cheque and your details to:

HAAGE & PARTNER COMPUTER GmbH, PO Box 80, 61191 Rosbach v.d.H. Germany Fax +49 6007 7543

### STORMC ORDER FORM

**Please rush me my copy of StormC**

Please deliver to:

Name (Miss/Ms/Mrs/Mr) \_\_\_\_\_

Address \_\_\_\_\_

Post Code \_\_\_\_\_ Country \_\_\_\_\_ Daytime Phone \_\_\_\_\_

☐ I enclose a US cheque (US readers send personal cheques) plus US \$4 handling charge

Please allow (28 days) for delivery

Please send your order form to:

HAAGE & PARTNER COMPUTER GmbH, PO Box 80, 61191 Rosbach v.d.H., Germany

### FAULTY DISKS

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

TIB Plc, TIB House, 11 Edward Street, Bradford, W. Yorks BD4 7BH.

Please allow 28 days for delivery



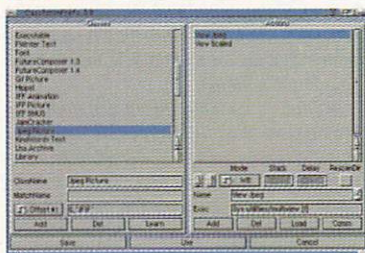


To use the following program you need to have the Magic User Interface v3 installed on your system. Without it you will not be able to run any MUI program. MUI is available from any good PD house.

## CLASSACTION V3

Author: Gasmi Salim

Workbench 2.04 Magic User Interface v3.x



For version 3 ClassAction has gone MUI mad

This is a great program that makes your life a lot easier. When you have a hard drive you end up with all manner of files dotted around, and if you had to have every program necessary to display all these different files you would not have very much room on your Workbench.

ClassAction lets you define a whole host of different file types such as GIF, jpeg, ILBM or any other file you like and specify the program that should display it, leaving you with a single Applcon on your Workbench. If you want to display a picture then you only have to drop the picture file into the Applcon and the corresponding picture viewer will be run.

Once you have installed ClassAction using the provided installer you can run the preference program. As standard there are a good number of predefined file types, but you will have to change the pre-set programs to your own.

ClassAction has a number of handy features that make it very good to use. Firstly, for each file type you define you can have many different actions, so when you drop a file onto the Applcon you get a list of the options you specified. Therefore, for Jpegs you could have normal and grey preview options if you use Fastview.

When it comes to adding new file types, ClassAction gives you a few options, the first is that you can simply define a file name extension, such as #?.jpg to define a Jpeg file. This is not particularly good because any Jpeg file that does not end in .jpg will not be recognised by ClassAction.

The second way is to define the internal structure of a Jpeg file. If you want to know every Jpeg file has the word JFIF six bytes into the file you enter 6,'JFIF' which tells ClassAction to look at the 6th byte in a file and if it matches JFIF then it is a Jpeg. If you do not fancy doing this yourself then ClassAction has the ability to work this out itself. If you pass it a few files of the same type it can analyse them, see what is the same in all of them, and work out how to recognise them in the future.

## DISK 2



## EASY ASSIGN

Author: Piotr Cienak  
Workbench 2.04

If you are the sort of person that likes a neat and tidy hard drive with as few extra icons and files dotted around as possible then this could be of use to you. If you install a game on your hard drive, 9 out of 10 times you have to set up some assigns – usually the name of the disks you are copying the game off. This means you have to create a separate script file to do all the assigns and run the program.

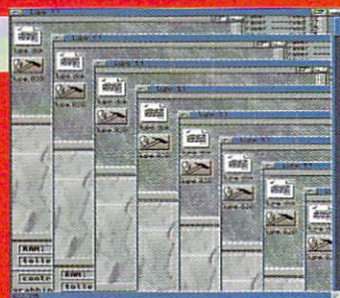
Easy Assign lets you make these assigns from the icon you run the game from which allows you to keep things a little more in order. To use Easy Assign, copy it to your C directory from where it can be run. Next you need to find the game or program you want Easy Assign to work on. You must first change the game's icon from a Tool to a Project type of icon – if you use SwazInfo you can use that to do the job, otherwise you will need to use the IconEdit program.

Once you have done this, set the default tool to EasyAssign, then for each assign you want to make add a new Tooltype called ASSIGN=<device name> for every assign you want to make. You can also run other programs beforehand using the PROG=<name of program> Tooltype. Once all of these have been done the game the icon belongs to will be run.

## LUPE

Author: Frank Toepper  
Workbench 2.04

In one small sentence, Lupe magnifies an area of the screen – that is about the size of it. As far as magnifying programs go, Lupe does about everything you need. You can open it on any screen from its menu, and a handy scroll bar lets you easily change the magnification level. As far as speed is concerned, it is pretty quick and there is a specific 020 optimised version so you can squeeze every last CPU cycle out of it.



Its all going surreal

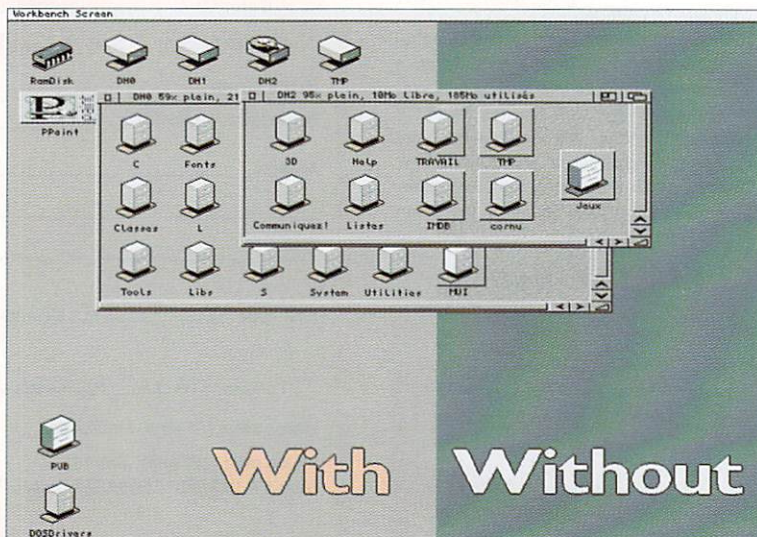
## NO FILL NO DRAW

Author: Kamel Biskri  
Workbench 2.04

These are two tiny programs that change the way Workbench displays its icons. Normally, icons have to have a bevel box around them and they have to be opaque, so you cannot see through them. These two programs, No Fill and No Draw, allow you to stop your Amiga doing both these things and can make your icons look much more natural without the forced bevel. If you want a bevel around an icon you can draw it yourself.

You can either run both the programs by adding them to your startup-sequence or, much easier, drop them into the WBStartup drawer. The NoFill command can cause problems with normal icons as certain colours become see through and the icons can look speckled. The NoFill program is of greatest use to people who use NewIcons, in which case these programs can make your icons look much better.

See-through and borderless icons can look so much better







To use the following program you need to have the **Magic User Interface v3.2** installed on your system. Without it you will not be able to run any MUI program. MUI is available from any good PD house.

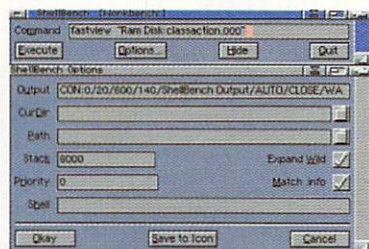
## SHELLBENCH

Author: Nick Christie

Workbench 2.04 Magic User Interface v3.x

What is the quickest way to run a program apart from double-clicking on its icon? That's right, use Workbench's execute function. If you hit right Amiga E a small requester pops up into which you can type the name of the program you want to run. There are problems with this though. Firstly, it completely locks the Workbench which is not good, and secondly, you have to type the entire path of the program in.

ShellBench gives you a completely separate program that runs any program separately from Workbench. It has a history buffer, like the normal Amiga Shell, that you can scroll through using the up and down cursor keys. It will also do filename completion, so if you type part of a file name and then hit Tab, ShellBench does its best to complete the name. If it comes up with more than one answer you can cycle through them all by pressing Tab again. Hit shift and help and you get a file requester allowing you to add a program or file this way. You can even assign your favourite programs to the function keys for quick retrieval.



It may look simple but ShellBench is an excellent replacement for the execute command

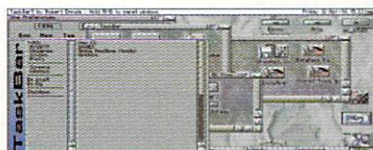
## TASKBAR v5.2

Author: Robert Ennals  
Workbench 2.04

Windows 95 fever is sweeping the nation, and this programmer took a shine to the task bar that you get on the bottom of the screen in Windows 95.

His Amiga version performs the same functions, giving you a quick and easy way to jump to different programs and windows by clicking on the buttons that appear on the task bar.

There is a text-based preference file that comes with TaskBar and this needs to be copied into the ENVARC drawer in the preference drawer. This preference file lets you change a number of points about how TaskBar works. You can vary the number of buttons and the width of the bar, but the main use is to allow you to add programs to its launch window. If you click on the Start button this pops up a menu that lists programs that TaskBar can launch, and these are defined in the preference file.



TaskBar gives you short cuts to both running programs and accessing them

## APPCON

Author: Stephan Fuhrman  
Workbench 2.04

It really is amazing how many good ideas made it into Workbench 2 and even more into version 3, yet so few are used in the standard Amiga programs that you get with your Amiga. Stuff like AppIcons and AppWindows that allow you to drop icons into program's windows.

How many times have you been using the shell on the Workbench and the file name that you are about to type in is there on the screen, but there is simply no way to get the file name into the shell without having to type the complete path in.

Until now, that is. Appcon turns your shell window into an AppWindow that you can drop icons and drawers into. If you copy the program into your C directory when you type Appcon you will now be able to drop icons into the window and its name will appear.

You will probably be best editing the Shell-Startup found in the S directory which is run by every shell before starting, and any commands you place in there will be run before hand.



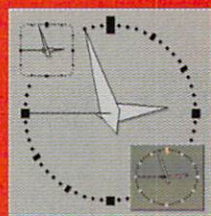
## TOLLEUHR

Author: Gunther Nikl  
Workbench 3.0

What time is it? I don't know. Well you should, and with TolleUhr you will have no excuses. If you imagine an analogue clock, much better looking than any digital one, that you can resize, change the shape of the hands, face and even the colours that everything is drawn in then that is TolleUhr.

There is no installer with TolleUhr so you will have to copy everything across by hand, but there is not very much involved in this. Most importantly, you have to rename and copy the correct tolleuhr.library into your Libs drawer. If you only have an 68000 processor, the one in the A500, then get rid of .000 and copy it across into your Libs drawer.

All the options are changed through TolleUhr's menus - this is not the easiest way to go about things but it works and you have to do it as the initial settings are horrible. When you have got everything as you want, you can move and resize the clock wherever you like and then save your options.



Bigger, smaller, fatter, thinner. Whichever way you want, TolleUhr can do it

## UROUHACK v1.7

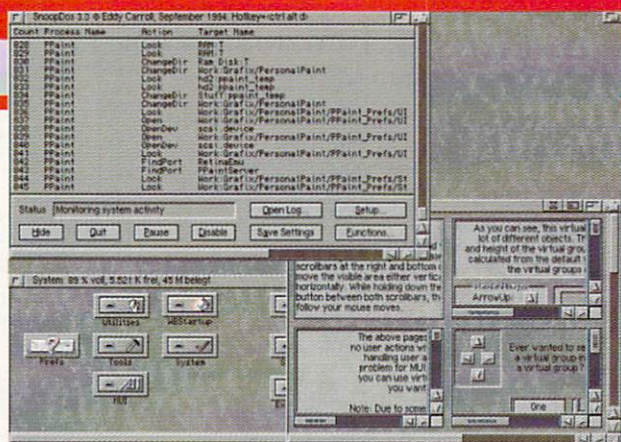
Author: Tinic Urou  
Workbench 2.04

I originally put this on the coverdisk out of curiosity. It's a little hack that changes the look of Gadtool buttons which is great but is not really of any use is it? Well, this latest version is just getting plain silly.

Instead of just giving you the choice a few different looking system gadgets, which would be fair enough, this version now lets you create your own system gadgets. If you do not like the ones that come with UrouHack, fire up your copy of DPaint and draw your own. Using good old Datatypes, UrouHack can accept IFF images and replace the normal window gadgets, check marks and radio buttons with these. Finally,

UrouHack comes with a full installer that will install the program and all UrouHack's files, and also allows you to change your preferences afterwards. Before you use the installer you need to remove your old UrouHack line from your Startup-Sequence - if you already have an older version.

You should remember that UrouHack is a hack and does not work perfectly with all programs. The main problem is with it changing the size of window borders. This either looks bad, or at worst it will crash your machine, as it does with StormC. Therefore, I would recommend you try that out first before you install UrouHack.



I don't like those gadgets, so I will change them. Hey mister that's crazy talk. Not with UrouHack





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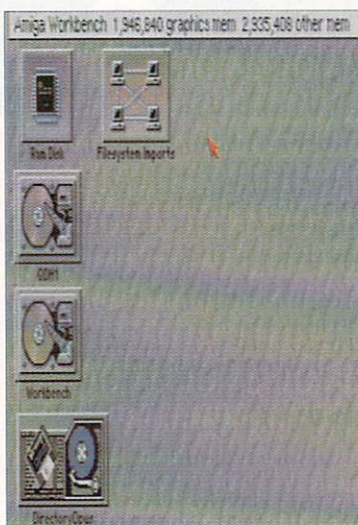


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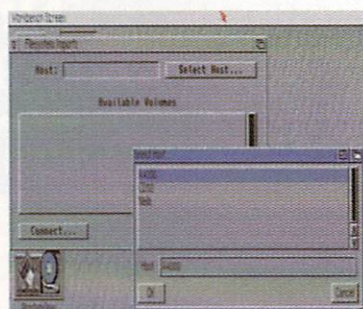
So can you continue to play delights such as Cannon Fodder and Microcosm for the rest of your life? I don't think so.

There were no actual games on the CD32 which took advantage of the machine's capabilities. Unfortunately, all we saw were conversions from the A1200 floppy version so the CDs were released when they weren't even half full. Something should have been done then but CD32 owners were left pretty much in the dark. And once again, it was left for someone else to dig Commodore out of their hole.

Eyeteck are the masterminds behind this fabulous way of turning your CD32 into a fully functioning A1200, making proper use



**You can see that after installing Workbench 3.0 and then MagicWB – your CD32 can look like this**



**I managed to install the networking software Envoy so others could share the delights of my hard drive**

of the CD32's AGA chipset. The actual module makes use of the CD32's expansion port at the back of the machine, although it's not just a case of taking the screw out and sliding

it in. Firstly, you will have to take all the screws out of the main plastic base, making sure not to dislodge the laser ribbon, and then you have to stand the lid up vertically, sticking it down with two sticky pads to aid you, although it may be handy to get someone to hold it while you firmly slide the module into the expansion port while the actual board slides over the metal casing.

All you have to do then is screw it up tightly so you don't see the board through the side of the CD32. The whole fitting process itself caused me no problems

# FULL



Tired of using your **CD32** for games. Now you can turn it into an **A1200** with the SX-32 Module. **Andy Maddock** reveals all

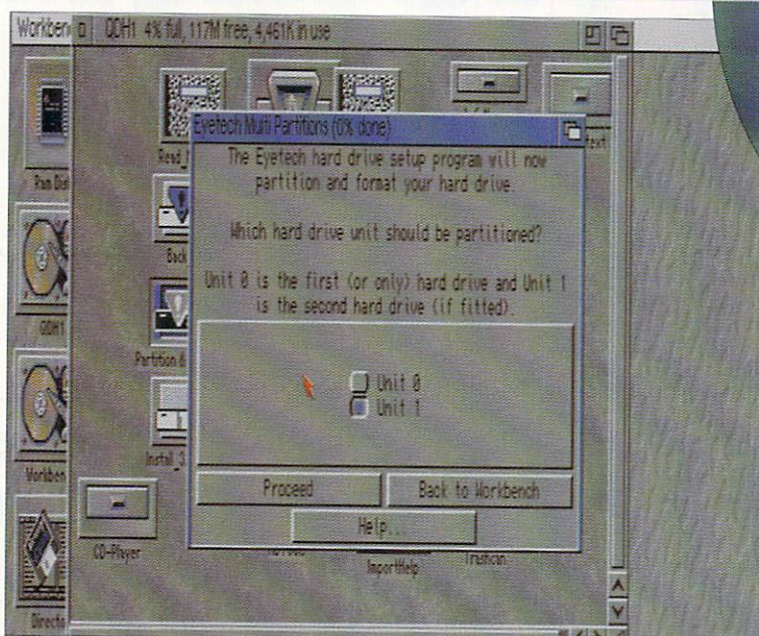
# steam ahead



## COLOUR COORDINATION

It's difficult to see the Amiga A1200 in such a mismatch package. It's all in bits and the CD32 is and always has been an odd blue/grey colour while the rest of Amiga's equipment has always been white or cream. So what exactly was the thinking behind the design? Was it because they were both meant to be completely different pieces of kit?

The only real downpoint of the module is the colour scheme. The cream keyboard and floppy may not look suited next to the blue-like case of the CD32 and powerpack, but who's complaining? If the keyboard was a blue colour similar to that of the CDTV it may look slightly more professional but nowhere near as Amiga or home computer-like.



whatsoever and it managed to slide in with ease and perfectly in conjunction with the instructions.

The module has five ports on the back which give you the access an A1200 can offer. The Parallel port enables you to connect to a printer or onto another Amiga using a Parnet cable, the Serial port lets you connect to a Modem or another networking method via Sernet, and the VGA port in the middle is for a VGA monitor. The external floppy drive will fix up to the drive port and finally there's the video port so you can use an ordinary RGB output for a much sharper picture than the composite, which is your only option with a standalone CD32. If you take a look at the back of an A1200 you will see the SX-32 module now has every port the A1200 has to offer.

That's about all the installation there is – the only thing left is to sort the hard drive out. There is an installation disk with utilities

**"Eyetech are the masterminds behind this fabulous way of turning your CD32 into a fully functioning A1200, making proper use of the CD32's AGA chipset"**

enabling you to read and configure and then partition your hard drive perfectly. Our hard drive was 240Meg which is quite amazing when you imagine it's merely a CD32. In fact, it's impossible to think there is a hard drive in the CD32.

With the SX-32 module you can make use of the AGA chipset, graphic and sound

## SMALL CHANGE

One of the problems you may come up against is the need for a floppy drive. If you've bought yourself a CD32 it's unlikely you will have a floppy drive knocking about. Eyetech are selling them for £44.95 but it may be worthwhile looking around for a second hand floppy drive. You could probably pick one up for about £5 to £15.

After totalling up the prices of the various peripherals it may seem rather expensive, but at the end of the day, if you've already spent nearly £300 on the CD32 itself, maybe it would be worthwhile to invest further to make use of the money you've already spent. The only other options are to put it away to collect dust or revitalise it by turning it into what the CD32 should have been.



A free CD is also included to kick off your CD-ROM fun

The whole package is complimented with an excellent installation disk

software, and something which CD32 owners have never been able to get their heads around – saving. Before, there was always a complicated key method for locking and unlocking save games built in to the CD32's hardware. Finally, you can output all your own files to the hard drive inside or on a floppy via the floppy drive.

What makes the SX-32 module a dream to use is that the actual CD32 unit isn't really modified in any way. Basically, they are all peripherals which merely add-on to the unit itself. For instance, if you have never opened your casing out of curiosity you would never believe there is so much room inside. The hard drive works away quietly and quickly and certainly makes all the difference.

## Bottom line

### REQUIREMENTS

RED essential BLACK recommended



CD32



Floppy drive

### PRODUCT DETAILS

Product	SX-32 Module
Supplier	Eyetech
Price	SX32: £199, Keyboard: £34.95, Floppy drive: £44.95
Tel	+44 (0) 1642 713 185

### SCORES

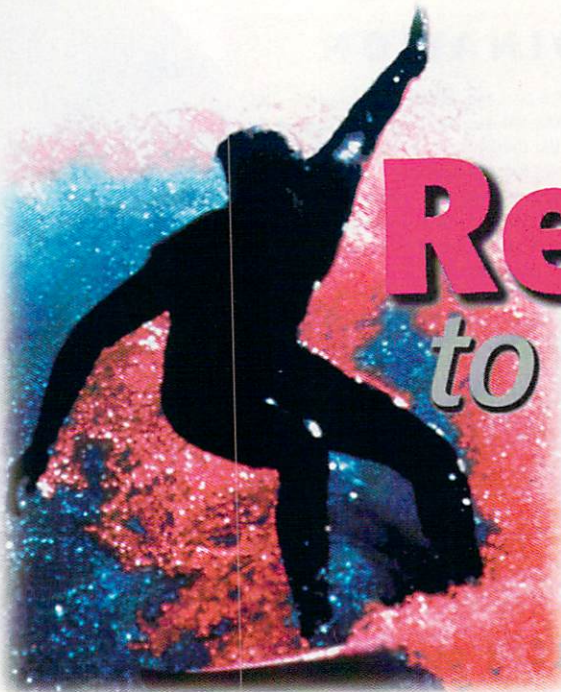
Ease of use	90%
Implementation	92%
Value For Money	81%
Overall	90%



**W**ell if you managed to get through last month's virgin Internet guide you should now be FTPing, IRCing and Web browsing to your heart's content, and you will even be able to receive news and e-mails. This just leaves the subject of setting up AmiTCP so you can send out e-mails.

At the end of last month's guide you will have already installed what is known as an SMTP Daemon. This watches out for new mail that is destined for your machine appearing on your Internet provider's mail server. When you first link up, every few minutes the Daemon checks to see if there is any new mail. If there is it is automatically downloaded from the mail server to the correct mail box in your UUMail directory.

On top of this you need a number of other small programs that many mail programs need to allow mails to be sent from your machine to wherever their destination may be. If you used the Demon DIS95 installer, all these programs have been already set up for you and are happily running in the background sending the mail off. If you did not use the Demon installer then you will have to get hold of the programs that handle e-mail dispatch. To get your mailer up and running you



# Return to sender

If you made it through **Neil Mohr's** AmiTCP guide last month, all you'll be waiting for is to send those **e-mails**. Here's how to do it

has all the files required to post and receive both e-mails and news articles, and it comes with a good installer script that will get you going as quickly as possible.

When installing Amconnect there are a couple of points in the installer script that you do not have to do because you will have created these files last month. The first part is when it asks if you want the mail Daemon

need to get hold of a couple of programs that will spool sent mail and also post it to your mail server. Possibly the easiest way to set up the mail is to get hold of the archive `comm/tcp/Amconnect.lha` from Aminet. This

## Jargon box

**UUencode** – e-mail is used to transmit plain ASCII text files. If you tried to send someone a normal picture or program using e-mail, the person at the other end would just receive a load of garbage. This is because ASCII only uses 7-bits, while a normal binary file uses 8-bits. Therefore, if you try to send a program file it loses every eighth bit. To get around this uuencoding was invented which translates the original binary file into an ASCII alternative that can be sent using e-mail. Once received the file can be uudecoded, leaving the original binary file intact.

**MIME** – Multimedia Internet Mail Extension. This is used by mailers and Web browsers to determine file types and takes the form of extra "packaging" that is sent with your e-mail. This describes what sort of file each part of the mail is, and to allow pictures and other binary files to be sent via e-mail a new form of uuencoding is used called Base64.

**Base64** – is similar to uuencoding in that it performs the same functions but removes some compatibility problems that were associated with uuencoded files.

**SMTP** – Simple Mail Transfer Protocol. This is a set standard for how servers talk to each other. When you send or receive mail your computer talks to your Internet provider's server using SMTP. This runs in the background and you do not have to worry about it.

**Daemon** – a program that lurks in the background waiting for certain conditions to occur before jumping into action. The SMTPd is one such daemon, it waits for mail and then goes and fetches it.

## INTERNATIONAL RESCUE

The Internet is a worldwide phenomena, and you can quite easily find yourself communicating with people from all over the world and not even realise it. Due to the international nature of the Internet you would have expected to be able to use the international characters that are available in the ASCII character set. For English and American users these are not used very much except for the British £ sign, but every other country in the world will need access to umlauts and the other accents found in French and German and most other non-English languages.

The problem is that normal e-mail only uses 7-bits per character, where as ASCII requires 8-bits. So if you try to use a pound sign or any of the other international characters they just appear as spaces to the recipient of the e-mail.

The only way around this situation is to either uuencode your original mail – a little round the houses – or use a MIME mailer. Using MIME you can specify to send e-mails in a number of different formats that will keep all of the international characters intact. Along with being able to send text encoded as Base64, you can tell your mailer to send it as the normal 7-bit or full ASCII 8-bit. As standard the MIME form of text is called quoted-printable and will send you text, so it will not be affected by the normal 7-bit e-mail limit, even though you should be aware that text that you send is word wrapped to 70 chars across. Therefore, if you send a uuencoded file using a MIME mailer you should select 7-bit text as this reproduces what a standard mailer will do



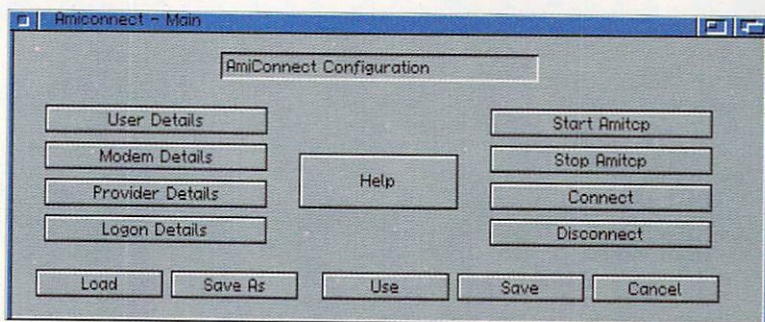
The only way you can use any of these characters is to get hold of one of the Amiga's MIME mailers



installed – this is already in place so you can say no. The second point is that it will ask you where you want a number of directories created, but again these are already in place so you can proceed past all of these without worry.

The installer will then ask you for various details about your Internet account and then your modem setup. Do not worry about the modem details as long as your modem is Hayes compatible, which it should be. When it asks you if you want to change your `uilib:config` file say no because you should have already created this. And that is it.

Amconnect will handle all your setting up and logging on to your Internet account. If the program has trouble connecting to your modem go to the modem setup and change the AT&B1 to AT and make sure all the other entries are in capitals. If you still have prob-



Ⓜ A usable TCP front-end, Amconnect makes getting online that bit easier

lems after this, try reducing the modem speed. Once installed you are ready to rock and roll, apart from the fact you may need to get hold of a mail package. Many people use the Unix ports of Elm or Pine, but these are a little com-

plicated to set up and I prefer something more straightforward. A demo of the new package Voodoo is available on Aminet and also MetaTool is worth a look if you use MUI.



## V O O D O O

The latest, and in some people's opinion, the greatest mailer for the Amiga or any computer, Voodoo is a MIME compliant mailer that provides many features, some of which are unique to Voodoo. The first thing you are going to notice is that with Voodoo, all your actions are performed from a single good looking and simple-to-use GUI.

Voodoo works slightly differently from other mail programs. Usually mail programs keep the destination mail boxes that are created by the SMTP Daemon, but each time you start Voodoo you ask it to collect mail from these files. It will then extract each mail and create a separate file in its own corresponding mail directory.

The demo version of Voodoo only allows you to have a single mail box, but the fully-registered version allows you to have as many as you like. After you have installed Voodoo, which is done for you via a normal install script, you will need to point each Voodoo mail box at the correct mailbox pool file.

Once this is setup, Voodoo will extract all the files from this pool file and generate a list of all the mails in it. For each mail the various MIME parts of it are displayed as icons as part of the speed button bar that runs across the middle of the window. These allow you to jump to each different section of a mail, with text, pictures and sounds all being displayed in the scrollable window. Even uuencoded mail can be

handled automatically with the file being automatically decoded ready for you to save it off as the correct binary file.

When creating mails you can 'insert' new parts to a mail using a file requester. Voodoo then automatically takes care of packing it in the mail, just as it takes care of unpacking it. Currently, you can save off separate MIME sections but there is no way to view pictures on its own screen – you have to make do with the representation in the Voodoo window. Nothing



Ⓜ One of the most recent Amiga mailers, and it shows

can be perfect and there are a few problems with Voodoo, mainly with its interface. For starters, the programmer is on some sort of personal crusade about the fact the Amiga does not have any built-in public screen support. Because of this he has refused to include any option in the program to select a screen to run Voodoo on. This forces you to use a secondary program such as Screen Wizard to allow Voodoo to open on its own screen. He is making a valid point, but there is no need to inhibit your program over it.

Another problem arises from the mail list and the mail viewer being lumped into one window. If you have a good number of mails in your mail box you are stuck to having a fairly small view of this list – it would be much better to have a separate mail list window. This would also open the possibility of being able to read more than one mail at once, which would be nice.

The other problem that arises from the GUI is if a mail has more MIME parts than icons that fit in the tool bar. This means you will never be able to access them, as their icons are not accessible unless you can make the window bigger. Something allowing you to scroll through all the icons would be needed in this situation.

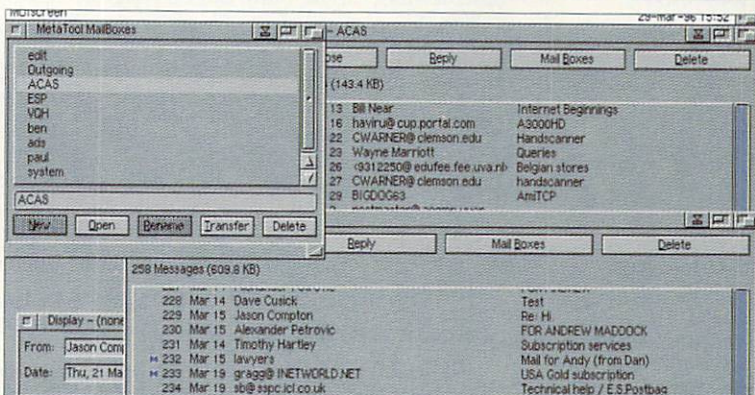
These are only minor quibbles and overall Voodoo is an excellent program that is very easy to use.

## M E T A T O O L

This is another MIME mail reader, and one that we use in the office. It uses MUI which some of you may not like but it is totally based on listviews that are very speedy to use. MetaTool is completely multithreaded, so every window opened in MetaTool works independently of the others. Therefore, you can have multiple mail box windows open as well as being able to read as many mails as you like.

If you followed last month's guide, once you have extracted MetaTool it is ready to run. The only thing you will need to change is MetaTool's `Mailcap` file. For each MIME type you need to specify what external program should be used to view it. Normally MultiView will be fine, but you need to make sure the path of MultiView is correct – this should be `sys:utilities/multiview` otherwise MetaTool will not be able to find MultiView to run.

MetaTool uses the standard mail boxes generated by the SMTP Daemon, and each time you open a mail box MetaTool scans the file generating an index file and mail list. The current version will also automatically update if new mail arrives while you are online, so you do not have to quit the program. It may not be as flash as Voodoo but it is simple and fast to use.



Ⓜ If you have to deal with lots of mail, MetaTool provides a powerful interface



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# QUESTIONS & ANSWERS

I have had an Amiga since the OS 1.2 A500 and would never think of leaving the platform. I also have a Pentium PC which, funnily enough, cost me less than my A1200 setup.

Anyway, to the point of my letter. I read just about all the Amiga magazines that have any serious content and am sick and tired of reading sad letters from whining Amiga users about Escom, AT, software houses, PC and Mac users, etc. and how they are all out to get the Amiga or how the Amiga isn't supported properly.

Then you get the 'lemon heads' (sour faced) going on about how the Amiga multitasks better than any system built. Remember, you can only multitask as far as your physical RAM permits without an MMU. It's great being able to multitask, but if your machine slows to a halt to do it, it ain't much good.

So, I would like to ask a couple of questions and answer a few:

1. Why did we lose the best bits from OS1.2, i.e. no borders around icons, diskdoctor, NotePad, PM (performance monitor), memory map, the graphical tutor (The Very First, if you remember it) and Say?

2. Why do we slag off DOS and Windows 3.x so much when they at least come with Virus Scan, Defrag, ScanDisk, move, Compressed backup, disk doubler, file manager, word processor, card file, Paintbrush, media player, sound recorder, Terminal, on-line help, unformat, undelete, proper sounds, object linking (OLE), extensive printer drivers and a proper clipboard as standard?

3. Why do we say that the Amiga is the only system that can be used straight out of the box? Have you ever tried typing a letter on a TV screen? If you have, I'll be surprised if you can now read this. The Amiga is only good for games out of the box, you need a monitor for any sort of serious use (standard on a PC, you don't even get one with the £2000+ A4000).

Now, here are my answers to some questions:

**Q.** Why don't the software houses write any decent software for the Amiga any more?

**A.** Because you are so tied up slagging off other platforms and 'How they spend so much on upgrading their systems to run the latest software and how great my standard

A500/1200 is'. Try and run Scala or Gloom or load a Jpeg, etc. and see how easy it is. If only you lot would wake up and expand/upgrade your systems (A500/600s are dead), then maybe the world would take note.

**Q.** Why do people think of the Amiga as a games machine and not a serious PC?

**A.** Because just about every user/mag spends most of its time reviewing games (look at the adverts for the Amiga Magic bundle and what do you see - games!), and going on about competing with the console market, etc. The A1200 doesn't even come with a hard drive or monitor as standard.

**Q.** Why don't PC mags mention the Amiga?

**A.** Because they don't care (they do mention Macs). If you lot would build up your machines and stop slagging off other platforms, then the software houses would be back in droves and we would have a platform that could compete.

This letter is dragging on so I won't write much more. You probably think I am a PC convert and you wouldn't be far wrong, but I love my Amiga just as I love PCs, Macs and just about all other platforms - don't knock them until you have tried them.

The thing is that if we only stopped griping and whining we would soon see that we need to tell the world we want to move on, so it can help us. Imagine Netscape, Word, Lotus 123, etc. on the Amiga. It can happen if we want it to.

Finally, sorry there's no 'great mag' and all that, but you don't need me to tell you what you already know.

Kevin Anderson, Waltham Abbey

**A combative stance there from Kevin, and one I think a lot of people in the Amiga community now share. Unfortunately, it often seems as though the people who were upgrading their machines are now the people who have left the Amiga and gone onto the PC, or other platform, while those that never spent a penny on their machines now form the main body of Amiga users and can be justly accused of being moaning minnies.**

I have had people telling me that they are

disappointed that their favourite Doom clone only runs sluggishly on a quarter screen on their machine, but when I ask about an upgrade, they shrug it off as being too expensive to play games. Any Doom game is going to be expensive - a lot of processing power is needed to generate all those 3D graphics - but people would rather bemoan the fact that AB3D2 is too slow, or that Breathless looks rubbish.

# esp

Keep your letters coming in to **Ezra Surf** and you could be a fifty pound prize winner



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

# EXCUSES, EXCUSES

I would like to make two observations arising from articles in the March issue. Firstly, with regard to the article on piracy, any person that uses the cost of games as an excuse to buy pirated games (or indeed any software) is being a touch cheeky. The quick answer to this rather lame postulation is to wait for a while and the price will almost certainly fall to a lower level.

I waited until both Eye of the Beholder 1 and 2 were at £13.99 instead of £30 before making a purchase, and the games themselves did not diminish one iota in the meantime. The same can be said of more recent games as well, both Gloom and Alien Breed can now be bought for under £20 and neither can be described as expensive at this price. I have purchased them both from Special Reserve Mail Order at £19.99 and must say that they are a bargain. Most game prices will fall after the initial release

to a very acceptable price, so let's have no more of this 'games are too expensive' crap.

My next point arises from the review of the PD effort Deluxe Pacman A1200 and the comment that the programmer deserves the fee he asks for. I agree with this and indeed I did so back on 13 December last year when I sent the required fee (by registered post) for the registered game with its extra levels, etc. to Mr Vigdal. I then heard nothing for two months, so sent a letter to Mr Vigdal asking for confirmation as to whether he had received my payment or not. It has now been over a month since I sent my last letter and, as yet, I have had no reply. Even allowing for the shortcomings of the postal service (which are few and far between - Ed), this is a sad state of affairs.

All things considered, I would be reluctant to send

money to another PD programmer in light of this experience and would urge all programmers to honour their commitments if they wish to continue with their trade.

Neil Adams, Cromer

I guess it's a bit like the conversation you can have about books. Do you buy the hardback for between £10 and £20, or do you wait for the paperback version to come out at half the price. I know most of my book collection is softback, but then I suppose there isn't the hype over new books that there is over new games. As for PD programmers, the vast majority, in my experience, are extremely quick to reply to any mail or e-mail and are very happy to receive any sort of payment for their program, so I wouldn't let one bad experience put you off.



## BETTER SOLUTIONS

I have been reading your magazine's US edition since the demise of Amiga World here. I have been impressed overall with the quality of your magazine, even with only limited coverage of goings on here in the States.

I must admit, however, that I was not very impressed with your response to Mr Jose Ferreira's letter in issue 7 of the US edition (that's issue 96 - February for European readers). While I agree that Amiga Technologies is facing an uphill battle trying to convince users that the Amiga is a better choice for them than other computers on the market, I very much disagree that this could be accomplished by making future versions of the Amiga more like other computers.

I cannot vouch for the European market, but I do know that if the new PowerPC-based Amigas are not better at processing graphics and animations than Windows or PowerMac systems for the same cost, it will fail miserably in the US. I am so certain of this that I am willing to put money on it right now.

You might disagree with me, but removing the custom graphics chips from the system to make way for a slower PCI bus



graphics solution hardly seems like an advancement for the Amiga architecture. Adding third-party graphics confusion would not help the situation, unless Amiga Technologies very carefully wrote the standard library routines that these proposed graphics cards used. If you doubt me, pick up any box for a game written for Windows systems and read the system requirements section of the cover. If you don't have a degree in computer systems management, don't expect to understand what you are reading.

A much better solution would seem to be redesigning the custom chips and placing them on the system bus, with a slot added to the motherboard for an upgrade card as better versions of the chip become available. This would probably be similar to the CPU slot on the A3000/4000 machines.

As for the idea that the A1200 currently is a good bargain, again I cannot vouch for the European market, but here in the US it should be possible to put together a 486DX2 66MHz system with 16Mb RAM, 64-bit SVGA graphics (VLB), a 1Gb hard drive, a

16-bit sound card and Windows 95 for only slightly more than an A1200 with a 130Mb hard drive (less than \$100 difference if you shop around). You might have to assemble the system yourself, but at least you would have a decent idea of how to fix it if it ever broke down. You would also have the advantage of a larger software base to choose from. It might not be the killer graphics system that an A4000T is, but it would be considerably less expensive and more versatile overall.

Apple Computer has recently discovered the problem with trying to market cheap, low-end computers in a high-end market by posting a \$68 million loss for the last quarter of 1995. Apple has mostly blamed this loss on expecting the Macintosh Performa line to be the better selling system during the Christmas shopping season. In fact, they are now backlogged on orders for their A/V PowerMac systems and overstocked on their Performa range.

For many people a Windows-based computer is probably better than an Amiga as they will be certain to have support for their computer for some time to come, and seldom have to worry that they will only have

## RENEWAL QUANDARY

I recently received notice that my subscription to *Amiga Computing* is due for renewal. AC is a fine magazine - no question about that - but I am most hesitant to renew. Why? Because in several past issues, columnists and editors have urged readers 'to support Amiga product dealers, especially during this difficult time of transition between the demise of Commodore and the establishment of Escom.' I think that you, as AC, need to know what's happening 'out there' with such dealers.

I own an Amiga 500 with 1Mb RAM, one external floppy drive and an A570 CD-ROM drive, but no hard drive. Obviously, I need to upgrade in order to utilise most of the software products reviewed in *Amiga Computing*. But I do not know enough about upgrade items such as additional RAM hardware, hard drives and interfaces listed in the ads of the dealers. So I wrote a letter in mid-November asking the folk at Software Hut, Sharon Hill, PA, which of the upgrade units listed in their ad would fit my machine. My intention was to order such items once I received the needed information. This would have amounted to a sizeable order.

To date, I have received neither a reply to my letter, nor the letter itself returned by the Postal Service as undeliverable. (In other words, I must conclude it has been ignored.)

Other dealers have been about as unhelpful as Software Hut. So where do I have to go for upgrade hardware? No dealers near here; I would have to order out of the area. How do I support dealers like that?

Sure, I could use the telephone to obtain the needed information. But do you like paying long distance charges for 20 or 30 minutes of being on hold until you give up in frustration? I am not about to use the phone any more.

Most of the information reviewed or published in AC is for units of greater capability than mine. So what good is that information to me right now? The last reason for

my hesitancy is not crucial, but I mention it to complete the picture. The crucial reasons are the obvious uselessness of the adverts since dealers are apparently not too interested in selling Amiga products - at least not the ones needed to upgrade an A500. And crucial, too, is the uselessness of information and reviews for products which will not work on the A500, so for all practical purposes, I have been shoved out of the market.

I have decided to wait and see what Escom do. Wait and see if the Amiga does, indeed, make a comeback. I do like my A500. But if I can't obtain needed hardware or information, why should I buy a magazine which will only add to my discouragement as I read it and realise that none of it is for me.

I would welcome a comment or reply. If I don't hear from you, I will add AC to the same list on which I have put Software Hut and their kind. If in the future, I find a practical use for AC, you will hear from me. And I do thank you for the service I have received from your branch of IDG.

Wilfred L Ziekert, Branson, MO

**While I sympathise with your attempts to contact Amiga dealers to help you upgrade your machine, I think the general consensus of any dealer hearing your tale of woe would be that you would probably save yourself a whole heap of cash if you just put that ageing A500 to one side and bought yourself a new or second-hand A1200 with a hard drive. You would need to replace that A570, but other than that you would have a far superior machine to the one you currently have, even if you do manage to find the remaindered upgrades that are still out there. You would also then have a use for 95 per cent of the material we publish in AC, and have a pretty decent home computer to boot.**

## ONE WORLD

As an Amiga owner, I feel I have to point out that not only is the Amiga going down the drain, but so are Macintoshes, Archimedes and every other independent platform. With the might of Microsoft behind it, can it be long before the only machine anyone will be able to buy will be a PC clone and Windows 95, 96, etc.

This will surely be the end of computer civilisation because with only one producer of software still existing, having bought out everyone else, Microsoft will be so huge it will take them forever to produce new software, and they will only want to make programs for the PC. Many companies who produce innovative software for other platforms have been absorbed into the Microsoft monster like Blue Ribbon Bakery and Wavefront, and where are their products now? You'll probably see them again under a different name with the same bland Microsoft interface and with features you have to pay extra to get over the Microsoft Network which will drive the Internet underground because everyone will have it as standard on their machines.

Barry Mangon, Chingford

Microsoft are now in a position where they not only control the operating system of the world's most widespread platform, but also produce the major software packages. We can but hope that market forces will stop Microsoft from taking over the entire range of computing products before it's too late.



one dealer in town (if that) who might go under at any moment. In all of Silicon Valley I have been able to find just one Amiga dealer, and they seem to be phasing out their Amiga stock. Even small towns in California usually have at least one place where people can get Windows software.

If Amiga Technologies expect to survive in an American computer market, they will have to build a computer that can handle graphics and animation significantly better than other computers on the market, and do it at the same price. This is what the Amiga has always been best at, being a cheaper solution to an SGI Indigo series, not a Mac clone.

I have owned an A3000 almost since they came out and quite admire the little machine's powerful graphics abilities, but if Amiga Technologies think they can convince me to purchase a PowerMac clone with an obscure operating system and a small software base, they had best rethink the situation.

*Edward K. Smallwood, Scotts Valley, California*

**I hate to pick you up on some of the**

**more contradictory statements you have made in your letter to us, Mr Smallwood, but we really need to settle the issue. First you ask for Amiga Technologies to redesign the Amiga graphics chipset to be better than the current standards for the PC, and then you deride the A1200 for only being marginally cheaper than a 486. The reason the A1200 is so expensive now is purely because of its custom chips. If it used a cheap VGA chipset, I'm sure the cost could be practically halved when in conjunction with other, more standard, parts.**

**'Adding third-party graphics confusion', as you say, will be the only way the Amiga will be able to catch up with these other platforms. After all, how long do you think it would take to design this killer graphics chipset? The people who work for companies like Cirrus Logic, Trident, Diamond and others have spent the last six or seven years purely concentrating on graphics chipset design. You then say that the A4000T has a killer graphics system, when in fact, it is no better than the A1200's and falls far short of any current VGA chipset. In**

**short, the best thing the Amiga has going for it is its operating system, and it is this that drags its graphics kicking and screaming into the '90s and gives it some sort of edge over the competition.**

**In my opinion, the only way the Amiga can survive is as a top-notch multi-platform operating system that offers proper multimedia functionality for programs like Scala, etc. on any platform. AT could still make machines, but they should license any custom hardware to other companies who would then be able to make more specialised machines for specific purposes like video editing, network computing, POI displays, 3D modelling and the like.**

**The only way to do this is to make sure the OS can handle every eventuality in terms of libraries for graphics, sound, and pretty much every other operation that can be updated or even replaced by individual manufacturers. There is still an awful lot of work to do to achieve this, but Amiga Technologies have made a start and I can only hope, for all Amiga users' sake, that they succeed in their endeavours.**

## MY SISTER WAS ONCE BITTEN BY A MOOSE...

Hi, I'm a 20-year old Amiga fan who is going to buy the forthcoming A1200+ in summer/early autumn this year. This new machine is believed to be powered by the new Motorola Coldfire hybrid Risc processor with user-accessible SIMM sockets on the motherboard and should be bundled with a Plug and Play Internet bundle. Do you have any further information on the A1200+ and what its features will be?

I really hope the A1200+ will be a world beating machine with a new Workbench and Kickstart on flash ROM for easy upgrading. It could even be called Workbench 96!

Ditching the AGA chipset and going for an emulation of it in a VGA-type system would also be a good idea because it would allow

for easy painless upgrades, for example to 24-bit graphics, 16-bit, studio quality sound with more channels, 3D manipulation and more.

Why not ask AT to sign a deal with RBF software to bundle the forthcoming OctaMED pro Soundstudio package and include the complete set of high quality samples from Walkabout Music with the A1200+? Including the new Doom clone 'Breathless' in the A1200+ bundle would also be an excellent idea, and all at a low price!

*Helge Kvalheim, Flaktveit, Norway*

**Nice to hear from our Norwegian readers. If you've read last month's piece on CeBit**



**96, you'll know a lot more about the A1200+ or Walker, as it is known in development. It is unfortunate that the ColdFire processor hasn't been used for the new machine, but at least it is a whole lot faster than a base A1200. As for Workbench, it would appear that it will be updated, but perhaps not as much as we would all like for this machine. The idea of having Kickstart on a flash ROM might also be scuppered by the fact that Kickstart will now require a 1Mb ROM to sit in, and flash ROMs of that size might be extremely expensive.**

**Still, it's a start on the way to the PowerAmigas of next year and we can all hope for an Amiga renaissance!**

## ANCIENT HISTORY

I was rooting about in a little used cupboard over the weekend and discovered a book entitled 'Choosing and using your home computer, an introductory course.' It was published by Orbis in 1984 and to be honest I have never before read it in any depth. Fascinating stuff, mostly basics about what and how to do it, as you would expect, but some of the comments make fascinating reading in 1996, particularly in context with the on-going Amiga vs. PC saga.

There is an early comparison between various models with a graph showing how the price of 'the micro' has fallen since the Apple II which in 1978 cost £995, down through the various machines until the Commodore 64 which was quoted as 'Approx. £200' in 1984. At the end of the introduction to that particular graph, the book said: 'these are selling prices from dealers of the most

competitively priced computers with at least 16K of RAM' Wow! One of the comments in the review of the 64 was enlightening - 'the User's Guide is of the low standard associated with Commodore manuals' - they never learned, did they? Most of the problems I had as a beginner were directly associated with the unclear instruction manual I received with my A1200.

I won't bore you with any more, but it serves to highlight the current debate between Amiga users in all their varieties and the current preference being shown towards the PC in certain quarters. I read, for instance, in the leading PC magazine, that the reason the 486 was being offered complete at only £499 (including VAT!), was certainly that PC users must 'now consider the Pentium 100 with at least 16Mb RAM as the entry point...'. I would only comment from a personal

viewpoint, that as far as I am concerned my Amiga 1200 with 4Mb RAM and a 170Mb Hard drive, plus my lovely Zip drive, all working happily through my HiQ Workstation via the Squirrel SCSI interface does all that I ask of it, or need it to do. And when using FastView, I can view all the pictures I need in glorious colour as near to instantly as makes no difference - so who needs to spend much more than £1500 to get a Pentium 100?

*Ian Aisbitt, Hulton, N Yorkshire*

**Nice to hear from you again Ian. As Kevin Anderson said, people should get whatever best suits their needs, and it looks like you've found your ideal machine, so why worry? Even in five years your Amiga will still be doing all it is today, which might just still be enough for your needs.**



**A** 100th issue deserves something special, and this month's public domain and shareware selection would certainly seem to fit the bill.

Honourable mention this month goes to the latest version of ClassAction, version 2.7 of which I seem to remember reviewing a while back. ClassAction creates an Applcon which can trigger all sorts of different programs when files are dropped onto it. Version 3 not only implements the Commodity controls properly, but also uses the incredibly popular Magic User Interface. The Preferences program, which is used to define exactly what actions are performed on given filetypes, also includes a 'Learn' mode which allows you to teach ClassAction to recognise various file formats. ClassAction is an extremely handy utility to have knocking around your Workbench, and is available either from a PD dealer near you, or on Aminet.

# public sector

Dave Cusick sniffs the centennial PD trough with an air of quiet inquisitiveness, or something

## LIARS

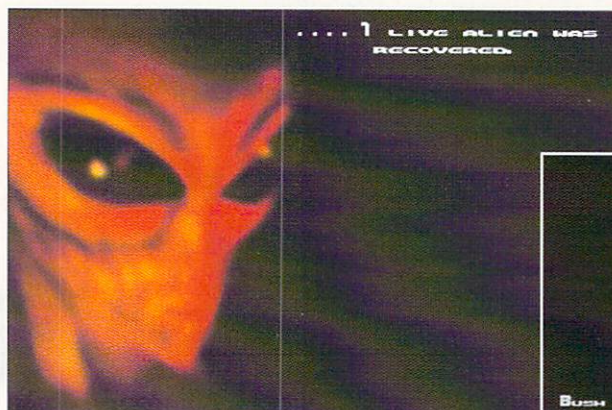
Produced by: Nerve Axis  
Available from: OnLine PD  
Disk No: OX302A/B

Liars is not so much a demo as, well, a public information broadcast, or something. Dispensing with the customary wibbling shapes and generically cheesy dance tunes (at least until near the end), Liars attempts to educate the world at large about the full extent of the nasty American government's involvement with alien races.

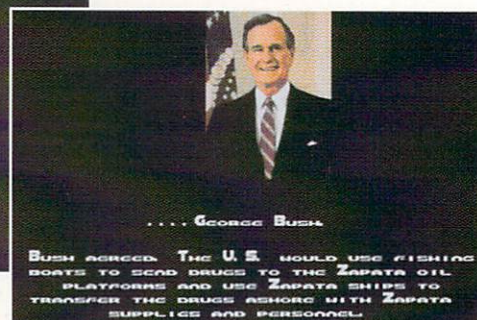
Apparently, the Americans made an agreement with aliens over 30 years ago, gaining the benefits of alien technology in exchange for covering up the continued abduction of human beings. Eisenhower initially negotiated with the extra-terrestrials, but Presidents right through to George Bush are alleged to have been involved. Liars claims government officials who didn't like the situation and threatened to tell were systematically eliminated. John F Kennedy found out and so, claim

Nerve Axis, his driver shot him on that fateful day in Dallas. Whether or not you believe the rather amazing claims made on this disk is up

to you. Liars doesn't feature stunning graphics, and it doesn't offer much in the way of visual excitement or sonic fulfilment. However, it's nice to see a demo that attempts to do something slightly different, and even if you come to the conclusion that the whole thing is just a figment of some bored individual's imagination, Liars still makes an entertaining read.



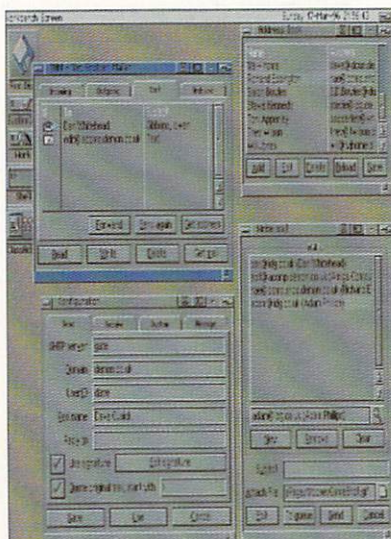
Liars: Believe it if you dare...



...or if you're just gullible

## YAM

Programmed by: Marcel Beck  
Available from: Aminet (as comm/mail/yam12.lha)



Yet Another Mailer: but at least this time it's one of the best around

The Magic User Interface plan for world domination continues apace. Hot on the heels of the superb AmFTP and AmIRC packages (which will, of course, feature in the new Amiga Internet bundle) comes Yet Another Mailer, which also uses MUI and consequently also boasts a stunningly attractive and easy-to-use interface.

YAM also has an impressive range of features. The address book facility is well implemented, and the configuration screen is fairly straightforward. There is a built-in UU encoder/decoder, meaning binary files can be sent and received. There's even an ARexx port, so other programs can control YAM - AMosaic for instance - and script files can be used to run mailing lists.

Interestingly, YAM does not use external programs to send and receive mail, unlike Voodoo, the mailer Amiga Technologies chose for their bundle. This makes YAM incredibly easy to set up and use. Unfortunately, as far as I can see it may also mean YAM is of no use to Demon subscribers because with Demon, users receive their mail using a different system to the one YAM supports. Still, if you use another service provider (or if there turns out to be a simple way around this), then I'd strongly recommend getting hold of YAM.

## TASKBAR 4.29

Programmed by: Robert Ennals  
Available from: Aminet (as util/wb/taskbar4.lha)

Windows 95 eh? A multi-million dollar advertising campaign, total media saturation, that dreadful Rolling Stones tune... and all for a piece of software that simply enables nasty PC compatibles to do what the Amiga and Apple Macintosh have been doing for years. And it doesn't even do that very well.

Still, some people like the odd thing about Windows 95. Robert Ennals liked the taskbar feature so much he wrote a program that simulates it on the Amiga.

Taskbar can open on any public screen you care to specify. It makes a thin little bar appear across the bottom of the screen, displaying current tasks and allowing you to flick instantly between them with a simple click. It can launch tasks from the start bar and is easily customised to suit your personal needs. Taskbar automatically adapts itself to the font and screen mode of whatever public screen it is running on.

This fourth incarnation, which boasts a number of significant improvements and bug fixes over the popular version 3, weighs in at a handy 32k, meaning it's ever-so-slightly more memory efficient than Windows. If you don't fancy having a Toolmanager dock floating around, Taskbar is a stylish alternative.



# BOMB (BATTLE OF THE MASTER BOMBERS)

Programmed by: Silicon Circus

Available from: Aminet (as game/2play/bombv1\_2.lha)

The aptly but appallingly named BOMB is a Bomberman/Dynablast clone, which happens to have won a competition in a certain rival magazine. However, I won't hold that against what is an otherwise magnificent game.

I must confess that in my time I have participated in rather too many late night Bomberman sessions on the MegaDrive to approach any clone without a hint of suspicion. Copying such gaming perfection with any degree of success is invariably a tall order, and is rarely achieved. The AMOS-written BOMB is definitely one of the better attempts.

Although the game does have a one-player mode, the real fun comes when up

to four players participate in a highly chaotic bomb-fest. The objective is simply to blow up your opponents, but if you've never experienced a good Bomberman clone, you really don't know what you are missing. It is probably the greatest multiplayer game in existence.

This demo version of BOMB features plenty of power-ups, fast and frenetic gameplay, and hours of irritatingly addictive entertainment. However, for a paltry fiver you can register with the authors. For your trouble you'll receive a version featuring even more power ups, a serial link option incorporating 'Widescreen Large-o-rama', league and cup competitions, and all manner of other tasty titbits. Cool.

⚠ Bomberman clones should carry a public health warning they are so addictive



⚠ BOMB: Tip top, four-player frolics

## ALL I REALLY WANT

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

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

## YOU OUGHTA KNOW

Frustrated by all this talk of Aminet? Irritated that you don't have a modem with which to access this vast on-line software archive? Despair no longer, for Your Choice PD now offer an interesting alternative.

The idea is that you order their two-disk Aminet catalogue for a quid, sift through the index of files available on-line using the attractive interface, and write down the archives you'd like to get hold of. The next step is to contact Your Choice, who will download them for you at a cost of £1.50 per disk. Since everything on Aminet is archived in Lha format, a fair few archives can often be squeezed onto an 800k floppy, so the service should offer very good value for money. Your Choice say they'll even update the catalogue disks free of charge. Isn't that nice?

## BORIS BALL

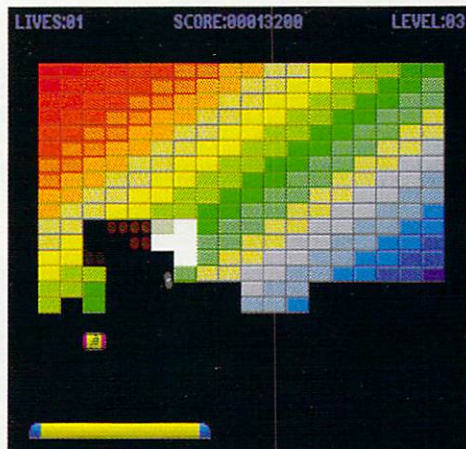
Programmed by:

Available from: F1 Licenceware Disk No: F1-133

Admittedly, there are far too many Breakout clones already in existence. Practically every programmer has probably attempted to create one at some point, and fortunately, as with so many simple ideas, the result is usually a highly entertaining game. Boris Ball is no exception.

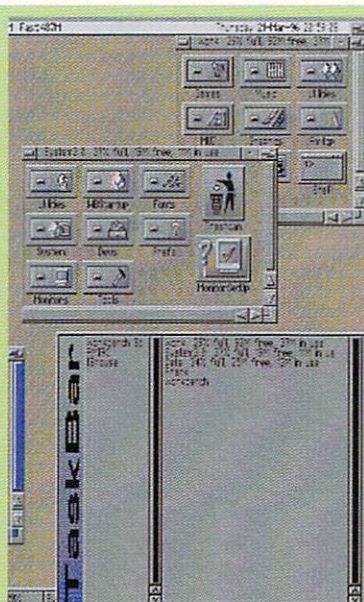
The graphics are smooth and effective and the sampled sound effects are nicely done. There are also ample bonuses to keep the gameplay interesting, ranging from ones changing the size of your bat to those giving you extra balls and suchlike. You can also have lasers mounted on your bat with which to demolish more blocks, confusing bonuses which reverse the direction the mouse must be moved in, gravity bonuses which suck your balls towards the edges of the screen, level clearance bonuses, ones which allow the ball to pass through all the blocks including the metal ones... the list is seemingly endless.

There are five different speed settings and there's even a handy built-in help mode which will remind you



⚠ It's, um, Breakout

what a certain bonus does when you are in the thick of the action. And if by any chance you should tire of the 100 levels which are provided, you can create up to 100 of your own using the built-in level designer.



⚠ Bring the joys(?) of Windows 95 to a Workbench near you with Taskbar



# GOURMET GURU DEMO/WINE STEWARD

Programmed by: Len Platt/Mike Richan  
Available from: Roberta Smith DTP  
Disk No: OS221

Gourmet Guru offers the perfect solution for flustered folks planning dinner parties. It allows you to build up a complete database of recipes, which can then be searched using a variety of filters: for instance, you could ask it to suggest a recipe for six people, or one involving Coriander.

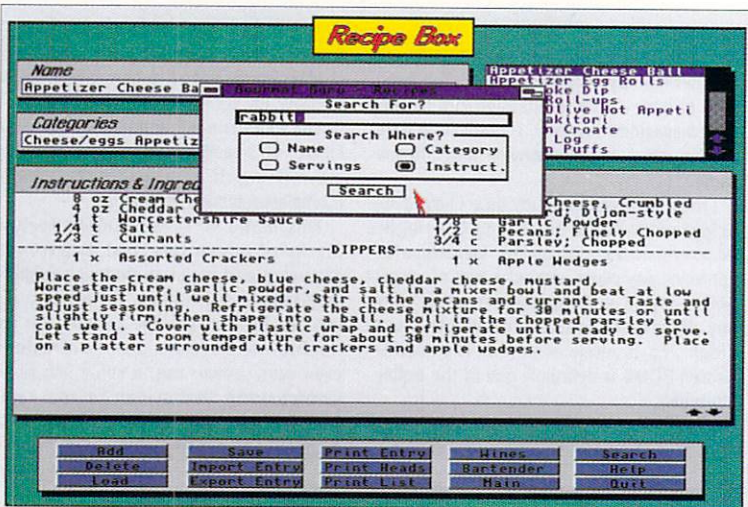
Gourmet Guru has a colourful and attractive graphical user interface, and there are enough example recipes supplied with it to get any database off to a decent start. There is also a built-in Bartender offering a wide selection of cocktail recipes, and a wine list, although this only has a couple of entries included.

As a result, Wine Steward compliments Gourmet rather nicely. Once you've picked a meal it can be used to suggest a suitable wine, briefly describing the wine and offering various helpful details. Although rather primitive in presentation and design, it's

Very nice... but give me a Chicken Biryani any day, with a side order of Keema Nan and stuff

not a bad effort. Both programs are shareware, although the Wine Steward demo is probably the more crippled of the two in that only a few wine facts are actually given

in comparison to those in the full version. Gourmet Guru is a strong title in its own right, and for that reason keen amateur chefs are advised to seek out this disk.



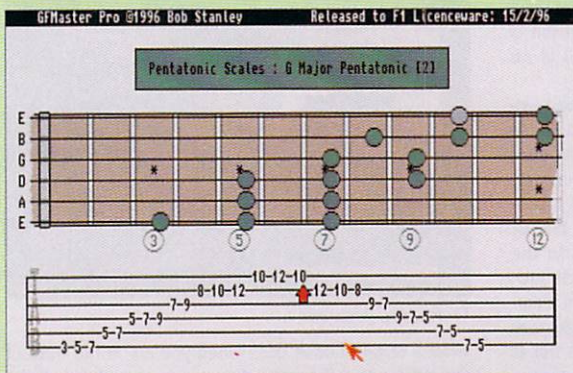
## GUITAR FRETMASTER

Programmed by: Bob Stanley  
Available from: F1 Licenceware Disk No: F1-132

Guitar Fret master is a friendly and well designed tuition tool. Its basic purpose is to teach you to play scales, whether they be major, harmonic minor, melodic minor, modal, pentatonic or extended pentatonic. It also teaches arpeggios, and there are numerous drills, starting with basic ones and working up to the introduction of Dire Straits' Private Investigations.

Selecting the scale you wish to attempt causes various coloured blobs to start appearing on a graphical representation of the fretboard, indicating precisely where each finger should be at any given moment. You can also optionally have your Amiga produce the note you are supposed to be playing. However, I can see this being more of a hindrance than a help because the note is a rather tinny internal effect as opposed to a sound sample.

Also included on the disk is a large AmigaGuide Guitar file. This includes plenty of fascinating background information from the history of various types of guitar right through to instructions for tuning up, fitting strings and generally caring for your instrument. The explanation of guitar tablature is sure to be helpful, and there is even a quick glossary of guitar terminology. This guide makes for a handy addition to a very useful disk.



Wouldn't it be weird if it turned out Noel Gallagher had learned to play the guitar using an Amiga program. Or something

## BREED 96

Programmed by: Damian Tarnawsky  
Available from: Aminet (as game/misc/breed96.lha)

Cross Sim City with Dune 2 and you'd end up with something similar to Breed 96. Your task is, essentially, to build and run a space colony, meeting the needs of the inhabitants and protecting it from alien invaders.

Breed 96 is a brilliant strategy game which offers a wealth of gaming possibilities. Your first priority will surely be to ensure there are adequate residential facilities and your inhabitants have sufficient food. Then you will have to establish law enforcement agencies, make sure the employment level doesn't soar, and ensure there is ample electrical power to keep things running nicely. On top of this, new technologies can be researched, trading alliances can be formed with neighbouring planets, and interstellar wars can be waged.

The graphics are suitably dinky and detailed, and unsurprisingly are rather reminiscent of those of Sim City. Some nice animations are also included - whilst you go

about building and managing the colony, traffic crawls around your road network, ships dock and unload their cargos, and alien droids rampage around the outskirts of your settlement.

You can save your colony to disk at any point and continue the game at a later date, and therefore you will probably become quite attached to your little world. It is the sort of game you can totally immerse yourself in for hours on end, and is also another example of an excellent game written in the all too frequently belittled Amos.



Breed 96: a bit like an enhanced Sim City in space

## HAND IN MY POCKET

F1 Licenceware  
31 Wellington Road, Exeter, Devon  
EX2 9DU  
Tel: 01392 493580

Online PD  
The Cloisters, Halsall Lane,  
Formby, Liverpool L37 3PX  
Tel: 01704 834335

Roberta Smith  
190 Falloden Way, Hampstead  
Garden Suburb, London NW11 6JE  
Tel: 0181-455 1626

Your Choice PD  
39 Lambton Road, Chorlton,  
Manchester M21 0ZJ  
Tel: 0161-881 8994



## DRIVING QUESTIONS

**?** I have an Amiga 1200 with a 120Mb IDE hard drive and OS 3.1. I currently plan to buy a CD-ROM drive with a Squirrel interface and also intend to buy a larger internal hard drive with more space.

How do I put in the hard drive myself? If I buy a SCSI internal drive would I still need the Squirrel interface? Would I still need some kind of interface for a SCSI hard drive? Your advice is appreciated.

*Michael, Fair Lawn, New Jersey.*

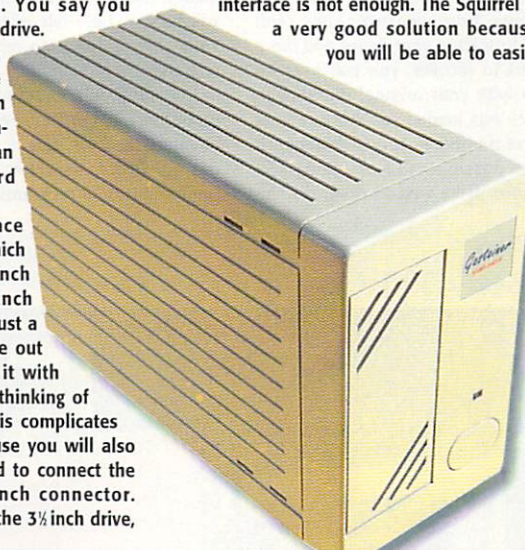
**💡** If you intend to buy a CD-ROM drive for your A1200 then the Squirrel is your best bet, and it really is just a case of slotting it into your PC slot and installing the software. You say you intend to buy an internal drive.

This would mean you would have to remove the current drive you have in your A1200 as there is simply not enough room in an A1200 to have two hard drives.

If you intend to replace your internal IDE drive, which I am assuming is a 2½ inch drive, fitting a new 2½ inch drive is very simple. It is just a case of taking the old one out of its tray and replacing it with your new one. If you are thinking of getting a 3½ inch drive this complicates things a little more because you will also need a new interface lead to connect the 3½ inch drive to a 2½ inch connector. Depending on the size of the 3½ inch drive,

it may also be necessary to modify your computer's case.

I would think your best bet is to go for an external SCSI hard drive because you cannot fit a SCSI hard drive internally on an A1200. The difference between SCSI and IDE drives is that IDE drives have the interface electronics built into the drive, while SCSI drives rely on an external interface such as the Squirrel. Therefore, just owning a SCSI interface is not enough. The Squirrel is a very good solution because you will be able to easily



*You will never regret owning one of these – even 1Gb drives are not very cheap*



You want problems solved,  
you've got problems solved

fit your CD-ROM drive and an external hard drive. With all this extra hard drive space you may want to repartition your internal drive, giving yourself a larger Workbench partition. Depending on the size of your external SCSI drive, it may be a good idea to use the entire 120Mb as your Workbench partition.

The easiest way to do this is once you have set up your Squirrel with the external hard drive, you will be able to drag over your entire Workbench partition to the external drive. Now use the Squirrel software to produce a boot floppy disk, and then repartition the internal IDE drive. Doing this destroys all the data on the drive. If you now boot using the Squirrel disk you will be able to drag your backup copy of Workbench back over to the new internal partition.

## IMAGE PERPLEX

**?** I have an Amiga 1200 with an 850Mb hard drive. Last June I installed Image FX onto my DH1 partition and deleted it two months later as image processing is not really my scene.

The problem is that now when I load some PD utilities, I get the message 'please insert ImageFX – cancel/retry'. Then the program loads with no further problems. Sometimes I am asked for the AmigaGuide library but this is in my Libs drawer.

I have tried SnoopDos but am unable to find which libraries or files are missing. By the way, I deleted ImageFX by highlighting the icon and deleting it from Workbench.

*Adrian Bernascone, West Sussex*

**💡** My first reaction would be that ImageFX may have added an extra path in the user startup, but as far as I know it only adds an assign and a new drawer in the Env: directory.

Generally, when you install software, using the normal Installer program we use on the coverdisks, many programs add a few lines to the user-startup file which is found

in the S drawer. Usually this is limited to an assign statement, but some programs such as MUI can add quite a lot.

This all means that when you come to removing a program from your hard drive, it is not only a case of deleting the program's directory, but also removing its related lines from the user-startup – not the most friendly way of working, I know. This is a problem with the Amiga's assigns, and you can blame Commodore for not implementing some sort of assign demon that sits in the background watching assigned programs and updating them when programs are moved or deleted, and programmers for not using the PROGDIR assign more often, which could potentially do away with assigns.

The best advice I can give is to tell you to carefully check your User-Startup, Shell-Startup and Startup-Sequence for any mention of ImageFX and remove it from these files.

As for the AmigaGuide library problem, there are a couple of versions doing the rounds – one is for workbench 1.3 and is around 70k, the other is the one you get with your Workbench disks and is around 20k.

## Jargon box

**IDE** – Integrated Drive Electronics, the hard drive interface found on A600, A1200 and A4000. The cheapest way to get a hard drive connected to a computer

**SCSI** – Small Computer Systems Interface, a more complex interface than IDE allowing all manner of peripherals to be connected to it, and as many as seven devices

**Partition** – when a hard drive is 'split' into sections these individual sections are called partitions and appear to be independent drives

**Library** – part of the Amiga operating system, libraries allow AmigaDOS to be extendable, so if you want to add new functions you just add new libraries

**RISC** – Reduced Instruction Set Computer, a design methodology that makes the processor as fast as possible by streamlining the execution path. The first step is to use only the most essential commands, so reducing the number used

**CISC** – Complex Instruction Set Computer, basically designed to make writing programs as simple as possible by putting the complexity in the processors command set and not the compiler

**C++** – An extension to the normal C language that gives it object-oriented abilities, allowing functions to share and inherit abilities from other functions



## STUPID FRANK

I am 5' 10" but am standing in a pool of s\*\*t 6' 0" deep. Before I go any further I have an A500+ with 6Mb and a 120Mb GVP hard drive. I've had this lot for about five years doing bits of DTP, invoices, work sheets, bill heads and stuff like that, and have never bothered about how and why things worked, just as long as they did.

Last week I could not go out because of a chest infection, and being at a bit of a loose end I thought I would tidy up five years of rubbish that had accumulated on both DH0 and DH1. I went a bit silly deleting files I thought I did not need, but obviously some of those I deleted were definitely needed because when I went to boot up from the hard drive all I got was what looks like a CLI screen with:

```
AmigaDOS
copyright© 1985-1991 Commodore-Amiga
All Rights Reserved
```

I had the stuff I wanted backed up on floppies, so in my little tin pot way I thought 'No problem, I'll just reformat the hard drive'. That was mistake number two. Number three came when I tried to get everything back with Quarterback - a coverdisk back in December 1993 - but this just seemed to make things worse. Could

you please tell me what to do to get back to normal, and I promise not to be stupid ever again. Also, please inform the rest of your readers to follow the great American saying: 'If it aint broke don't fix it'

*Stupid Frank, Manchester*



Oh dear, it looks like you managed to get yourself in a right mess here. I will start off by saying it is a good idea to go through your hard drive and remove old/unnecessary files, as long as you do not start trashing the system files. This is one reason for always having two partitions - one containing all your Workbench files and the other for your day-to-day work files. If you then delete stuff from your Work partition you will not damage any of those all important system files, but you should learn from your mistakes.

The first priority is to get your Workbench back up and running. Assuming, from what you have said, you have completely formatted your drives and there is nothing of use left to recover, you will need to boot your computer with your original Workbench disk. Once Workbench has loaded you will see your now empty hard drive partitions. To get Workbench set up as quickly as possible, and assuming you do not have any hard drive install disk, do the

following.

1. Select your DH0 partition and do a quick format on it to make sure it is completely empty
2. Open up the Workbench disk's icon and select 'show all files' from the Window menu
3. Press the right Amiga and A keys, to select all the files in the Workbench window
4. Holding the shift key down, drag all the files over to your DH0 partition
5. Once all the files are copied, reset your machine and Workbench should bootup from the once defunct drive.

This will give you a working Workbench on your hard drive, but it does not do much to get your lost files back. If you cannot get any files back from the backup you have done then there is very little you can do in retrieving the old files. It may be possible to use something like DiskSalv, but if you have formatted the drive and written back over it then there will be very little left intact for DiskSalv to recover. Your only option is to reinstall your software from scratch.

A general rule to follow when deleting files is, do not touch your Workbench files. These are things in your C, S, Devs, Libs, L, Classes and Locale drawers. Just stick to removing old data files such as pictures and text, or programs you do not use any more.

## SLOW 60s

Nemac IV, your so-called system friendly game, doesn't work on an Amiga fitted with an 060 chip. This also applies to Breathless. It is a worrying trend that makes both the companies that write these games look very unprofessional indeed. The 060 may only be used by a small number of people now, but as time progresses and the 060 boards for the A1200 arrive, this number will surely increase.

It is annoying to find that spending money upgrading your machines actually reduces the amount of software that it can run, and not the opposite. Publishers should maximise their markets and not alienate high-end users. ECS compatibility is sensible, after all the PC does this in its support of lower-end graphics such as VGA as well as SVGA, but more powerful AGA machines should not be ignored.

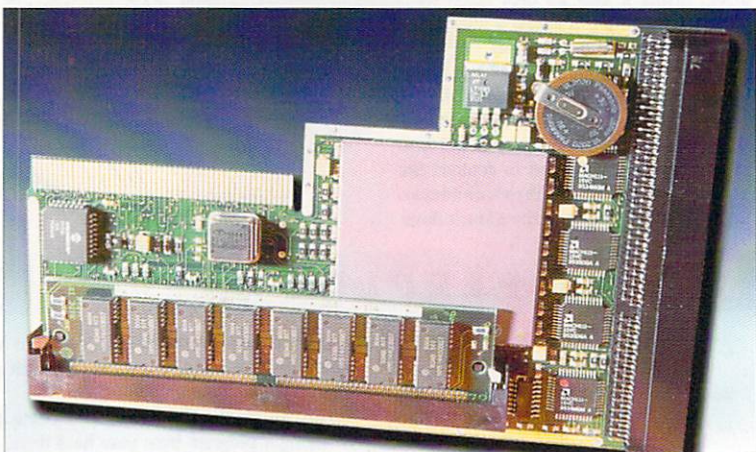
*Sam Smith, North Yorkshire*



What we found when trying the Blizzard 1260 board is that games such as Nemac IV and Breathless ran, but incredibly slowly. This is to do with how the 060 works, and is something the software programmers could not have foreseen. To stream line the 060 execution path, not all the 680x0 instructions are built into the 060.

Unknown instructions cause a trap and during the trap the emulation has to find the right emulation routine and run this function. In a trap the processor is in the Supervisor mode and no other tasks can run. This effect is visible by the mouse jerking around. The system will become more unusable the more unimplemented instructions are used by a program. If you buy the

*Most programs run incredibly quickly, but one or two cause problems for the 060*



Blizzard 1260 you get a program with it called CyberPatcher that attempts to change the instructions in these programs to one that will not cause a trap, therefore making the program run at full speed. One such program is Mand2000 which goes from running at around the same speed as an A1200 to running almost three times faster than an A4000. Unfortunately, this patch does not have any effect on Nemac IV and Breathless.

You might like to know that Alien Breed - The Killing Fields also suffers from this problem, but the CyberPatcher program does work, therefore allowing you to run the game on full screen.

The only real way around this current situation is to recompile programs especially for the 060 chip - perhaps the companies could provide an upgrade to 060 owners. The compiler would then make sure that the

code ran as fast as possible and remove all these speed problems. The problem with this fool-proof plan is that I am not sure if any such compiler exists. There is, however, a new C++ compiler coming out from Germany called StormC that can apparently compile optimised 060 code.

I do sympathise with how you feel - when the A1200 first came out many programs fell straight over. This was them either doing naughty things to the chipset or it was their use of self modifying code that choked on the 020's cache. We at Amiga Computing have always complained when software did not support accelerated machines and hard drives. If they do not do this, what is the point in upgrading in the first place? The 060 situation is an unfortunate, but unavoidable, one and you really are at the mercy of the software manufacturers producing 060 versions of the original.



## SLOW SCREENS

I thought my current setup was all that I would want. I have an Amiga 1200 with 8Mb FastRAM and a Viper board with an FPU. I mainly use the Amiga to access the Internet and for playing games. I originally got more RAM because I found out that the screen slowed down when a lot of windows were opened. At times it goes so bad that the mouse would sometimes hardly move, or the computer would freeze, and this was with 4Mb sometimes still available.

I may have got it wrong but I think I might need a graphics card or something. I wondered if you could help me out by letting me know what I need, and the rough cost.

Mark Williams, [williams@madmark.demon.co.uk](mailto:williams@madmark.demon.co.uk)

Unfortunately, you are pushing the Amiga's graphics to the limit. To correctly redraw the Workbench screen every window needs to be refreshed, and with a lot of windows this starts to take a long time. A graphics card would help the situation as they use their own high speed blitters, but are only available on big box Amigas. You do not say what programs you are running or what screen mode you are using, as processor intensive programs will obviously slow screen refresh. Also if you are using one of the new AGA monitor modes these slow screen refresh except on 8 or 16 colour screens.

The best way out of this situation is to run as many programs as you can on their own screens. With the introduction of Workbench 2 this became a lot easier with the use of public screens, and just about all programs allow you to open a new screen or run them off an existing screen. This will leave your Workbench as clear as possible, and therefore your windows will redraw as fast as possible.

## HELP PLEASE

I recently replaced the Commodore installed 200Mb Seagate IDE hard drive with a 1080Mb Seagate AT Fast IDE drive, and I used the standard 3.0 HD Tools on the install floppy disk to format and partition the new drive. The drive was recognised and I copied all my Workbench and Work files over to the new drive.

Everything seemed to be normal as everything copied over correctly, but when I came to run programs such as Brilliance, I get the requester 'Unable to open your tool, Brilliance' or the name of the program I attempted to run.

I have tried everything, checked the partitions, rebooted, and even reformatted and copied the software back onto the drive to no

avail. I then tried to copy the programs from their original floppies and voilà, they all worked perfectly. This is obviously very tedious and makes backing up programs to my Sysquest pointless. I suspect there is a problem with the copy function from one drive to the other, even though I use the 'all' statement and it only affects tools, since Workbench and all other utility directories operate normally.

I need your help. The Amiga is an orphan in America and I cannot get an answer. The drive manual refers to PC installation only, and all technical support personnel are programmed for PC-related problems and seem to have no Amiga knowledge what so ever.

William Trotter, Metairie La. USA



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

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



I am afraid you are not going to like my reply too much as unfortunately, I have no idea what your problem could be.

The frustrating part is that we have just installed a 1.6Gb IDE drive to our A4000 and are now having the same problem. At first we thought it may be the Maxtransfer rate or the Mask that you can set through HDToolBox, but none of these seemed to have an effect.

I found that using the copy command from Shell did copy the programs over so they worked, but this is still a very unsatisfactory situation to be in as we cannot use Workbench or Dopus to move programs around. If anyone has the solution to this problem then please send it in.

## HOME INSTALLATION

I am one of those individuals who still has an A600m with a 120Mb hard drive. The hard drive has recently refused to work – the computer appears to think it no longer has one.

The physical installation looks OK and when I try to use install v2.05 it seems to correctly prep the HD, but cannot format it. Instead, the following message appears: 'Warning: Hard disk partition WB\_2.x: cannot be found! This script formats partitions WB\_2.x: and Work:. Make sure the drive is properly connected and prepped, and the partitions have the correct names.'

Any ideas, except buy a new hard drive?

Robert Mitchell, Ireland



As long as the hard drive is installed correctly, and you can hear it power up, I would think your best bet is to try and format the drive by hand as all the programs you need are on the install disk.

This involves using a program called HDToolbox. When you first run the program go to the 'Change Drive Type' and define a new drive. If you now read



A vital program that is essential in setting up your hard drive correctly.

the drive configuration you should see all the different parts of the drive such as the manufacture, how many cylinders there are, heads, and other information you should not change. It will also work out how big the drive is from this information – this should be around the 120Mb mark.

If you click on OK and return to the main menu, select partition drive. Here you can select how big each partition should be and how many you actually

want. I would stick with the normal Workbench and Work partitions, and make the Workbench one about 15 to 20Mb. You should also make sure Workbench is bootable and that Work is not. Now select OK and save the changes to the drive. When you quit the machine it will reset and you will need to boot up with the install disk again. You will then be able to, if that worked, install Workbench using the installer provided.



# Master of

**W**ell, we had a resounding success with our latest reader survey, and I'm glad to see that most Amiga owners are actually intelligent enough to work out where to send their entries, even though we purposefully didn't include an address to send them to, honest...

Actually, we always knew that you lot were brighter than the average Amiga user, and probably a bit more mature, and the results we have collated bear this out. There are very few of the old unexpanded Amiga fraternity content to spend their hard-earned merely on games and a joystick every year, and most of you seem to be quite prepared to lavish a fairly large amount of money on your machines over the course of the next year.

So let's have those results then shall we? It came as no surprise that the machine that was most popular was the A1200, closely followed by the A2000/A1500. In fact, quite a lot of you seem eager to actually own more than one machine, which would obviously mean that a network port as standard on an Amiga would prove to be a popular decision on AT's part. Even more pleasant to relate is the fact that over 91 per cent of our readers have a hard drive, with only a recalcitrant or poor 8.1 per cent having to suffer the ignominies of the floppy drive.

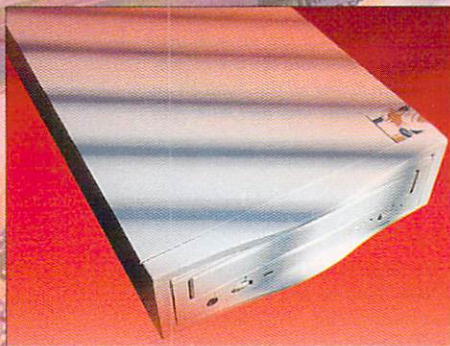
The fact that most of you are using A1200s is borne out by the processor stats showing the vast majority of people using an 020. Funnily enough, though, the figure for 020 usage is actually only just bigger than that for 030, meaning you all must like upgrading your 1200s, a fact which is also shown by the statistic that says that nearly half of you own an FPU of one description or another.

## STREETS AHEAD

The number of CD-ROM drives out there is also surprisingly high, especially when you consider the dearth of really good CD-based software, but very nearly half of our readers actually have a CD drive. Maybe you all use them for playing music most of the time, like I do?

Comms was an area surprisingly undersubscribed to, especially considering how busy the AmigaNet is, but it shows that we are actually providing you with a service when we put AmigaNet releases on our coverdisks. In the end, only just over a third of you have a modem, just over half that number have a 14.4k modem, and just over half that number also have an Internet connection.

Perhaps because of the preponderance of A1200 owners, there are very few of you who have graphics cards, although quite a few stated that their favourite piece of hardware would be one of these high resolution output devices. This probably



CD-ROM drives - seems you just can't get enough of them

accounts for the fact that most of you who have a monitor still only have a 1084-type monitor, although the low-end and high-end multiscan figures put together nearly match the 1084-type.

Disappointingly, most of you still only have a dot-matrix printer, although the inkjet/bubblejet camp is in a close second place. Only about eight per cent of you don't have a printer at all, so let's keep those letters coming in please!

That A1200 bias pops its head up again in the Workbench revision answers, with the overwhelming majority of you using Workbench 3.0. WB 3.1 accounts for the next highest figure and thankfully, 1.3 only now accounts for 5 per cent of our readership. Even so, this is far too many people. Get your acts together and upgrade!

As far as software is concerned, it seems that very few of you actually use your Amigas for CAD, but a huge proportion of you actually do spreadsheets on your machines. Games are as popular as ever with only a small amount of you denying you ever play them. The Amiga's supposed strengths are not being used to the full by our readers either, with a poor showing for video titling, editing, multimedia and animation, although an increasing number of you are using Amigas for 3D graphics. Unsurprisingly enough, not one of you never uses a word processor, so it looks like Softwood and Digita are right to keep up their arms race.

Onto the magazine now and it seems that most of you think we are doing a good job overall, although a lot of you say you would like more ESP and ACAS pages. To be honest, we wouldn't mind filling the entire magazine with problems and letters, it would certainly make our job easier, but we can't do it. Why not? Because of the fact that you lot have to actually write the letters and problems before we can put them in the magazine. We don't have a policy of making up letters to fit the number of pages we have set aside for them, so it is your

input we rely on.

Overall, you seem to like the magazine though, with only the Amiga Guide section getting a higher than average 'poor' response. Then again, it also gets a larger 'excellent' response than most other sections so I'm not sure what we can learn from this. However, we will be putting our heads together to see if we can revamp the section in some way. The most encouraging aspect for us is the fact that most of you think our reviews and features - the core of our magazine - are either good or excellent.

One of the set of statistics we found rather confusing to start with was the fact that so many of you find the magazine easily, until we realised we should have worded the questionnaire slightly differently to take account of subscribers saying 'Yes, it's on my doormat every month'. What we actually meant to ask was whether those of you that don't subscribe found it easily in your local newsagent, but never mind.

## SUBSCRIPTIONS

Of those subscribers we have, the majority of you have only subscribed for between one and two years, which can only be put down to our new American and Canadian readers from the demise of Amiga World, but we do have a hardcore of readers who have been with us for over five years.

The last section of our survey dealt with the sticky biological questions of what sex you were and how old. I think it's a shame that we have so few female readers, or at least ones who were willing to send in their questionnaires, with only 2.6 per cent of respondents wearing frocks (to our knowledge). Our readers tend to be more mature than the demographics would appear to show for other magazines, with a large number of respondents putting 'retired' in as their occupation, but the largest section of you are aged between 36 and 50.

We've picked a winner from the huge selection of entries we had. He's a sixth year student in Tilehurst near Reading and he has three Amigas - an A500 an A500+ and an A2000 - and likes DTP, 3D graphics and a lot more. He's one of our 50 per cent that don't have a CD-ROM drive yet and he doesn't have a modem. So if Stefan C Young would like to get in contact with us, we'll see what we can do to give him a copy of his most wanted package - Cinema4D.

So, thanks very much for providing us with the information we need to continue to make Amiga Computing the best magazine on the shelf and you can look forward to seeing changes based on your desires in the near future.



# all I survey

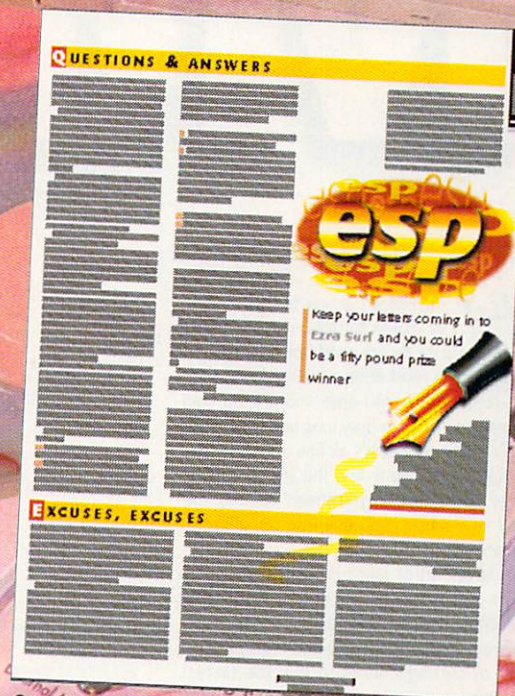
The results are in, the data's been collated, but just who has won our **ace prize** of a fortnight for two in a bin outside the MacDonalds in Clacton on Sea? **Ben Vost** will reveal all

Everything you need to capture clearly superior sound

A500
A600
A1200
A2000



The Amiga Guide section, ready for a revamp?



Our letters pages seem to be very popular, but can only be expanded with your contributions!





# Modem living

**A**s a student I was privileged enough to have access to free high-speed access to the Internet, all thanks to the University I went to and paid for by the good honest tax payer. However, for most other people who want to get connected from home, money can start to play a key role in how long and how much you can participate. It's all fine and dandy for computer journalists and the big cheeses at large computer corporations to sing the Internet's praises if no one else can afford to get on line.

A large part of your total expense is going to be your phone bill. Apart from taking special offers with BT, Mercury or a local cable network company, possibly the most practical way of cutting bills is to buy the fastest modem. Ten or 15 years ago a 2400bps modem would have been considered an absolute luxury, but at these speeds a page of text is torture to watch download, never

## Jargon box

**Baud rate** – refers to the amount of data the modem is currently handling. The baud rate is normally fixed but certain modems can have dynamic baud rates

**BABT** – any device that is to be used on BT lines should be BABT approved.

**BT** – one of the richest telecommunication companies in the entire world currently earning £90 a second. It's good to talk, for BT anyway

If you are baud stupid, **Neil Mohr** looks at the cream of the modem crop to get you out of your on-line blues

mind storage hungry Web pages whose sizes can easily reach the 100s of kilobytes mark.

Luckily technology never rests, and last year saw a plethora of 28,800bps modems swamp the market. These 'beasts' can handle around 3k a second on a good line and can make light work of downloading information on the

Internet and bulletin boards. Recently, their prices have dropped dramatically so making fast access available to everyone. With most modems offering group 1 or 3 fax support along with some with fast voice/data switching there is plenty of choice for everyone out there.



# SPEEDCOM

The Speedcom modem is one of the older modem models in this roundup but speed wise it has aged very well. The 28,8 model comes with support for V.42 and V.42bis error correction and data compression, as well as having the ability to send class 1 or 2 faxes – as long as you have the correct fax software.

The casing seems a little plastic but is styled quite nicely and the whole thing is very small, not much bigger than your hand. It has a line out connector to allow you to have a pass through phone, and the single power button on the top is well placed.

Due to it being a slightly older modem the Speedcom is currently available at a lower price than most of the other

models, and for people on a very tight budget the 14,4 version represents possibly the cheapest modem available.

The manual that accompanies the modem is large and helpful, and for the beginner it is very useful in explaining all the modem terminology and the setting up process.

Like many other companies, Siren throw in all the leads and a couple of Amiga disks to help you get going. Ncomm comes on one disk and the other has a very comprehensive guide to using comms on your Amiga that supplies invaluable

help for the beginner and a list of bulletin boards which have recently been overshadowed by the rise of the Internet.



# Bottom line

## PRODUCT DETAILS

Product	Speedcom
Supplier	Siren
Price	14,400 – £79.99 28,800 – £159.99
Tel	0500 340548

## SCORES

Ease of use	100%
Implementation	80%
Value For Money	90%
Overall	90%

# SPORTSTER VI



US Robotics have always been renowned for their quality modems and this latest one is no exception. The Sportster is a fairly compact affair, only marginally bigger than the Speedcom modem. The casing is made of a tough dark grey plastic and the whole unit has a very solid feel to it, and compared to US Robotics' earlier efforts the casing is styled quite well, with the usual bank of status LEDs furnishing the front of the modem. There is even a stand to allow you to use the modem upright and a usefully positioned power switch and volume control are placed on the side of the modem for easy access.

As for functionality, the Sportster has pretty much everything you would need. With V.42 and V.42bis error correction and data compression, as well as having the ability to send class 1 or 2 faxes. In use the Sportster proves itself to be one of the fastest modems around.

The Sportster also has voice mail support which would allow you to use the built-in microphone and speaker to send and receive spoken mails using your Amiga. Unfortunately, no software exists to allow you to take advantage of the voice mail standard which is a shame.

This is a great modem. It is very compact and supports all of the current standards. The manual seems a little brief, concentrating mainly on internal fitting to a PC, but as there is usually very little involved in setting up an external modem it is not really a problem. Probably the best BABT approved modem you can buy at this price.

# Bottom line

## PRODUCT DETAILS

Product	Sportster Vi
Supplier	First Computer Centre
Price	14,400 – £111.95 33,600 – £193.95
Tel	0113 2319444

## SCORES

Ease of use	100%
Implementation	90%
Value For Money	90%
Overall	100%

# SUPRA EXPRESS 288



The SupraExpress is another tiny modem and comes in a fairly thin plastic case that does not seem very rugged and has only the barest of status displays on the front. However, it is meant to be a budget version of its big brother the SupraFax modem.

A couple of real plusses for the SupraExpress are the five-year guarantee that it comes with and the fact that Supra actually provide direct support for the Amiga. Admittedly, it is only an American help line, but there is also a specific Amiga e-mail address. However, if you are having problems with your modem this might not be too helpful!

I am not too keen on the built-in modem cable that comes with the SupraExpress. It is long enough but if you need to replace it you are either going to have to send the modem away or face the perils of replacing it yourself which would mean invalidating the five-year guarantee you get with Supra modems.

# Bottom line

## PRODUCT DETAILS

Product	SupraExpress
Supplier	First Computer Centre
Price	£153.95
Tel	0113 2319444
E-Mail	firstcom@firstnet.co.uk

## SCORES

Ease of use	100%
Implementation	70%
Value For Money	80%
Overall	80%



# X-LINK



A newer modem to the market, the X-Link comes in a fairly plain box. The model we had was cream coloured, and the colour compliments the Amiga casing, but a plain black one is also available.

The case has a couple of feet at the bottom that can be pulled out to allow the modem to be placed upright. On most modems the front is adorned with plain LEDs with a couple of initials to show you what it is meant to represent, but as a change the X-Link modem uses illuminated icons to indicate what is going on.

All the usual compression and data correction modes are supported, along with class 1 and 2 fax transmission and reception. Wizard can also supply the GP Fax software as part of the modem bundle for an extra £40. If you need to send or receive faxes then this is an essential purchase.

The X-Link modem comes with a very good manual that covers subjects from connecting up your modem to what every Hayes command is used for and how to use them to configure the modem. All the leads you need are included with the modem, and Wizard also throws in a bootable comms disk with Ncomm included. Therefore, you can start using your modem as quickly as possible. This is another BABT approved modem so you can use it on BT lines without fear of repercussions.

## Bottom line

### PRODUCT DETAILS

Product	X-Link
Supplier	Wizard Developments
Price	14,400 - £119.99 28,800 - £219.99
Tel	01322 527800

### SCORES

Ease of use	100%
Implementation	80%
Value For Money	80%
Overall	80%

# TITAN

Another new modem from Wizard, the Titan is a very well priced, high-speed BABT approved modem. Being BABT approved is important point because only BABT modems can be used on BT lines, and only BABT approved modems can be guaranteed to work problem free.

The casing of the Titan might not be the most attractive, but the metal casing gives the modem a very solid feel so it could probably handle a good bashing around - more so than many of the plastic cased ones.

As with all the other modems in the roundup, the Titan has a small amount of non-volatile memory in it. This allows you to store modem configurations and up to four phone numbers in the modem's memory, and will remain stored in the modem even when you power down.

Being a V.34 modem, the Titan supports all the usual baud rates up to 28,800 bps, and the usual V.42 and V.42bis types of error checking and data compression, as you would expect.

If you want the cheapest BABT approved modem the 14.4 version is excellent value for money, and as with all modems from Wizard you get Ncomm thrown in - which is perfect for connecting to bulletin boards.

## Jargon box

MNP 2-4/V.42 - these are standardised forms of hardware error correction that assure the data you are receiving is the same as the data sent out and no errors occurred during the long trip to your machine

MNP 5/V.42bis - standardised forms of data compression which can allow up to four times the normal amount of data to be transmitted and received by your modem

BPS - Bits Per Second, the amount of data in bits that pass every second

## Bottom line

### PRODUCT DETAILS

Product	Titan
Supplier	Wizard Developments
Price	14,400 - £99.99 28,800 - £199.99
Tel	Phone: 01322 527800

### SCORES

Ease of use	100%
Implementation	80%
Value For Money	80%
Overall	80%

# COURIER V34+

US Robotics Courier is usually taken to be the best modem on the market and this is reflected in its price tag, being the most expensive modem you can buy. The first thing that strikes you about the Courier is how large it is, being about as thick as many of the other modems but around twice the length and a good bit heavier too.

As you would expect, the Courier does the business speed wise producing the best in transmission rates, which is only to be expected as US Robotics claim the Courier is the only 'V everything' modem available. By only using the Rockwell protocols instead of using the Rockwell chipset, this allows the courier to support both the V.fast and the V.32turbo protocols alongside all the standard modem rates.

With the normal set of status LEDs along the front of the Courier there is the voice/data switch. This little gadget lets you quickly switch the modem between voice mode, allowing you to speak to the person on the other end, and data mode, where the two modems can transmit data between themselves. To use this, however, both modems need to have this feature.

The Courier also supports adaptive speed levelling that allows it to select the best possible speed for transmitting and receiving data independently of the other modem. Consequently, if the transmission rate drops you can still receive at full speed.

Overall, the Courier is the top-of-the-range modem and is the first choice for just about all the Internet providers, so features like adaptive speed levelling can be used when online to the Internet. The price of the Courier may seem high, but for the really serious comms user the modem will more than pay for itself in the long run.

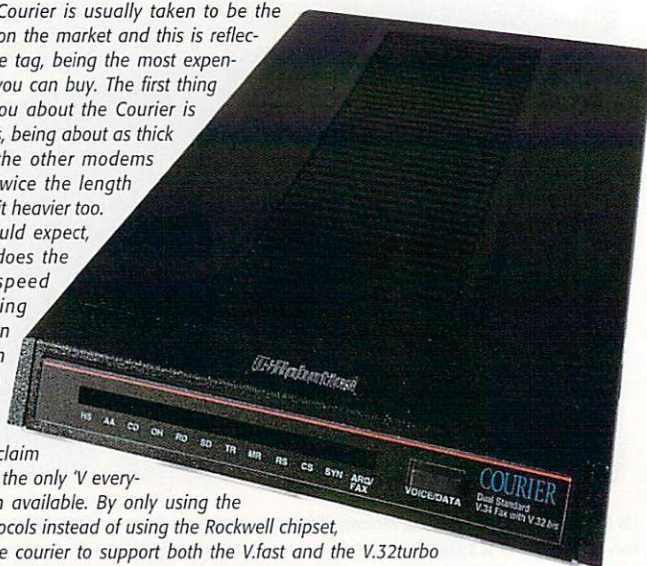
## Bottom line

### PRODUCT DETAILS

Product	Courier
Supplier	First Computer Centre
Price	£287.95
Tel	£287.95
E-Mail	firstcom@firstnet.co.uk

### SCORES

Ease of use	100%
Implementation	90%
Value For Money	80%
Overall	80%





# Inspector gadget

This month **Paul Overaa** takes a look at how the **EasyBaseAC** menus and gadgets were created

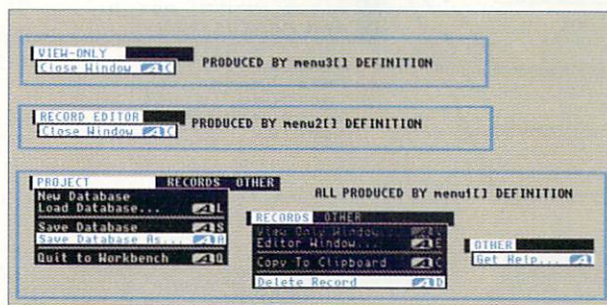
**T**he topics on the agenda this month are the techniques used to create EasyBaseAC's menus and gadgets. Gadtools, the library that was introduced with Release 2 specifically to simplify the creation of Intuition-based user interfaces, plays a big part in these discussions and since the menu-related issues are easiest to understand this is where I'll start. Gadtool menu definitions are based on sets of data blocks called NewMenu structures that, for the C coder, can be described like this:

```
struct NewMenu {
    UBYTE   nm_Type;
    STRPTR  nm_Label;
    STRPTR  nm_CommKey;
    UWORD   nm_Flags;
    LONG    nm_MutualExclude;
    APTR    nm_UserData;
};
```

The nm\_Type field is used to specify one of three entry types: a menu title, a menu item, or a dummy 'end of menu' value. Standard definitions, such as NM\_TITLE which indicates that an entry refers to a menu title, are available in the Amiga headers. The only other fields you need to know about are the nm\_Label and nm\_CommKey fields which are pointers to text strings containing a name and a keyboard shortcut for the item in question. All we need do to build a menu these days, then, is set up an array of NewMenu structures to represent the various menu titles and menu items we want... and let Gadtools do the rest. Take a look at listing 1 – the three arrays shown are all that are needed to define the complete EasyBaseAC menu system!

Of course, apart from the menu definitions we also need to get the menus displayed. A number of steps have to be performed here and I'll deal with them in the order they need to be carried out. Firstly, in

order for Gadtools to be able to work its magic, information needs to be provided with details of the screen on which display items are going to appear. This is achieved by making a call to the Gadtool GetVisualInfo() function and on exit a corresponding FreeVisualInfo() function also has



⌚ All these EasyBaseAC menus are produced by the NewMenu definitions shown in listing 1

```
struct NewMenu menu3[] = {
    (NM_TITLE, "VIEW-ONLY", 0, 0, 0, 0),
    (NM_ITEM, "Close Window", "C", 0, 0, 0),
    (NM_END, NULL, 0, 0, 0, 0),
};

struct NewMenu menu2[] = {
    (NM_TITLE, "RECORD EDITOR", 0, 0, 0, 0),
    (NM_ITEM, "Close Window", "C", 0, 0, 0),
    (NM_END, NULL, 0, 0, 0, 0),
};

struct NewMenu menu1[] = {
    (NM_TITLE, "PROJECT", 0, 0, 0, 0),
    (NM_ITEM, "New Database", "N", 0, 0, 0),
    (NM_ITEM, "Load Database...", "L", 0, 0, 0),
    (NM_ITEM, NM_BARLABEL, 0, 0, 0, 0),
    (NM_ITEM, "Save Database", "S", 0, 0, 0),
    (NM_ITEM, "Save Database As...", "A", 0, 0, 0),
    (NM_ITEM, NM_BARLABEL, 0, 0, 0, 0),
    (NM_ITEM, "Quit to Workbench", "Q", 0, 0, 0),
    (NM_TITLE, "RECORDS", 0, 0, 0, 0),
    (NM_ITEM, "View Only Window...", "V", 0, 0, 0),
    (NM_ITEM, "Editor Window...", "E", 0, 0, 0),
    (NM_ITEM, NM_BARLABEL, 0, 0, 0, 0),
    (NM_ITEM, "Copy to Clipboard", "C", 0, 0, 0),
    (NM_ITEM, NM_BARLABEL, 0, 0, 0, 0),
    (NM_ITEM, "Delete Record", "D", 0, 0, 0),
    (NM_TITLE, "OTHER", 0, 0, 0, 0),
    (NM_ITEM, "Get Help...", "H", 0, 0, 0),
    (NM_END, NULL, 0, 0, 0, 0),
};
```

⌚ Listing 1: The NewMenu structures used to provide menus for the three EasyBaseAC windows

## GADTOOL GADGETS

As well as simplifying menu creation, Gadtools also provides a set of routines for managing a whole range of gadget types – button gadgets, used for OK/CANCEL type operations, string and integer gadgets for text and number entry, checkboxes for on/off items and so on. The gadget type is identified by specifying one of the #defined types specified in the libraries/gadtools.h file. As with the Gadtool menu facilities, Gadtools gadgets are programmed at a significantly higher level than the Intuition library is able to provide. The function used to create a gadget is called CreateGadget() and it uses a data block known as NewGadget structure:

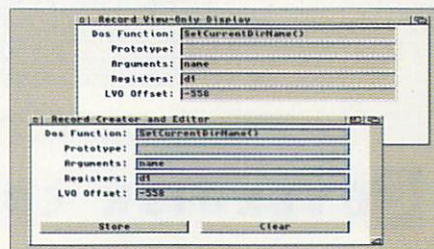
```
struct NewGadget {
    WORD   ng_LeftEdge, ng_TopEdge; /* position */
    WORD   ng_Width, ng_Height; /* size */
    UBYTE  *ng_GadgetText; /* gadget label */
    struct TextAttr *ng_TextAttr; /* font for label */
    UWORD  ng_GadgetID; /* gadget ID */
    ULONG  ng_Flags;
    APTR   ng_VisualInfo;
    APTR   ng_UserData; /* gadget UserData */
};
```

EasyBaseAC uses a number of Gadtool gadget types

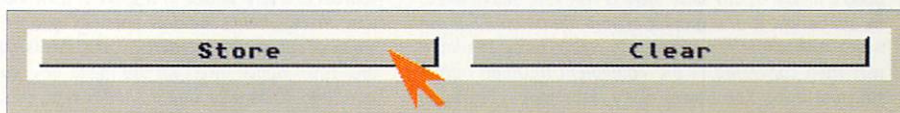
including sets of text-based gadgets for displaying the individual fields associated with database records. The window3.c module, the view-only window code provided last month, used TEXT\_KIND gadgets which are essentially view-only string gadgets. The module for the record creation and editing window (provided on the coverdisk this month) uses STRING\_KIND gadgets because these allow a user to type text into them. A couple of Boolean on/off type BUTTON\_KIND gadgets are also used to provide the Store/Clear boxes that appear in EasyBaseAC's editor window.

The basic code for creating a single gadget involves throwing suitable values for position, size etc, into the NewGadget structure and making a call to the CreateGadget() function. All gadgets created using CreateGadget() need to be freed by using the FreeGadgets() function but, because Gadtools

gadgets are automatically linked together, only one call to this function is necessary no matter how many gadgets eventually get created!



⌚ The text display gadgets used in both the view-only and the create/edit window may look the same but they are actually created using two different kinds of Gadtool gadgets!



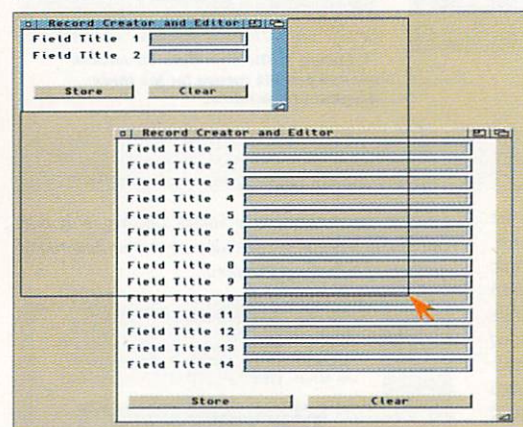
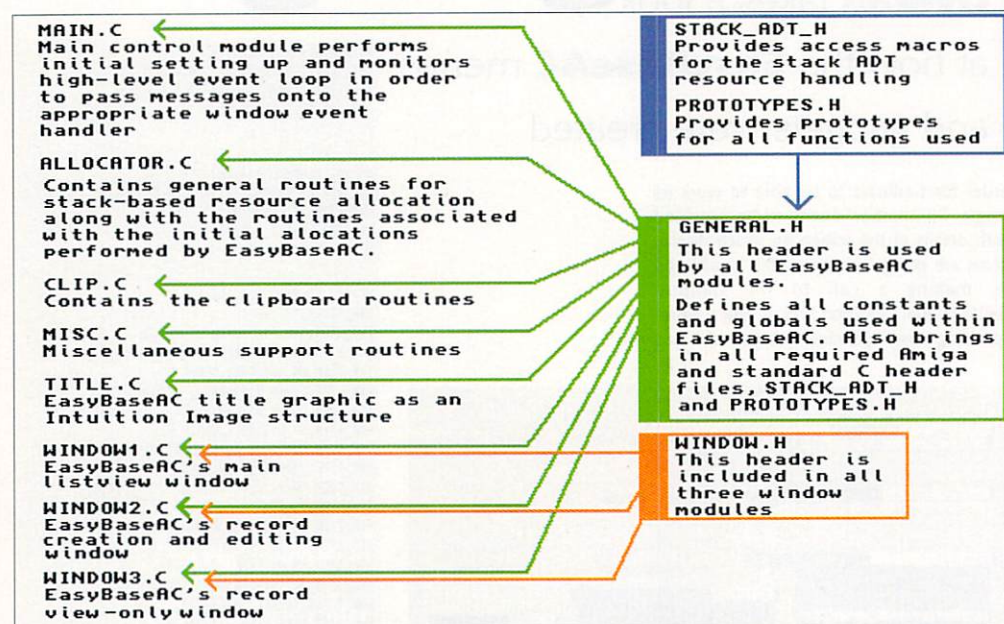
⌚ These Store/Clear gadgets used in the editor window are Gadtool BUTTON\_KIND gadgets



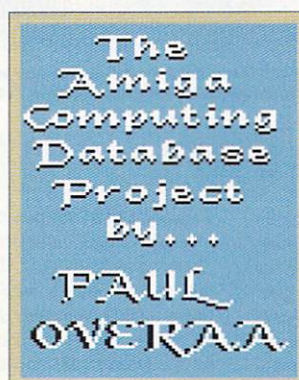
to be executed. Secondly a CreateMenus() routine must be performed. What this routine does is perform all the underlying Intuition-related menu structure setting up work. This call, too, must be coupled with a deallocating FreeMenus() function before a program terminates.

The menu structures created by the abovementioned library calls still contain no size or position information. With Gadtools this information has to be provided in a separate step involving a call to the

**This diagram shows the relationships between the various files which go to make up the EasyBaseAC program**



When a user resizes the create/edit window the new window dimensions are used to calculate the number of gadgets that could be displayed



EasyBaseAC's title graphic started life as an IFF brush in DPaint!

## COVERDISK CODE

On the coverdisk this month you'll find several files. One, called title.c, is just the Image structure for the title graphic that appears in the main EasyBaseAC window. You had to be given this file at some stage, and this month seemed as good a month as any since there is very little that needs to be said about it. The graphic started life as an IFF brush which took about two minutes to create using DPaint. It was then converted to the equivalent Intuition Image structure using Ken Howes freely distributable BrushCon brush converter utility, becoming the source file title.c!

You will also find the window.h header and the

window2.c source file. This latter file contains the code for the editing window and what I'd like you to do is compare this with the view-only window3.c source provided last month. The thing to notice is that the overall layout of both sources are very similar in respect of allocation/deallocation arrangements, window opening, gadget and menu creation and so on. Needless to say, this is quite deliberate. You'll notice also that the menu and gadget event handling code also has a similar type of structure in both modules. Gadtool and Intuition event handling, incidentally, is the main subject on the agenda next month.

LayoutMenus() library function, and again this call needs to be checked for success (although there is no corresponding deallocation routine to be performed in this case). Finally, the menu can be installed in the chosen window using the conventional Intuition function SetMenuStrip(). This function, incidentally, must be coupled with a ClearMenuStrip() call prior to the window closing.

The unfortunate thing about what would otherwise be a fairly 'bearable' scenario is that we've got a whole load of library routines to

perform, any or all of which could conceivably fail. If an error did occur we would have to ensure that only those routines that have been successful get their equivalent deallocation routines executed. This, incidentally, is why you'll find all this menu creation code embedded safely with each window's resource allocation/deallocation arrangements – if anything goes wrong and a window fails to open, I know that any steps that have been carried out as far as part-created menus are concerned will be automatically undone rather than left hanging.

## GOING LOOPY

If you have gadgets whose NewGadget definitions have significantly different attributes, then it is perfectly acceptable to create a gadget set by building a number of separate NewGadget structures. Often, however, you may want to set up a series of related gadgets whose gadget structures differ only in, say, their horizontal or vertical position co-ordinates, or their text fields. In these types of cases it is unnecessary to set up individual NewGadget structures. Instead, a loop can be used which reads, or calculates, any fields that need to be set up, thereby allowing a single NewGadget structure to be used for creating a whole series of gadgets.

## CALCULATIONS

This loop approach is important with EasyBaseAC for two reasons. Firstly, when a user resizes the editing window I do a calculation to see how many text or string gadgets could be displayed, store this value as the database field count, and then quickly close and reopen the window to provide the new display. When a new database is loaded the field count is again used in the gadget creation loop, so the number of gadgets that first appear is the same as those used when that particular database file was last saved.

There are a few other things about Gadtool gadget creation that need to be mentioned. Firstly, Gadtools needs to store a number of private data items relating to the gadgets placed in a window, and it stores this 'context' information in a dummy gadget which actually forms the start of a Gadtools gadget list.

Because of this, a call to a CreateContext() function needs to be made before any real Gadtool gadgets are created. Once the window is open it is also necessary to make a call to a GT\_RefreshWindow() function which completes the rendering of the gadgets. You'll be able to see how I do this from the gadget creation routines that are present in the EasyBaseAC window modules.



**U**ntil Workbench 2.1 came out the Amiga came with speech support, and after that Commodore probably saw a way to cut expenses and dropped the narrator and translator libraries, so removing this speech support. To be honest, for most people there would very little lost, but for visually impaired people speech would be of great help.

SofTalk is a drop-in replacement for the old narrator device and translator library, and as long as a program can access them in an OS legal way, all the old speech functions will work correctly. The new SofTalk files add extra functionality to the old Amiga speech and, in combination with the PhonMaker and TransMaker program, allow you to create new speech translation files. This allows different sounding voices to be produced and for different languages.

Once SofTalk is installed off the floppy, any program that can make use of the old Amiga speech libraries will now produce speech via the new SofTalk software. Multiple channels, variable pitch, speech rate, slur, stammer, lisp and a number of other controls are all available, and the major point of SofTalk is that you can define your own text to speech translation via two extra programs.

The software does claim to give better quality speech than the standard software, but the output is still the same sort of 'robotic' voice like the original Amiga speech. Your

# Simon says

main reason for buying SofTalk would be if you needed speech on a Workbench 2.1 machine, or you wanted the extended configuration that is possible via the PhonMaker and TransMaker tools.

It is obvious that the author has spent a lot of time writing the manuals as they do go into great detail about the theory and techniques involved in using computers to translate written text into spoken English.

The two extra programs you have to purchase separately to the SofTalk software are not essential and are there so you can change how the computer sounds. If you are thinking of trying to do this then you should not expect to get results straight away because both programs are complex, due to the subject they are dealing with, and can therefore cope with whatever request made.

At the end of the day, you will know if you

...let your Amiga talk to you with this new set of speech tools. **Neil Mohr** takes a look at what's available

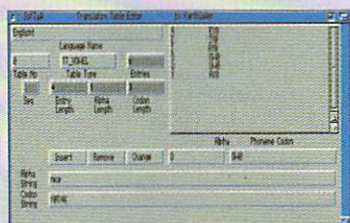
need this sort of software, as it is very specialised. The extra configurability is there but it will take you quite a while to get good results, and the standard speech is no better than the Amiga's original.

## TRANSMAKER

When the Amiga translates written text into spoken text it uses codons to apply a corresponding sound to a section of text. When you pass a sentence to the translator it splits it into smaller and smaller sections until a match can be made in a look-up table.

When a number of codons are placed together you can recreate spoken words. TransMaker allows you to create and edit your own codon tables for use with SofTalk, and this allows you to produce a much better conversion process, as specific words can be given their own codon.

One subject that is covered in great detail in TransMaker documentation is how to code your own language parser. This is the code used by the translator library to translate normal English text into the sets of codons. As a tutorial it describes how the default translation code is written, but suggests that many improvements could be made by anyone willing.



If you don't like your Amiga's tone of voice, you can change it

At the end of the day, you will know if you need this sort of software, as it is very specialised

Bottom line

### REQUIREMENTS

RED essential BLACK recommended

1 Mb

2.04

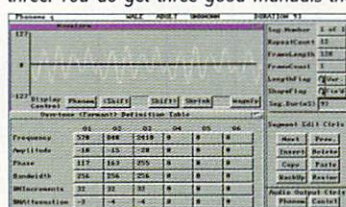
Chip RAM Workbench

## PHONMAKER

The second part of generating speech on computers uses phonemes which are the smallest recognisable elements of speech and are represented by codons.

The phonemes are strung together to produce the actual word. This is very difficult to do as you are trying to model the complex mouth, tongue and larynx movements that produce speech, but using simple algorithms. The default phoneme set has 40 such basic sounds that represent transitions from one sound to another, and when used in the right order a word can be produced.

PhonMaker allows you to create either extra, or completely new sets of phonemes, and is easily the most complicated program of the three. You do get three good manuals that outline aspects of phonetics and how to use each part of PhonMaker, but even so you will have to do a lot of playing around with PhonMaker before you will start to get good results.



It looks complicated and it is complicated

### PRODUCT DETAILS

Product	SofTalk	Product	TransMaker	Product	PhonMaker
Supplier	Parth Galen Software	Supplier	Parth Galen Software	Supplier	Parth Galen Software
Price	\$35	Price	\$47.50	Price	\$47.50
Tel	001 320 685-8871	Tel	001 320 685-8871	Tel	001 320 685-8871

### SCORES

Ease of use	80%	Ease of use	50%	Ease of use	60%
Implementation	70%	Implementation	60%	Implementation	70%
Value For Money	70%	Value For Money	70%	Value For Money	70%
Overall	70%	Overall	60%	Overall	60%



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# Playing at home

ROUNDUP

So you've got a sequencer running on your **Amiga** and want to flesh out a **full-blown** recording studio? Then let **Vic Lennard** and **Ofir Gal** save you hours of heartache



**T**esting... testing... one, two, three... There's nothing quite like the feeling of firing up your own recording studio for the first time and hearing a voice coming back through your headphones.

What constitutes a recording studio? Well there's a question, and one that doesn't have an easy answer. If you're into techno music then your system may be an Amiga with, say, the Bars and Pipes sequencer, a MIDI interface, a couple of multi-timbral synths, a simple mixer, and a cassette deck for mastering – perhaps £1,000 all in. At the other end of the scale, recording pop music with instruments and vocals would require an 8- or 16-track recorder, a sophisticated mixing console, various synth modules, outboard equipment like reverbs, delays, gates and compressors, a selection of microphones, a separate booth for vocals and drums – and a second mortgage to put that little lot together! Yep, you could be talking about getting little change out of £40,000.

This feature will help you understand all the components of a recording studio so that you can decide what you need. While it won't present a procession of specific product names, it will give you a reasonable idea of prices. So, on with the show!



# SOUNDS LIKE MIDI

Finding a synth you're happy with is not an easy task. With so many available, confusingly-named sound generation systems and misleading polyphony figures are just the tip of the iceberg. So let's look at what is required of a good all-purpose synth.

The first thing is to try it at the shop to see if you like the sounds. If you don't then there's no point going any further. The next thing to look at is how many sound presets are available and how many user-programmed sounds can be stored internally. After a while you're bound to get bored with the factory sounds, so you want to be able to create and store your own.

Most modern synths are capable of playing in a multi-timbral mode. This means that by using a sequencer, the synth can play a bass sound on one MIDI channel, a piano on a second, and strings on a third – all at the same time. This is very useful but quickly uses up all of the synth's sound generators. A bass part will probably require just one note at a time, but add a piano, some strings and brass and you are probably asking the synth to play ten or more notes simultaneously. Polyphony is the measure of the number of notes or voices the synth is capable of playing at any one time. The issue gets more confusing because in many cases the synth uses two or more voices to generate a single note to make the sounds thicker and richer. Just knowing that a synth has 24-voice polyphony is not enough – you want to look at how many voices are used to generate a typical sound.

Many synth models are available as keyboard-less sound modules and it's sensible to buy one with a good keyboard and then add sound modules as required. The synth with the keyboard will be your master keyboard, used to play all the sound modules, sampler and other MIDI devices in your studio, so look for a keyboard that feels right. There are several features to look for. First, velocity sensitivity is a must. A keyboard that doesn't respond to how hard you play will create monotonous and lifeless music. Aftertouch is less important, but can be just as useful. It works by allowing you to modify the sound by pressing the keyboard harder after your initial touch. Typically, aftertouch is used to add vibrato, filter sweeps, or other effects to the sound.

Also



Quality percussion is a problem in any home set-up and this offers a solution

A master keyboard and a B&P Pro give stunning sounds and touch sensitivity



look for the modulation and pitchbend wheels. Some synths feature a handy user-customisable slider that can be used to control and record volume changes, for example.

Another factor worth considering is the number of audio outputs available. Most synths have a stereo output, but some support additional outputs so you can separate a bass sound, for instance, from the rest. This is useful if you want to use different EQ and effects on the bass part. Finally, if you intend to buy or swap MIDI files, GM (General MIDI) compatibility is useful because it allows song files created on one system to be played on another with the minimum of hassle.

A sampler is a useful addition to any MIDI set-up. Although not essential, and generally more expensive than the average synth, a sampler can reach the parts other synths can't! With a few drum and percussion samples, your sampler becomes a dedicated drum machine. You can also use it to pinch short sections from records and loop them (well dodgy!), or to emulate the sounds of orchestral or oriental instruments. The main factors, apart from sound quality and polyphony, are the amount of RAM and hard disk space, and how upgradable they are. A drum machine is also handy – check out the Alesis SR-16 – but less important if you have a decent-sounding drum kit on your synth or sampler.



Signal processing is vital if you're aiming for pro-quality end results

# HEARING IS BELIEVING

You need to hear your music as clearly as possible. This means you'll need a good power amplifier, a set of speakers, and a pair of headphones. If you're on a tight budget you could use a Hi-Fi stereo system, but there's no substitute for decent monitoring equipment. Most Hi-Fi systems tend to colour the sound – mixes that sound great on your system will probably sound odd on your friend's.

A good amp and speakers designed for studio use has a flat frequency response and a clear, well-defined sound. When shopping for a power amp, get the most powerful one you can afford, with 150W per channel as a working minimum. There's a wide range of speakers on the market. Speakers can be very subjective and can sound very different depending on the room and amplifier used. In principle, look for the most efficient speaker: efficiency is measured in decibels per watt (dB/w) and the higher the figure the better. Three-way speakers that use three separate drivers are generally better than two-way ones.

When recording vocals or acoustic instruments your best bet is to use headphones. If you try to use the speakers you will have to battle with feedback and other problems. Walkman-type headphones will not do as they tend to leak sound that your microphone will happily pick up! Closed-back headphones are specifically designed for recording work and have a minimal amount of sound spillage – and cost upwards of £100.

Check your mixes on a variety of play-back systems. Even if it sounds good on your system, always try it on a car stereo and a ghetto-blasters. A good mix is always a compromise.

# MASTER!

The last stage in the recording process is the mix. All the channels are balanced and EQed. Effects are added and the final stereo output is fed into a stereo mastering device. In the old days, people used to use a 1/4" or 1/2" reel-to-reel, but the standard today is the DAT machine. Originally designed as a consumer product, it found a home in the recording studio due to its superb audio quality. Sound is recorded as digital information onto a small cassette, similar to the ones used in camcorders. Tape length varies from 60 to 120 minutes. The more expensive models (£1,200 and more) offer extra features and better sound quality, but even the cheapest models (about £600) sound at least as good as a domestic CD player.

An alternative to a DAT would be a high-quality cassette deck – and you will probably want one anyway so you can make copies of your final mix to play to others. The cassette is not an ideal format as audio quality is relatively poor and tape can degrade very quickly.



## TO TAPE OR NOT TO TAPE

Your most expensive purchase is likely to be the centre of your studio, a multi-track recorder. There are three options here: analogue tape; digital tape; or direct-to-disk. Analogue multi-tracking is a system that dates back to the 1950s. The tape width is divided into a number of equal bands, each of which can hold a recording. So, for instance, a Fostex R8 splits 1/4" tape into eight 'strips'. You'd be amazed what can be achieved with eight tracks – the early Beatles albums only used four tracks, and even Sergeant Pepper was recorded on just eight tracks.

Analogue recording falls down in two aspects.

Firstly, the nature of magnetic tape means a degree of hiss is created on every recording. Secondly, mixing, say, three backing vocal tracks together onto a single track, commonly called 'bouncing', results in a poorer quality recording than the originals. Also, such a system will probably have to be obtained second-hand.

Digital multi-tracking seems to be the direction in which the medium budget market is moving. Starting with the eight-track Alesis ADAT system and the look-alike Fostex RD-8, a studio can now have eight tracks of sparkling digital recording on a standard S-VHS cartridge. You can even use more than one unit to get multiples of eight tracks and have them running in time with each other by the addition of a small external piece of hardware.

Disadvantages? Very few, aside from the price tag – around £3,000 against an equivalent analogue system costing around a quarter of this second-hand. Play-back quality is stunning, although you have to be careful not to have too many noisy items in your system – such as cheap synths and effects units.

The third possibility is direct-to-disk. This may be based around a computer system, or can be a stand-alone product such as the Fostex DMT-8. Fifteen hundred sovs will buy you a digital workstation with eight track capability, a 540Mb internal hard

Higher than CD quality – but it's expensive

disk for about 12 minutes' worth of eight-track recording, cut, copy and paste editing similar to working with a MIDI sequencer, two-band EQ and a fully-functional eight track mixer. This would cut down on the cost of a decent spec mixing console. Other companies are also getting involved with such products such as the similar spec VS-880 from Roland.

Disadvantages? In a word: backing up. The DMT-8 has no expansion port for a second hard disk so you have to transfer your song data to a DAT recorder once the internal hard disk is full. This means relying on a tape-based medium for long-term storage. The VS-880 has a SCSI socket to which you could attach a CD-R recorder like Yamaha's CD102 and so burn the data to a CD – a more reliable option for those with more serious aspirations.

A combination of mixing desk and multitrack recording. The backbone of most back bedroom studios

## IN THE MIX

Your mixing desk is the nerve centre of the recording studio. Ideally, all your microphones, synths and effects units should be plugged into the desk along with the inputs and outputs of the multi-track recorder. Using the desk you can adjust the volume of individual instruments, change the sounds by using the equalisation (EQ), and add effects such as delay and reverb.

Most mixing desks share a similar design where each strip on the desk represents one audio channel – but there is no relationship between the number of channels on the desk and the actual tracks on the tape. In a typical MIDI-based studio, you have some audio on tape while your sequencer runs in sync with the tape. This allows you to have your MIDI gear playing along with the multi-track without occupying precious tape tracks. The tape outputs all your synths, and

samplers in this set-up must be connected to the desk which means your desk has to have enough channels to match. The more, the better!

Apart from the number of channels, you need to look at the number of auxiliary sends, also known as effects sends. These are used to feed a channel's signal into a global effects unit, allowing it to be used on more than one channel at a time. The number of effects sends determines the number of effects units you can use. Another useful extra found on some mixers are effects returns – regard these as bonus channels. They normally lack many of the features of the regular channels, such as EQ, but allow you to spare full channels for more demanding tasks such as getting a good sound on your drums and vocals.

Each channel should offer some EQ to allow you to control the sound. EQ in its most basic form consists of a pair of bass and treble knobs, such as those you would find on any Hi-Fi. If your budget allows, try to go for a system that features a mid-range control with a sweep facility. This addition can make a vast difference to the end result, giving you fine control over the sound of each instrument.

Many microphones require external power, also known as phantom power, which is

The all important mixing desk. If you can't run your sound through an EQ and mix the end result with the rest of the tracks you're in real trouble

supplied by the desk via XLR connectors. It's useful if the desk can supply this power, at least on some channels. The better mixers feature a set of insert points that you will also find at the back of the desk. Insert points are used to put an effect unit such as a compressor or a noise-gate into the signal path – useful, but not essential. The meters are often overlooked by the beginner, but the professional recording engineer knows their value. A good metering system allows you to record at the optimal level and get the best quality out of your equipment.

One additional item you should consider is a patchbay unit. This consists of a few rows of jack sockets similar to an old telephone exchange. All the audio inputs and outputs in the studio go into the back of the patchbay, and you can then connect any two devices by simply patching the two corresponding points at the front of the patchbay with a short lead. It may seem low-tech, but it'll make your life a whole lot easier!

For an eight-track system, you'll need a 12 or 16 input desk – and this will set you back between £600 (for a four group desk) and £2,000.



## T TESTING, TESTING

Unless you're going to work solely with MIDI, you're going to need a microphone or two. There are two main types: dynamic and capacitor.

A dynamic mic, also known as a moving coil mic, has a small, circular diaphragm attached to a coil of wire that is fitted into a tight gap in a magnet. Sound received by the diaphragm makes it move and generates an electric current that is amplified by a special mic pre-amp. The main advantages are the low cost and rugged nature – you can record almost any instrument, including a bass drum, with one of this variety. The disadvantage is the inefficiency, leading to a generally poor response – it's very difficult to record the breathy nature of a vocal. Check out the offerings from Shure, Beyer Dynamic and AKG.

A capacitor mic uses two plates, one made from metal and the other from a thin piece of plastic with an ultra-thin metal coating. Such a mic requires external power from either a 48 volt phantom supply on the desk, or sometimes an internal battery. Advantages? Superb recording, including every nuance of a voice or instrument. Disadvantages? Mainly price – a good condenser mic will cost you upwards of £400! Favourite of the bunch is AKG's 414



"...a good condenser mic will cost you upwards of £400! Favourite of the bunch is AKG's 414"

They may not look too impressive but good mics are an essential

## SQUEEZING 'N' SILENCE

Listen to your favourite current pop song. Does the kick drum sound ultra-even? Are there any odd extraneous sounds anywhere on the record? Does the vocal sound extremely breathy and present? The answer to all three of these is likely to be "yes" – welcome to the age of dynamic control!

What are dynamics? In a nutshell, it's the range of sound, from the quietest whisper to the loudest, percussive instruments. Analogue tape, whether it's a multi-track recorder or a cassette player, cannot cope with the kind of dynamic range that music produces, so the range has to be reduced. This is true even with most digital recorders – while a little distortion on an analogue machine may pass unnoticed, any degree of digital distortion will ring out like a chainsaw.

### COMPRESSING

Top of the list is a compressor. As the name suggests, this reduces (or compresses) the dynamic range and tends to be used on individual instruments rather than across an entire final mix. Typical instruments that benefit from the heavy use of one of these are bass drum, bass guitar or synth, and

lead vocals, especially with an inexperienced singer. Compression to a lesser degree can also be used on most real instruments, simply to keep the recording level within reasonable limits. Avoid compressing MIDI synths – most realistic sounds have already been compressed by the digitising process.

Most compressors allow you to use high compression ratios, upwards of 20:1. This prevents the output level from exceeding a set limit, hence the name used for this process – limiting. If you're intending to record vocals and instruments, get yourself a two-channel unit that provides both compression and limiting.

### PREVENTION

Noise exhibits itself in various different ways. Hard disk whine, radiator burbling, overhead aircraft, cars outside – all are likely to appear on your vocal recordings unless you take measures to stop them. Here you have two choices: buy a compressor with gates on the input, or buy a dedicated noise gate. The first of these is very useful if you have to record in an environment with extraneous noise, such as a lounge or other room without sound-proofing. A noise gate usually offers a number of gates (between two and eight) that can be set to silence all noise beneath a certain level. That way you can get rid of, say,

## I N CONTROL

If you already play a non-keyboard instrument like an electric guitar, there are various alternative MIDI controllers available. Roland sells a MIDI kit that works with any electric guitar, consisting of a special pick-up and a dedicated synth module. Other manufacturers offer a variety of MIDI controllers – MIDI accordions, MIDI saxophones, and MIDI drum pads for example. Most of these suffer from various technical problems such as late response and inaccurate note tracking, so it's best to try before you buy.

unwanted hiss on your favourite MIDI synth, but make the gate open as soon as the synth makes a sound.

The fourth item in this category is one that tries to put back some of the lost dynamics, often due to over compression. An exciter can add quite a sparkle to the top end of your recordings, bringing out hihats, cymbals and vocals. Its partner in the bass department can beef up your bass drum and bass sounds. Neither of these is essential, but you'll be amazed how scintillating a mix can be with a little judicious use of either of these items.



Compression and advanced signal processing add that all important professional touch to the mix



## handy tip

Be careful when buying anything involving moving parts.

Replacement of worn items such as these is very expensive both in terms of the parts themselves and the labour costs. If the saving of a second-hand item over a new one is reasonably small, go for the new item every time – better to start the system with less equipment, all of which is functioning properly, than an entire system

that keeps breaking down.

● Sound modules and effects units: no moving parts and easy to check. Have a look at the MIDI In socket and around the on/off switch. Wear in these places shows that the unit has been heavily used. If a unit has an external power supply, check whether the cables going into it are damaged as such power

supplies are often expensive to replace.

● Multi-track/cassette recorder: check the heads. They should be clean of tape residue and without any flat, worn surfaces. Record onto each track, play back, and check the sound quality. Is there any 'warbling' of the sound? If so, the heads are probably knackered.

## SWEET FX



No studio would be complete without at least one effects unit to provide reverb or other sparkling offerings. The nature of the recording process tends to produce dry sounds that lack the natural echo and resonance of a room or a concert hall. A decent effects unit will let you place your instruments in a wide range of environments, from a small room to a long tunnel. This type of effect is called reverb. In the real world, reverb is the result of a large number of echoes that are reflected from the walls and furniture and bounce back and forth around the room. The result is a wash of sound where the individual echoes merge into each other. A digital reverb effects unit simulates this by sampling the incoming sound and playing it back in a complex cluster of echoes. Naturally, the more you spend on your reverb unit, the more natural sounding and flexible it will be.

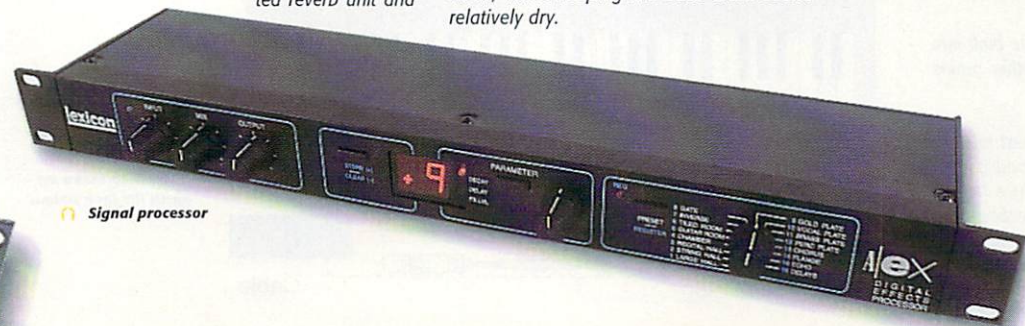
There are many devices on the market that can do much more than just add reverb to your mix, such as the Alesis Midiverb 4. They can easily generate effects such as repeating echoes, ping-pong delays, pitch shifting, and a variety of doubling and flanging effects. All these can be used creatively to enhance the sounds you record. Automatic double-tracking (called ADT for short), for example, can be used to great effect on backing vocals to make them sound 'bigger'. Some units go a step further and can generate several effects at the same time. Such multi-effects units, such as the Alesis Quadraverb, tend to cost more but are very useful. Having one dedicated reverb unit and

one all-purpose multi-effects device is probably the best compromise.

The nature of these effects require them to be mixed in with the sound. You would normally want to hear a mix of the dry sound and the reverb effect. Unlike compressors and noise gates which are normally connected via insert points, effects like reverb and echo are added by using the effects sends and returns on your mixing desk. Typically, a unit will have a pair of stereo inputs and outputs, but in most cases the left and right inputs are merged internally and you may as well use just the left one. The output, however, is true stereo on the majority of units and the stereo effect is crucial to the realism of the reverb. This output is usually routed into a pair of effects returns on your desk which should be panned hard left and right. If your desk doesn't have specific effects returns you will need to sacrifice two channels for this purpose.

An effects send works by feeding some of the sound into the effects unit which then produces the reverb or delay and sends it back via its outputs. By adjusting the amount of effects sends on the individual channels on your desk you can determine how much of the sound is fed into the effects unit and, therefore, how much effect will be added to it. This allows you to have a lot of reverb on, say, the snare drum, while keeping the bass drum sound relatively dry.

Left and below: Yet more signal processing power. Reverb, chorus and the rest are absolutely essential for serious recording. There's nothing in the world worse than a bone dry vocal or flat percussion. Buy one! You won't regret it



Signal processor

## GIVE ME A LEAD

If you own a multi-track, some synths, a computer with sequencing software, an effects unit or two, a mixer, amplifier, and the various other items that go to make up a studio, you'll probably have 20 or so plugs to fit into, perhaps, a couple of mains sockets. Do you buy a few four-way mains blocks, some two and three way mains adaptors and cobble the whole lot together? No! Here's the right way to handle your cabling.

If possible, consider running a separate power supply from the fuse box to your studio and terminate it with an isolating switch. The advantage? A lack of mains-borne noises such as clicks from refrigerators and other pieces of equipment turning on and off. The isolating switch allows you to cut all electricity in case of an emergency. If this is impossible, consider building some small boards with mains blocks attached to them, each with a switch to allow you to disconnect that board from the mains.

## OVERLOAD

Use good quality mains plugs that have a plastic sleeve on the positive and neutral pins, and also use decent quality mains blocks and adaptors (if you have to). While it may be difficult to overload the fuse in a block, it is easy for a plug or adaptor to pull half out – use a few extra blocks and avoid adaptors completely. And remember to label each plug with the name of the piece of equipment it is attached to!

The total current being drawn by your equipment will be nowhere near the standard 13 amps that is allowed for by a plug fuse. Work out the total current draw of your system by adding up the power figures for your gear (check the rear panels for each wattage) and divide by 240. Work out the current draw for each piece of equipment, get hold of a selection of low-value fuses (1, 2 and 3 amps), and substitute these for the standard 13 amp type.

This will ensure that should a fault occur with a piece of equipment drawing, say, a quarter of an amp, the fuse in its plug will blow first. All mains blocks should have 13 amp fuses so that you don't need to worry about the total current draw for all the equipment connected to this block.

When you turn on some pieces of equipment, the initial surge may draw more current than under normal running conditions. If you leave all your equipment on and then turn on at the wall, the instantaneous current draw could exceed 13 amps and blow fuses. Other damage is also possible when current surges occur. For safety sake, many people prefer to turn each individual piece of equipment on and off.



# I N CONTROL

This feature has only scratched the surface of setting up and running your own recording studio. Here on this page are some final pointers:

- Subscribe to a decent music mag such as *Sound On Sound*. This will keep you up-to-date with the latest bits of kit, plus educate you on your current equipment.
- If you're just starting out, get a good beginners' book - *MIDI Survival Guide* from PC Publishing (01732 770893). The author? Vic Lennard (shameless plug!).

Don't be in too much of a rush to spend all your money - buy the essentials and learn how to get the most from them first. Also, allow at least ten per cent of your total budget for cables (MIDI, audio and mains), patchbays, disks, tapes, cleaning kits, footswitches, mic stands and so on.

● Speak to people! Go to as many public music shows as possible to ask questions and test anything that interests you. Strike up a good relationship with your local music stores - make 'em feel guilty to rob you blind!

Above all, enjoy yourself - your music will be that much better if you're having a good time.

## GENERAL MIDI

You may need to send your songs to other people purely as computer data. No problem: chances are your sequencer can save a song in the general form of a MIDI File. But how do you ensure that the person loading this song into their sequencer gets the same sounds as the ones you've been working with?

This is where General MIDI comes in. Any synth or sound module with the GM logo guarantees 24 simultaneous tones, 128 specific sounds, and drum notes mapped to certain keyboard notes.

If you need to transfer songs to other people, make sure you both have a sound module with a GM logo, or possibly Roland synths with the extended GS format.



## EARTH TO EARTH

A common problem is that of a low frequency hum coming from the loudspeakers - an earth loop. This is usually due to trouble with earthing in one or more pieces of equipment. A few tips:

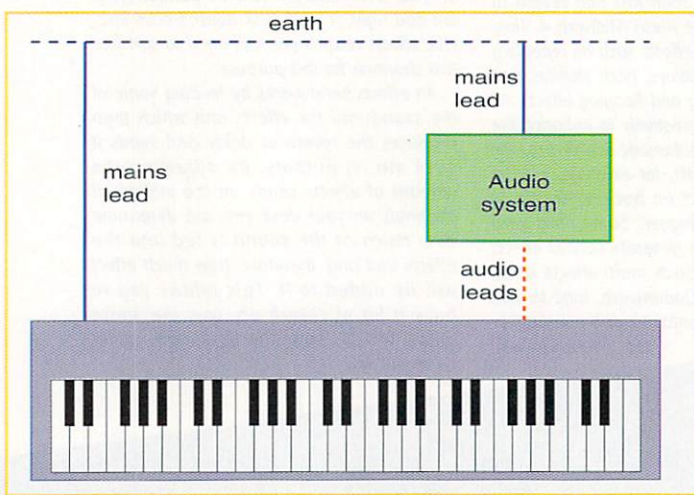
● Don't remove the earth lead inside a mains plug! Break the loop by ensuring the audio system is earthed and by having a 270 ohm resistor wired in line with the screen in the offending item's jack plug.

● Equipment can cause an earth loop even when turned off as mains and audio connections are still being made. If there are problems with racked equipment, remove the mains plug for each item and start racking them again one at a time.

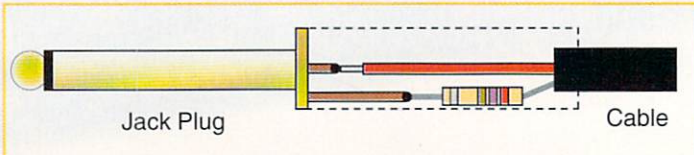
● A common situation is where mains adaptors are built into plugs. The electrical field can be picked up by other mains leads close by - so-called 'proximity hum'.

● Try not to run audio, mains and MIDI cables next to each other. There are unlikely to be problems with good quality audio and MIDI cables, but mains leads can induce hum if the cable quality is poor. If you have to run such cables near to each other, make them cross at right angles.

● Beware of computer monitors. Audio leads run nearby invariably pick up hum from the radiated electrical field.



The makings of an earth loop - and hum city!



How to make an earth lift jack plug...

## MIXIN' IT

What do the various knobs on a mixing desk do? Here's a quick rundown:

- Mic/Line: lets you toggle between a microphone (amplified) or standard level input.
- Gain: adjusts the channel's signal boost.
- High: increases or reduces the top end (treble) of the sound spectrum.
- Mid: two controls. One increases or reduces the part of the sound spectrum selected with the second rotary.
- Low: increase or reduces the bottom end (bass) of the sound spectrum.
- Aux 1/2: feeds some of the signal to the Auxiliary outputs and on to effects units.
- Pan: adjusts the position of the channel's stereo picture from left to right, and feeds the signal to odd and even recorder tracks.
- Track buttons: select which of the eight tracks to record to.
- Fader: fine level control

## PERFECT TIMING

How do you keep your sequencer in time with your multi-track? By using a SMPTE to MIDI Time Code converter. This small box allows you to record a special code (SMPTE, pronounced 'simptee') onto one track of your recorder and then translates this into commands your MIDI sequencer can understand - that's the MIDI Time Code bit. So when you fast-forward your recorder to a point part-way through a song, your sequencer will instantly move to the correct location.

While you lose a track on an analogue recorder, most digital multi-tracks have optional boxes that can output the MIDI Time Code without needing any special code on tape.



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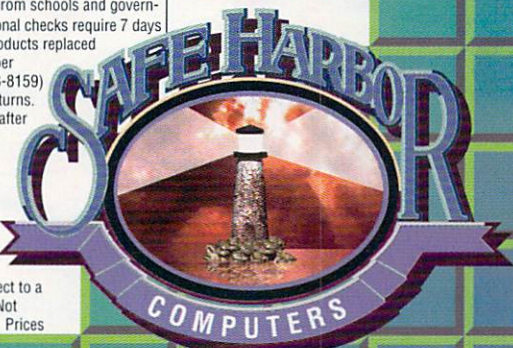
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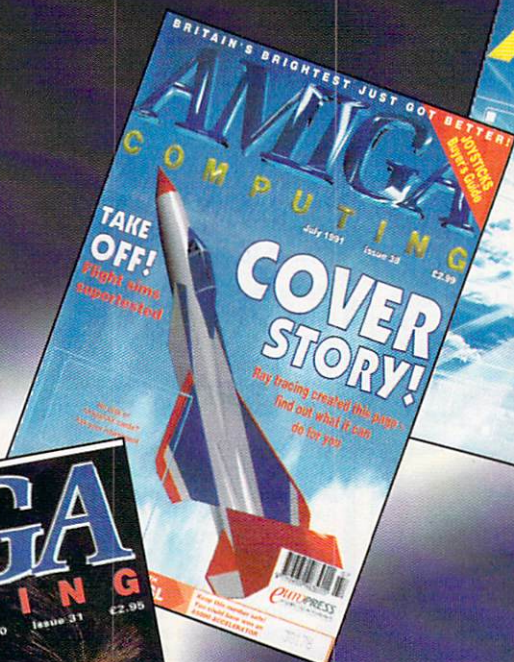
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# Centenary celebration

**W**elcome to this feature detailing some of the Amiga's history over the past 100 issues. We've seen changes in personnel, design and the fortunes of the Amiga. Back when *Amiga Computing* was young, a half meg expansion for an A500 would set you back somewhere in the region of £120, and a floppy drive was about £100. As for a hard drive, well if you had over a grand burning a hole in your pocket then you might be able to afford a slow 60Mb SCSI box added to the side of your machine.

In the big wide world the UK's Value Added Tax went up by 2.5 per cent, Saddam Hussein invaded Kuwait, the Yugoslavians invaded themselves, we saw asteroids hit Jupiter and comets fly overhead. There have been elections, assassinations, peace in

Northern Ireland, troubles in Northern Ireland again, a US presidential election and, most recently, the scare over mad cows.

So what will the next 100 issues be like for *Amiga Computing*? We don't know.

With the fortunes of the Amiga in the balance we don't know if we'll even be around to reprise this feat of research, but we look forward to seeing you in another 100 issues time anyway, when we'll have Amigas with thought interfaces, CD-ROM drives that are faster than the fastest hard drive, and more memory than you can shake a stick at. Wait and see, it'll come... So we'll kick off this feature with some of *Amiga Computing's* history, go onto the Amigas, and on the way we'll find out more about the people, companies, and stories that have made the Amiga's and *Amiga Computing's* history such an interesting one.

## DESIGN CHANGES

In Issue 31, the mag received a design change that meant our readers had to make their own minds up about how they thought a product performed, because the scores were removed from everything. Although a lot of people wrote in to say they liked the new design brought in in the May issue in 1994, we've had a lot more mail from people saying that they didn't like it since, which resulted in the revamp first seen in our January 96 issue.

The mag has changed its look over the past eight years, as is to be expected, but there are some features that haven't been repeated, such as the filofax-style games cheat cards that started coming free with the October 91 issue. There were six cards in each issue for about six months for all you yuppie Amiga-owning games players out there. *Amiga Computing* has also given away books (those 64-page jobbies seemingly printed on recycled toilet paper that seem so popular with certain Internet magazines), supplements, and competitions to win flights in light aircraft, subscriptions to Microlink, and even £3000's worth of A500 and games at one time. Our January 91 mag was

the first issue to have ACAS in it, although it didn't have a title at that time, but by issue 34 it was called 'Interactive Rescue'. In issue 37 ACAS made its first appearance. Despatches (the letters column) was renamed External Input in issue 35 (April 91), but was called ESP for the first time in June that year.

Issue 38 was the first issue at the current page size. Previously, AC had been strict A4, now it is A4 wide (in the UK that is, US readers will get a style they are familiar with from *Amiga World*), and issue 41 was really the first full colour *Amiga Computing*. In issue 42, Dec 91, the news page announced that AC had a readership of 150,000, but no ABCs were available to prove it. Issue 48 saw the first appearance of the Blue Chip award and the one and only appearance of a sell through videos and SkyTV review page called Entertainment Xtra. Issue 51, Aug 92, was the debut appearance of the Amiga Mart section, long since gone, but not forgotten, and issue 57 was the first *Amiga Computing* to have the now familiar System Essentials and Bottom Line sections of a review.

Yes, it's official. **Amiga Computing** is **100** this month, so we bring you some of the highlights and lowlights from the past eight years





# INTERESTING USES OF THE AMIGA

● In volume 1 issue 4, we told of how the BBC were using Amigas – linked with Laserdisc players for the Domesday Project.

● In volume 1 issue 7, we detailed how Lever Bros. – world famous soap powder manufacturers – used Amiga 2000s to control the flow of their production lines.

● Vol 2 issue 3, Aug 89, we told of how the Australian stylophone maestro Rolf Harris used Amiga 2000s for animation stations on his TV program.

● Vol 2 issue 5, Oct 89, George Lucas (who is supposedly an avid Amiga fan – or at least was) arranged with Commodore US to produce four TV ads (we don't know whether or not he ever made them...).

● Vol 2 issue 10, Mar 90, A2000s used for medical imaging in tests at Imperial College London.

● Vol 3 issue 4, Sept 90, London Transport Museum use Amiga 500s for the underground train simulator.

● Vol 3 issue 6, Nov 90, A500s

used at Jodrell Bank – probably Britain's most famous set of large scale telescopes – to help with imaging.

● Issue 31, Stan Haywood, creator of Henry's Cat, uses an A2000 for his animation work.

● Issue 31, 190,000 worth of XCAD installations at Hamworthy Engineering for architectural design.

● Issue 35, the first girl guide to win a computer literacy badge did so using her brother's A500.

● Issue 39 Aug 91, dentist uses Amiga 3000 with CanDo to teach endodontics – his name is Andrew Gould, now at Premier Vision.

● Issue 40 Sept 91, an Amiga is used to pitch convert a sample of the world's fastest talker in order to prove his record – 637 words per minute.

● In our issue 55 we reported how, when Rolf Harris asked for animations for his TV show, over 70% arrived on Amiga floppy disks.

● Issue 60 carried news of how the Manchester 2000 committee (to get the 2000 Olympics to be at Manchester)

bought A4000s equipped with Scala to help with their presentation.

● Issue 61 had a feature on how Amigas are used to help produce a children's TV game show called Nightmare.

● Issue 61 also heralded the first appearance of Jakki Brambles (now ex Radio 1 DJ) presiding over their adverts. According to her spiel, she was apparently an avid Amiga owner.

● In our July 93 issue we interviewed percussionist Evelyn Glennie about her use of the Amiga and Bars and Pipes Pro in her studio.

● In issue 66 we told our readers about a huge video wall at Wolverhampton Wanderers which was controlled by Amigas.

● Issue 70, London Transport Museum now to use CD32s for the underground train simulator, using 3D graphics produced with Real3D

● Issue 77 we feature the Robocop TV series, another use of the Amiga for broadcast TV graphics.

● Issue 80 carried a news story about how the Star Trek Voyager effects were produced with the help of the Amiga and LightWave.

● Our Feb 95 issue sports a handsome Wallace and Gromit cover story as we reveal

how Aardman animations rely on PAR card-equipped Amigas to produce the Oscar laden animations (about a year before any of the competition get to the story).

● Our April 95 issue had a big feature about the Magic Camera Company's work on a film called CyberJack and about Mu-Media's work on The Grid's music videos and BT information films.

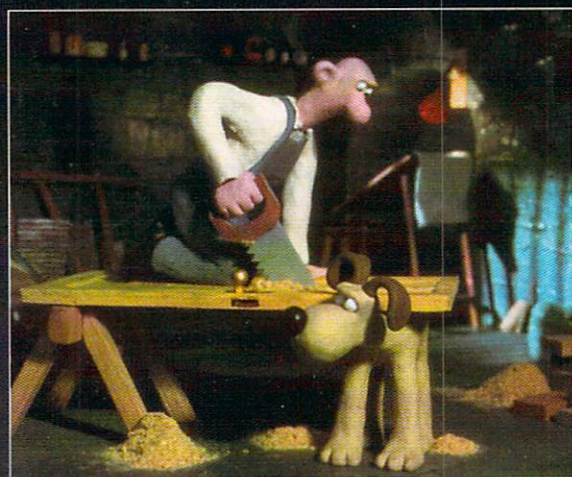
● Issue 90, Sept 95, and we went to the zoo in Colchester, Essex, to look at a CD32 information system used to tell visitors all about the zoo's big cats

● Issue 93 we tell about how the Imperial War Museum uses Amigas for visitor information.

● Issue 96, two features on professional Amiga use. First is Eureka, a children's science museum where Amigas are used to provide A/V displays, and then a visit to the Magic Camera Company where Amigas were used

to provide some of the special effects for the James Bond film Goldeneye.

● Issue 97 featured Granada Television, one of the UK's largest entertainment companies, and their use of the Amiga for shows like The Krypton Factor, Cracker and others.



See? Girl's do use computers, at least Kerrie Stevens does



## WHERE ARE THEY NOW?



Nic Veitch is currently editor of Amiga Format magazine



Simon Rockman was last spotted writing for Demon's in-house magazine and edits his own mobile phone mag



Stevie Kennedy is currently editor of The Web magazine



Paul Austin is currently managing editor for both Amiga Computing and The Web



Eddie McKendrick now works for Nickelodeon, the television station

Jeff Walker now works for HiSoft. Until recently he also single-handedly produced Just Amiga Monthly magazine.



Phil Morse (Amiga Computing's first sub-ed listed who was on the mag for two or so years) is now a DJ for a nightclub in Manchester





# GONE BUT NOT FORGOTTEN

● Volume 2 Issue 2 July 89, WordPerfect Corporation stop Amiga Development.  
 ● Issue 64 September 93, HB Marketing goes bust.  
 ● Issue 64 September 93, Microdeal bought by HiSoft.  
 ● Issue 69 December 93, Access Amiga advertised for the first and nearly the last time.  
 ● Issue 72 April 94, Digital Creations say that Brilliance 2 is their last Amiga product and Gold Disk also stop Amiga development.  
 ● Issue 75 July 94, Commodore International and Commodore Electronics go into voluntary liquidation. Also in this issue ASDG, Nova Design, Digital Creations, Amiga World magazine, SoftLogik, Centaur (OpalVision creators), Prolific, IAM and Blue Ribbon all promise to continue support for the Amiga if CBM goes bust. Out of this crowd, the only people left in the Amiga market today are Nova Design, SoftLogik and IAM, with

Prolific's status uncertain (they created circuit board design software). Centaur and Amiga World went bust and ASDG, Digital Creations and Blue Ribbon were all either bought up or merged with companies not producing items for the Amiga and ceased their Amiga operations.  
 ● Issue 76 August 94, New Horizons software closes down.  
 ● Issue 77 September 94, Medhi Ali officially leaves Commodore.  
 ● Issue 81 Christmas 94, Europress Publications bought by IDG.  
 ● Issue 86 May 95, WTS raided by police after numerous complaints. In the same issue we carried news of Amiga World's demise.  
 ● Issue 87 June 95, Rumbelows (a large chain of electrical retail shops in the UK) closes down, but

Escom buy the shops. Also this issue the news that GVP liquidated on 5th April 95.

● Issue 88 July 95, VRLI announce they are to stop Amiga development, but Chacody pledge to continue to develop Vista Pro, etc.

● Issue 89 August 95, David Pleasance and Colin Proudfoot won't be joining newly formed Amiga Technologies UK and ZCL go bust taking their retail shops Calculus, and mail order division Indi Direct with them.

● Issue 93 December 95, Rasputin (games developer) goes under.

● Issue 97 March 96, Amiga Technologies UK Maidenhead office closes. The two remaining staff move to Stanstead.

● Issue 98 April 96, Canadian dealer and distributor Wonder Computers go bust.

# COMMODORE/AT PRODUCT RELEASES

● In our Feb 1989 issue Commodore announced the 2500 – an A2000 with Commodore's own 030 accelerator and SCSI hard drive controller.  
 ● In May 89 we announced the A590 for Commodore. It was a SCSI/XT drive controller for the A500.  
 ● August 89 saw the announcement of the A3000, the first really new machine since the A500.  
 ● January 90, the announcement of the Class of the 90's pack, a 1Mb Amiga 500 with educational software for £499. Demand outstripped Commodore's predictions and they had to triple the number of packs produced.  
 ● Our July 90 issue saw the Flights of Fantasy A500 pack announced to fill gap left by Batman pack. The pack contained F29 Retaliator, Rainbow Islands, Escape from the planet of the robot monsters and DPaint II.  
 ● First reports of 'Baby' – the machine that will become the CDTV in our August 90 issue.  
 ● Screen Gems bundle announced with Days of Thunder, Back to the Future II Shadow of the Beast II Nightbreed and Dpaint II in Nov 90 issue.  
 ● CBM UK offer a £200 discount for an A1500 when you trade in an old A500 in our March 91 issue... ..but in our April 91

issue they say it was a mistake, but that the price of an A1500 would drop to £999 inclusive of VAT, a saving of 150 at the time. They also offered a trade in of any other console for an A500 discounted by 70.

● CDTV launched on 30 April 91 at £599.99, but because of Commodore's insistence that it not be marketed as a computer, not many of the independent dealers can, or want to, stock it.

● Commodore dropped the price for a Class of the Nineties First Steps bundle by 100 in our August 91 issue to compete with a similar offering from Atari.

● CBM UK launches new 'Cartoon Classics' bundle in our Sept 91 issue. The 399 pack includes a 1Mb Amiga 500, Bart v the Space Mutants, Captain Planet, Lemmings and DPaintIII.

● Rumours of a new Amiga surface in our October 91 issue. The new machines are to be upgraded A3000s with 68040s (in other words, the fabled A3000+). Other machines using RISC processors are also on the cards and both could be with us by August 92. Both machines will have improved sound and 256 colours onscreen for VGA emulation. Commodore are also guaranteeing backwards compatibility. The same issue sees the notice that the Workbench 2 upgrade kit will finally



# HOPEFUL PRESS RELEASES

Copperhead Technologies announced in our Dec 93 issue that they were offering an A1200 upgrade for A500 owners that would allow them to have access to AGA and the IDE controller and trapdoor expansions that A1200 took for granted for just \$225. Nothing has been heard since.

Gigatron announce a portable Amiga in our March 1990 issue, it was supposed to be shown at CeBit that year, but as our report in the July issue states, they were nowhere to be seen. Nothing has been heard from them since.

Although the OpalVision board had been out for quite a while and was reviewed in our 54th issue

(where the add-on modules were promised RSN), it wasn't until our 83rd issue that we printed a press release that stated that the fabled Roaster chip was going to be available at any moment, and that people should start holding their breath now. The Roaster chip was finally shown in a flawed form that year at one of the London Amiga shows, but it never appeared on sale, nor did the other modules like the flicker fixer, TBC, etc.

Our 82nd issue in January 95 had a company called Computer Answers announcing an Amiga compatible with 030 and Akiko chip. Whatever happened to that?

John Kennedy  
freelances all  
over the place

Steve White  
is now HTML  
guy for The  
Web magazine

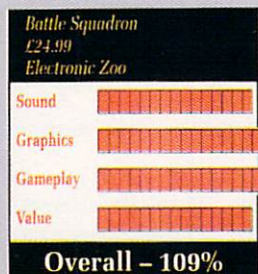
Adam Phillips  
is now  
associate  
editor for  
The Web

Darren  
Evans is  
now reviews  
editor of  
PC Home  
magazine



# BITS AND BOBS

- Our August 89 issue carried a review of Vortex's System 2000 external 40Mb hard drive for the A500 (cost £73.85) and we said 'Most users will find 40 megs more than adequate for their needs.'
- We were even more prophetic in our January 1990 issue when we reviewed the SyQuest 20Mb removable (without a SCSI interface: 1220) 'this is a pointer to the future. We will all have hard disks in a couple of years' time. Removable disks can wait until the mid-1990s' We gave the drive 59%.



You can only get away with this sort of thing on a very irregular basis...

● Our March 1990 issue carried a review of Battle Squadron. Stewart C. Russel concluded his review by stating: "Everyone went gaga over Xenon II, and rightly so - it was the best available then. But now Battle Squadron is the best. Xenon II scored the perfect 100 per cent. How can we express that Battle Squadron is even better? Hmmm. I'll show you how...."

● Our thirtieth issue way back in December 1990 carried an ad from Greater London Computers offering an A3000 with a 100Mb hard drive, a multiscan monitor and 6Mb RAM for just £3793.85.

● Issue 34 carried a news story from Howard Newmark, then head of The Software Business, who stated that in the future all games for the Amiga 500 would come on a cartridge his company was creating to stop piracy. It never happened.

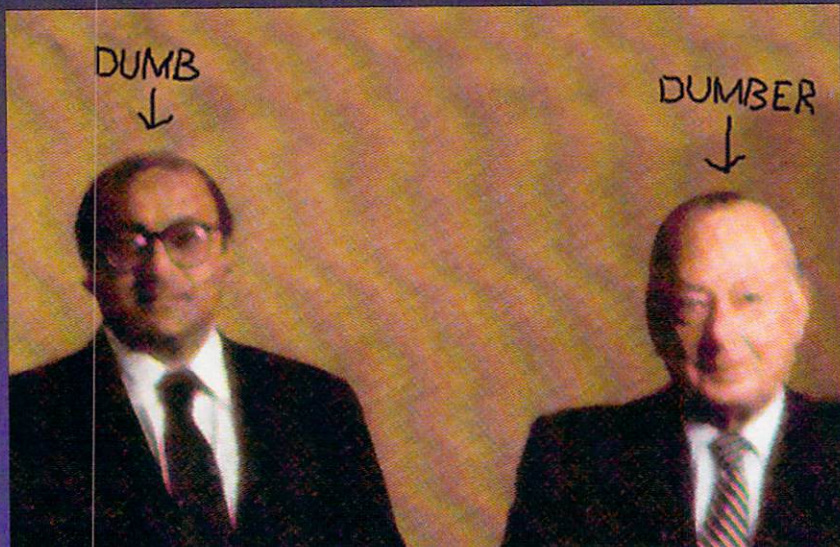
● We reviewed the Courier HST modem in our May 91 issue. This 14.4k modem then cost just £1144.25

be on sale by Christmas this year.

● Our November 91 issue carried details of the A500P as it was then called, also known as the A500+. It would have 1Mb RAM Workbench 2.04 and the enhanced chip set found in the A3000. Commodore hope to sell it for the same price as the existing A500 (when this machine did start to ship in numbers, dealers threatened to drop support for it if compatibility problems with games continued).

● Issue 49 (June 92) saw the announcement of the A600 and Commodore showed the A570 CD-ROM drive for the first time. They also launched a set of CDTV peripherals designed to make it more like a home computer.

● In July 92, only eight months after we first covered it, Commodore announce that they are ceasing production of the A500P. CBM US announce that they will be launching new Amigas later in the year and rumours surface about a new machine codenamed Amiga Classic 2200 based on 020 with hard drive as standard



and separate keyboard, monitor included for under £1000. The A570 is also further delayed this month.

● In October 92's issue, CBM state that there is no A800, but that the A4000 and A2200 are due for launch in September 92 (remember, we probably wrote October's news in about June of that year). CBM cut the price of the A600 to £299, but leave the hard drive version at £499 and CBM US announce that the States are to get the A600 in the autumn.

● Our November 92 issue carried news of three new A600-based bundles. 'The Wild, The Weird and the Wicked' contains DPaint III, Microprose Grand Prix, Putty and PushOver for £349 and Epic and Language Lab bundles also have a hard drive and different software for £499. We also heard that a new factory had been started in Irvine in Scotland and that the A4000 would be on sale by the end of October. The A2200 has officially been dropped, but insiders reckon there'll be another new Amiga next year. The A4000 is shown for the first time in the US.

● Our December 92 issue gave the first details of the A1200 and the A4000 is finally launched in the States at a price of \$2800, but the double A chipset is renamed to AGA, apparently to avoid confusion with an association that deals with alcoholics. Hmmm, maybe I shouldn't fly with American Airlines on that basis now...

● Our Feb 93 issue told about the trouble with exchange rates and how the dollar's rise in value from \$1.98 to the pound to \$1.53 to the pound was responsible for Commodore putting up the prices on all Amigas by £30.

● In April 93 we told the world about Commodore's plans for the A4000T and DSP module, which would be on sale, according to Commodore, by the summer of 93. That issue CBM also announced an AGA display enhancer

● May 93 saw the launch of the A1200HD with an 80Mb drive.

● In our June 93 issue we told you that Commodore had

## MOST DELAYED PRODUCT

- Video Toaster (first announced 1987, released 1989). Never really reviewed in AC owing to the fact that it was a pure NTSC product and we then had no US version.
- LightWave 4 (first announced in our April 95 issue. We promised reviews of it almost constantly for a year).
- TFX (Ocean gave us the finished version for review back in March 95. The review appeared in May's issue and we gave it 90%. The game has still not been released, but may be by the end of April this year).
- PageStream 3 final (i.e. 3.1) first announced in our Dec 93 issue, it still has not reached a final version.
- PAWS. The Portable Amiga Work Station. We first published details of this monster in our March 95 issue, but it had already been doing the rounds for a while then. We still don't have one for review...
- Emplant seemed to take forever to surface (it was first announced in our Sept 92 issue). The Mac version is supposed to be pretty good now, but the PC side is still slow and what happened to the PCMCIA version or the super fast graphics card?



**First up the pyramid. AT said it was 'dynamic'. Then came the Corrupted Bodoni version – the red square was said to represent technology**



***"They used car spray paint on my face for this picture and it burned for days afterwards" – Steve White***

***"With the fortunes of the Amiga in the balance we don't know if we'll be around to reprise this feat of research, but we look forward to seeing you in another 100 issues"***

● Issue 80 carried a release from CBM UK about a new console promised for Christmas 95, to be known as the CD64.

[illegible]

**Remember Ham-E? This gizmo gave you HAM-8 on an A500**

● **Issue 96, AT announce Internet bundle.** It will come with the same software as the Magic pack, but also with Internet software to link up, mail, ftp, IRC and browse the Web. The pack will have a 170Mb hard drive and a 14.4k modem for around £600.





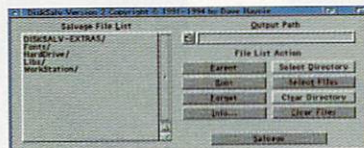
# DISKSALV

Dave Haynie (Shareware)

The first thing that any Amiga owner should purchase is a hard drive – using Workbench from floppy disk soon becomes very irritating. However, the only problem with a hard drive is when it goes wrong. And when they go wrong you'll curse yourself for not doing more to protect your precious data.

Fortunately, much of the best application software is Shareware and often appears on the *Amiga Computing* coverdisks. One such program is DiskSalv – an excellent program that not only repairs hard drive faults but can also recover previously deleted files.

DiskSalv comes with an extremely user-friendly interface that will even allow you to repair and salvage files from floppy disks. You can be sure that your hard drive will choke at some time, so make DiskSalv your top priority – be prepared.



Ⓢ **DiskSalv is an excellent program for repairing damaged hard drives and un-deleting previously deleted files. It's shareware too!**

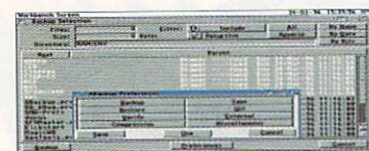
# ABACKUP

Denis Gounelle & Reza Elghazi (Shareware)

Protecting your hard drive is one thing but it is also sound advice to back it up to floppy disks once every six months. There are many good programs that will do this for you but certainly the best, and it's shareware, is ABackup.

ABackup allows you to store any part of your hard drive onto a set of floppy disks which you can, if you wish, restore back to your hard drive at a later date – also via ABackup.

Just like DiskSalv, it comes complete with a very user-friendly interface which is self-explanatory, even for the beginner. ABackup will calculate how many disks you will need for your backup and even compress the files, therefore reduce the amount of disks required. Just like DiskSalv, ABackup is essential for hard drive users and if data gets damaged you will also have a recent backup to restore.



Ⓢ **Keeping a regular floppy backup of your hard drive is essential and ABackup does it all for you with ease and speed**

# beginners guide

Part 6

## Jargon box

**Shareware** – shareware software can normally be purchased from PD libraries all for the price of a disk, or found on the *Amiga Computing* coverdisks. Shareware means that the author only requires you to pay a registration fee if you like and use the software. Shareware is the major backbone behind the Amiga's success and should be supported.

**PD** – Public Domain companies provide shareware software for only the price of a disk plus a small covering charge to keep the company in business. This means you can purchase software for around £3 – a bargain I think you'll agree as much of the shareware software is better than its commercial counterparts.

In this, the last instalment, **Steve White** demonstrates essential software for you and your **Amiga**

## DIRECTORY OPUS

GP Software (Commercial)

Unless you use your Amiga solely for games, which would be a waste, all Amiga owners eventually have to dabble with files directly, whether it's deleting, renaming, copying or moving them. The only means Workbench provides to do this is the Shell which although powerful is not very user-friendly – especially for the beginner.

There are many good shareware file managers but by far the best is a commercial product called Directory Opus by INOVATRONICS. Directory Opus has been around now for quite a while but it still retains the File manager crown holder. It is an excellent program that is completely configurable so as to provide the maximum power for your system, as well as an interface suitable for your own require-

ments. Directory Opus allows you to manipulate files in every way as well as many other functions including viewing pictures, playing sounds and editing text. The latest version is 5 but Directory Opus 4 is considered by users to be the best.



Ⓢ **Directory Opus 5 can act as a replacement for Workbench, although most users prefer Directory Opus 4**

## VIRUS CHECKER

John Veldthuis (Shareware)

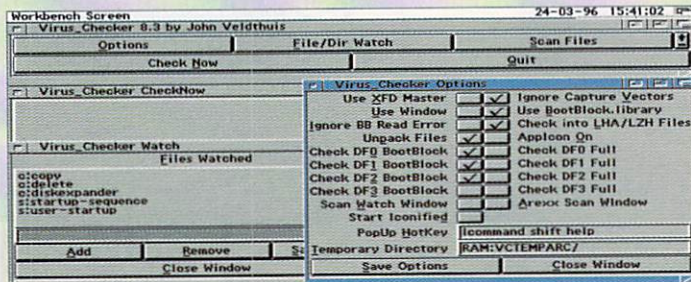
A virus is a specially written program that attaches itself to your hard drive or floppy disks and goes all out to destroy the data on them – usually accompanied by a message from the sad and lonely individual who wrote the virus.

The virus menace used to be fairly commonplace for Amiga owners but thanks to virus killers the spread has been severely reduced and new viruses are few and far

between. However, it always pays to be cautious. Virus Checker, by John Veldthuis, is certainly the best and most up-to-date virus killer there is, and constant upgrades always ensure the virus threat is kept under control.

Virus Checker is an unobtrusive program that simply sits in the background of Workbench and waits for disks to be inserted in your Amiga floppy drives. It then checks them and if it finds anything suspicious informs you of the problem and asks you if you want it to be eradicated.

It also has the ability to check a directory and its contents for certain viruses as well as keep a constant eye on particular files that are vulnerable to certain viruses such as the Startup-Sequence in the S directory.



Ⓢ **The virus menace is a serious one so keep your Amiga well-protected with Virus Checker by John Veldthuis**







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Requires VistaPro 3.0 or newer. AmigaDOS 2.04 or newer, 2 megs RAM & hard disk required.

List Price \$69.95 - *Special - mention this ad - \$39.95*

## SIGH-Light 5.4

Forget to spring forward or fall back? Let SIGH-Light do it for you! Can be set for America, UK or Europe. Adjusts your Amiga clock for Standard or Daylight Savings Time.

Requires an Amiga Computer with a working clock.  
List Price \$29.95 - *Special - mention this ad - \$19.95*

## VistaLite 3.0

Want to make beautiful landscapes like VistaPro but don't have the memory? Try VistaLite! Render fly-by animations of your favorite places. Supports 256 color and HAM-8 AGA modes. Contains Altitude Texture, Clouds, 3-D trees. Reads MakePath scripts and builds VANIM animations. VANIM viewer included.

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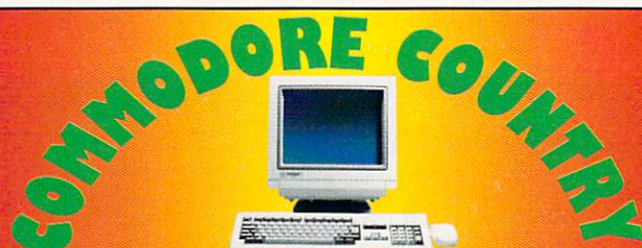
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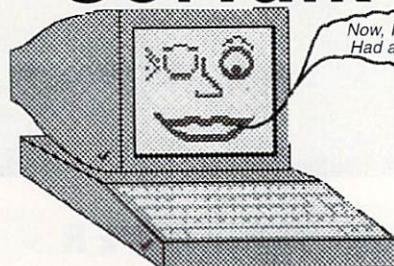
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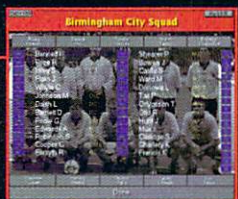
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## Contents

### System News

Andy Maddock looks at all that's new in the Amiga games world, and comes up with surprisingly little. Still, he writes well enough



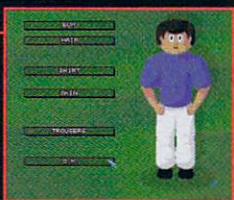
### Tracksuit Manager 2

We haven't had a football game for months and then two come along at once. Typical



### World Golf

It's a long time since we had a golf game to review. We only wish it was good enough to challenge the likes of MicroProse Golf



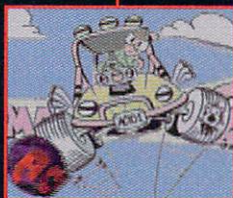
### Slamfitt

Pinball is a great game, little metal balls and buzzers and things. You even get bright lights and sound - it's great



### Data Disk Special

When we use the word 'special', it's because there are two data disks. If there had been a couple more we would have used 'round-up'



## Previewed

### Championship Manager 2

Hurrah! Hip hip Hurrah! It's here. Yes it's here. No, it really is here. Just have a look at this my son. Prepare to be amazed!



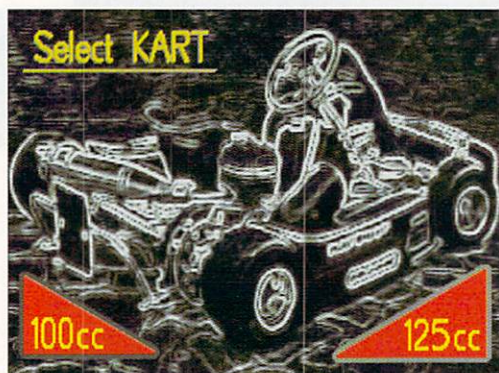


By Andy Maddock

## Virtual karting for £15?



TM have decided to re-release Virtual Karting for Easter. They've also decided to set a new price which is £14.99. So hurrah for them.



OTM's Virtual Karting has gone even cheaper. A bit of a 'mare if you already bought it but otherwise... great!

## A trophy cabinet

We have been assured we will finally have a preview copy of Atrophy very very soon - hopefully as soon as next month. To keep you in further suspense here's a piccie...



Here's the excellent title screen piccie from the interesting new shoot-'em-up coming soon

## Footy's nearly gone again



Many football fans are already pulling their hair out as the football season is almost at a close and the final version of Championship Manager 2 is still not here. However, we have been promised we will have a reviewable copy next month.

Also, Domark are said to be 'moved' after all the response and patience they have been given. So remember - next month!

## GTI Charts - March 1996

The big German distribution company have sent us their latest charts from March 1996 so you can see what the best selling games have been over the last few months.

## Top Ten Amiga Games

1. Gloom Deluxe
2. Star Crusader AGA
3. Sensible World of Soccer
4. Breathless AGA
5. Slamtilt
6. Obsession
7. Worms
8. Super Streetfighter 2 AGA
9. Super Tennis Champs
10. Black Viper

## Top Ten Amiga CD-ROMs

1. Aminet 10
2. Aminet Set 2
3. Meeting Pearls
4. Aminet 9
5. Gateway CD 2
6. Gamers Delight 1
7. Aminet Set 1
8. Amiga CD 3/96
9. Workbench Add On
10. Eric Schwartz CD



Sensible Soccer has a surprise entry at number three. Most people would believe it to be the best game ever... do you?



## Hey look, I'm Bonehead now

Yep, our competition is hotting up as our mail bag is filling up to the top once again with more entries for our 'Song for the Amiga' competition. Actually, we won't tell you how many we got, but er, we could do with a few more. As I mentioned last month, the ones we have received are absolutely brilliant and we will announce the winner soon. Keep them coming! Come on, all you have to do is jot down some lyrics - it's as easy as that. You don't have to perform it if you don't want to.

Send your 'Song for the Amiga' to: Hey look, I could be Guigsy next month!, System, Amiga Computing, Media House, Adlington Park, Macclesfield SK10 4NP



*The hills are alive with the sound of... er sorry, wrong film*

## Oh dear

Last month we informed you about how to download a free demo copy of Alien Breed 3D 2, but we printed the wrong Internet address. If you did try entering the address on your Web browser, you would not have got very far.

I will come clean. It happened because I didn't have access to the Web to find the original address and planned to change it a later date. Sorry.

Oh yes, that magic address is definitely <http://www.team17.com/team17/T17/ab3d/a/b3dii.html>



**Here is the proof that we do know the address. It was purely an accident and meant no harm to anyone, OK?**

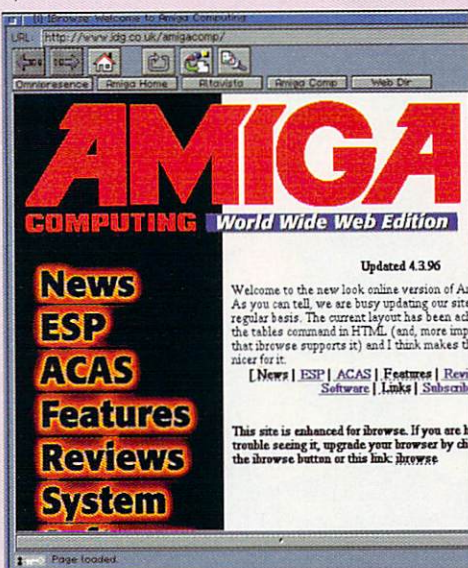
As you can see the charts are quite surprising. Sensible World of Soccer third best to Gloom and Star Crusader? Also, Pinball makes quite an appearance with the excellent SlamIt! and Obsession. And to top off the charts, at 10th place is a game we've never heard of, so there you go.

The CD charts are quite predictable with Amineet occupying four spots in the entire top ten including the top spot with the latest Amineet release. There is only one actual game CD which appears and that's Gamers Delight 1 which was far better than the sequel. The last spot is taken by the Eric Schwartz picture and animation CD which is, of course, excellent value for money.

## The Internet is great

Although you may have read elsewhere in the issue that we have a Web site containing the news, ACAS, ESP and other features contained in the mag, did you know that System can be accessed too. Yep, you will find the latest news and possibly a review or too as well as a tips section which we are working on at the moment.

Let us know if you have any views or ideas you could put forward to make it special. Write to us at the usual address marking your letter 'System News.'



**This is the fabulous AC Website where everything is ream**

## Next month

Okay, so you've only just turned the first page of System and already you are looking at what could be coming next month. It doesn't matter though does it? Well, it's the first time we've ever done a System next month bit so it's quite exciting, isn't it?

Hopefully we'll have a full review of Championship Manager 2, XTR Data Disk, Legends, and we will also have previews of Atrophy and... well you'll have to wait and see because we promise it'll be another packed issue full of the latest news, reviews and previews as usual.



# Pro Rugby

By Andy Maddock



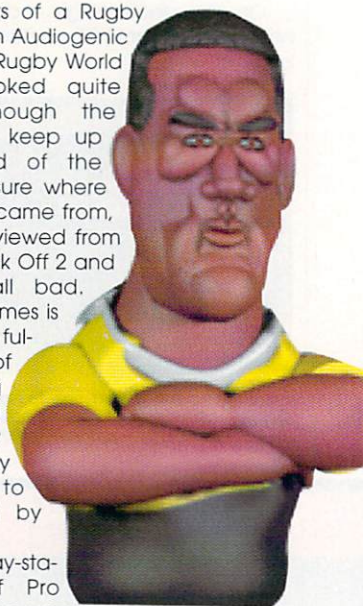
**A**lternative Software have been noted for their past releases such as Thomas the Tank Engine's Pinball, Sooty and Sweep paint packages and, more recently, Tracksuit Manager 2 which is reviewed in this issue. Who would have thought a Yorkshire software house with such a crazy track record could release an arcade Rugby game?

Rugby has appeared in the media limelight for quite some time now, with the main area of discussion being the Super League. Some of the great Rugby sides from all over the world have already begun battling it out for the championship. The likes of Wigan, Castleford, Warrington and St Helens are pitted against the likes of Paris and er, that's it. Well, at the moment.

The main attraction so far is the fact it will be the first Rugby League game on the Amiga. According to the company boss of Alternative Software, Roger Hulley, he couldn't believe there hadn't been a Rugby League game already: "There have been plenty of Rugby Union games, but that's not the same thing." The development team involved are called Charybdis who hail from Nottingham and have only been in the business for a short time.

Previous efforts of a Rugby game come from Audiogenic with their game Rugby World Cup which looked quite impressive, although the sprites failed to keep up with the speed of the action. I'm not sure where the other game came from, although it was viewed from overhead like Kick Off 2 and it wasn't at all bad. However, two games is never enough to fulfil the dreams of Rugby loving Amiga owners, so can Pro Rugby be the first Rugby League game to take the world by storm?

The PC and Play-station version of Pro Rugby is still a long way



## Running commentary

One more feature rumoured to appear in the Amiga version is the commentary. Yes, I said commentary. Never before have we heard a real life commentator on the Amiga waffle on about the action. We all know about the Amiga's sound capabilities yet they never seem to be used in games - just music and graphic demos. If you've watched a league match on Sky Sports you will have heard two of the best commentators who have ever lived. They may not have the true professionalism of greats like Hugh Johns or Kenneth Wolstenhome, but for entertainment they just cannot be beaten. These men are Eddie Hemmings and Michael 'Stevo' Stevenson.

Eddie is the main commentator on the action while Stevo will chip in with his quick wit, making a superb comedy duo who cannot fail to please. The commentators are certainly the icing on the cake of what should be an absolutely brilliant game.





off completion, never mind the Amiga version, so we've decided to label it as work in progress rather than a preview.

Basically, the game will be viewed from a halfway line perspective (like a view from a Main Stand) which is usually the best option for the Amiga after seeing a number of football games adopting various angles. It's also the simplest and you can see all your players on the pitch so you can plan attacks and position your line of defence.

Also, as the game is meant to be as realistic as possible the pitch will become torn up as you begin diving about the place, you will be able to control and see the spin on the ball when you're passing it down the line, and a whole lot more. Obviously, details for this on the Amiga are quite sketchy but you can bet that Alternative Software will squeeze as much as possible in for Amiga fans to enjoy.

The graphics (although on the PC) are pretty outstanding and feature massive sprites for the

## The chosen one

So why Rugby League? Well, obviously it is the best idea as it seems to have injected new life into itself from the Super League - especially with armchair supporters. However, the main factor is that Roger Hulley is a big Castleford fan and for him to see his own team in his own game isn't bad.

Rugby League is also pretty strict in the way it's played. For example, there can only be five tackles then play must change hands. You can imagine that this is slightly easier to work into a computer program rather than the Rugby Union approach where you don't stop and start as much, and there aren't as many rules.

players who will also have their own characters, personality and looks. But again these graphics will certainly excel on the PC, so we'll just have to wait and see how clever the programmers are in maintaining these original features. It will be difficult, but worth the wait.

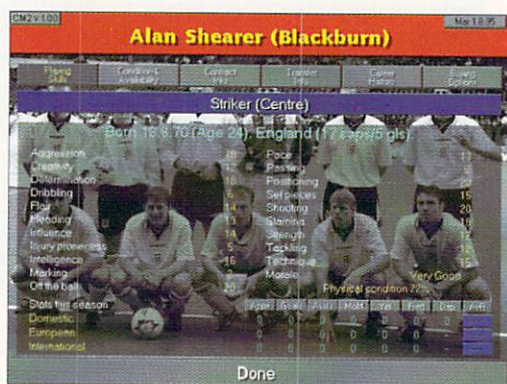
‘The graphics (although on the PC) are outstanding and feature massive sprites for the players who will also have their own characters, personality and looks’

**You can see the sprites from the PC version look excellent - chunky too. They will each have their own individual look and personality just like real-life. I mentioned before that Pro Rugby is a long way of completion and it's difficult to say which features from the PC version will make it into the final Amiga version.**

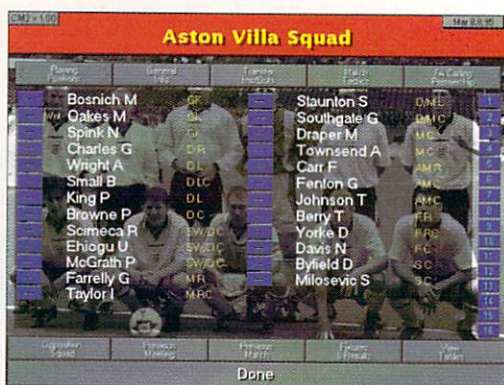




# preview



**Would you pick Alan Shearer for your England side even though he's only scored a limited amount of goals for them?**



**Aston Villa - recent Coca Cola Cup winners. Congratulations and respect go out to them for winning a place in Europe**

# Championship Manager 2

Previewed by Andy Maddock

**I**s it my imagination or is it finally here? Why don't you just sit back and breathe a sigh of relief because Championship Manager 2 has finally arrived - the waiting is over. The game is almost completed and here's the preview.

Championship Manager was spawned a long time ago by a bloke named Oliver Collyer and he was responsible for presenting us with just about the best football game - well actually, just about the best game ever. It was so good that it even managed to sell 300,000 copies across Europe and when the update disks were released they were like gold dust everywhere.

Now the sequel is almost finished after being put back month after month. The official release date was 29 February and advertisements had been put around months beforehand. But then came the news that it would be put back another month. However, I'm sure that if anyone has had the chance to play the PC version then Amiga owners will be crying out to Domark to get them to take their time and make sure they don't rush it as it could spoil everything. PC owners will know all about lengthy waits especially for installation and for calculating results during mid-season, although how Domark will manage to squeeze an 8Mb PC game onto a 1Mb Amiga defies all logic - unless they decide to cut out some of the main features which would be disastrous.

The PC version contains sampled commentary by none other than Clive Tyldesley and boasts



**Birmingham - buyers of the extra large striker Kevin Francis from Stockport. We don't care, he wasn't that good anyway...**

digitised pictures of every football ground in the country - obviously the Amiga version can do without these as they'd only take up disk space which isn't there anyway, but maybe it would be nice to say "Ooh, I've been there." or "I've stood there I have!" However, these so-called cosmetic changes shouldn't affect the actual game at all.

So what about the actual game? Well, there will be 4000 accurate player stats and histories just like the original, although this time if you manage to take your club team to a number of heights during your career you can expect the national

Championship  
**MANAGER**

**2**

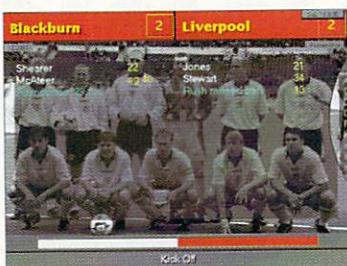


## Chinese whispers

A fantastic rumour which is circulating the whole Amiga world is the ability to allow 92 human managers to battle it out against each other, so if you've got 92 close mates who promise not to trash your house when they lose then you must be pretty amazing to have such friends. So why the ability to have 92 human managers? It's not as though you can invite the entire pub round for a season or two. Is it for Play-by-Mail competitions whereby you can run

a football management game via the excellent British postal service? Who knows... Who really cares?

If you do happen to become a big fan of the whole game you will be pleased to know that later in the year, Domark are planning to release some data disks containing leagues from countries such as Italy, Spain and Germany – so all those dreams of Kuntz and Ravioli will come true after all.



Here's the next lot of England fixtures. You won't have much to do between them so make yourself a cuppa



This is Les Ferdinand, he's a great player. Ooh, yes. At least Stockport didn't turn him down before he went to QPR. Damn!

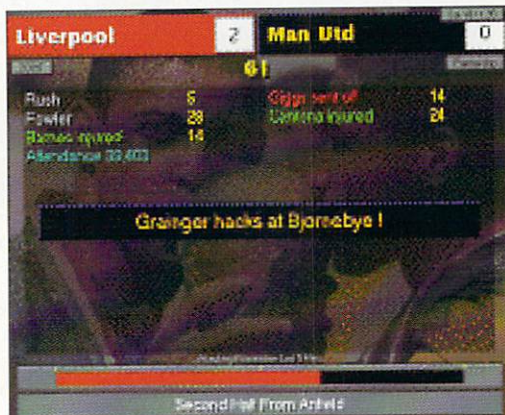


It's half time, drink some water, suck on some oranges. Of course I can remember the score... It's 2-2... or was it 2-1

job to appear – and considering it's popularity and discussion during the last months you may decide to stick with your club – but surely a hole would be left on your achievement sheet. The national job is supposed to be what football's all about – only the press seem to muck it up somewhat. This is easily the best aspect about Championship Manager 2 – there is no press... you'll be pushed hard enough to make your own fans happy never mind anyone else.

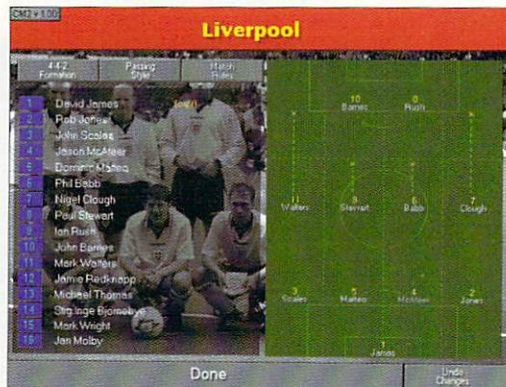
Championship Manager will also follow the actual season calendar so the Coca Cola Cup first round matches may be played before the Premier League starts, there will be weeks free in the top for international games, and the cups such as European and Cup Winners will all be played mid-week. If you're unlucky enough to have matches postponed you can expect a hefty build up of games during your last two months. It's that realistic.

Hopefully, all the bugs will be wiped clean from the sequel, especially for loan players. I'm not sure whether this has happened to anyone else but when I loaned a player out he stayed at



This is a PC screenshot. Can you tell the difference. What do you mean "yes." Try squinting...

the club until the end of the season, and when the new one began he decided to disappear completely from the entire game. It's probably just me though. He was probably there all the time.



Liverpool – Phil Babb, Steve McManananananaman, Jamie Redknapp. They couldn't be accused of having odd names, no?

## Insight

If you can remember the amount of detail that Championship Manager contained, there will be a lot more. There are more stats to look at so even the biggest statistic buffs will think they're in heaven. The match sequences have also been drastically changed, adopting a very exciting look which certainly will not contain any bland system fonts which make the game look totally unprofessional.

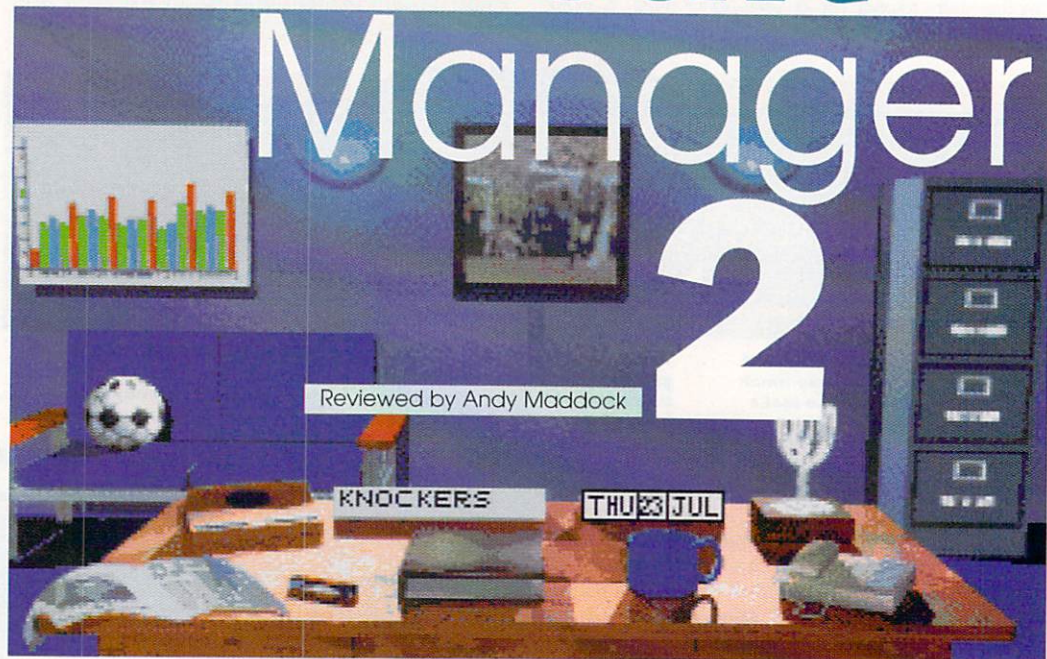
Anyone who's already ordered a copy of Championship Manager 2 has done the right thing. I've got a feeling this will be one of the best-selling Amiga games ever. You can check out a full review hopefully next month – if it hasn't been put back another month!

Anyone who's already ordered a copy of **Championship Manager 2** has done the right thing. I've got a feeling this will be one of the **best-selling** Amiga games ever,



# Tracksuit Manager 2

Reviewed by Andy Maddock



*Who am I? I'm Scottish. I'm pretty miserable. I think I know what I'm doing and I bought Andy Cole. Tee hee.*

**A** new football game? What's happening? Shouldn't there be a Doom clone here instead? Well, the answer is no. At last we can review what all you gamers have missed during the last four months - a brand new football management game.

And as you can see, on first looks Tracksuit Manager 2 could possibly pass for the sequel to the once reigning football management sim, Championship Manager 2. The first Tracksuit Manager was reputed to be either the first or one of the first football management games ever, and to be honest it showed. It might've been quite a game when it came out but try playing it now and you'll be on the edge of throwing your computer out of the window.

So Tracksuit Manager 2 is here and I know what

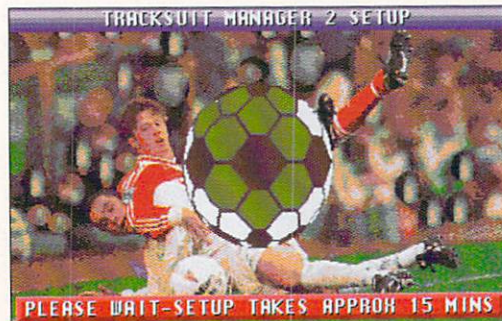
you want to hear. Is it going to be as good as Championship Manager 2? Well, let me tell you what it's all about.

Basically, if you've ever played Championship Manager you will know exactly what to expect. You can manage an English club from the Premier League to the 3rd division and there is no real objective or goal (Ho ho) to be achieved - all you need is success.

When you begin the game it will seem as if you are sitting down at your desk within the stadium - incidentally, no other football management game has used this idea to great effect apart from On The Ball. You have access to a telephone for transfers, a filing cabinet to keep the club

## Match crisis

Now here comes the crunch. When you've managed to cycle through each day to get to the match day (which, incidentally, is a Sunday!), the tactics screen comes up allowing you to alter your individual team tactics, name your captain, push players up or drop them back. Everything is set-up, so you anxiously click on the 'exit' button and are lead to the match sequence screen. This is where Tracksuit Manager falls flat on its face. There are two badly digitised commentators gibbering to each other about the action which pauses for a number of seconds each time the ball goes out of play. There are two buttons on the right-hand side of the screen to speed up the



*The whole game set-up takes 15 minutes. It's a good job that cuppas only take about five to make, so you can have three. Hoo-ray!*

GRAPHICS

71%

SOUND

61%

GAMEPLAY

87%

OVERALL

87%

PUBLISHER

Alternative Software

DEVELOPER

In-house

PRICE

£24.95

DISKS

2

HD INSTALL

No

SUPPORTS

All Amigas



FA PREMIER		PRED					NEXT					EXIT							
		PL	W	D	L	F	A	W	D	L	F	A	W	D	L	F	A	P	T
ASTON VILLA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAN CITY		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N FOREST		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHEFF WED		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COVENTRY C		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACKBURN R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST HAM U		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAN UTD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q.P.R.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHELSEA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARSENAL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDDLESBRO		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEWCASTLE U		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIVERPOOL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EVERTON		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHAMPTON		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTTENHAM H		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEEDS UTD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOLTON		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIMBLEDON		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

23 Jul

Here are the league tables. You can see that if everyone in a season drew 0-0, it would be quite bland

MAN CITY STAFF	
MANAGER	ANDREW KNOCKERS
AGE: 35 YEARS	CHARACTER: IMPULSIVE
BOARD 50%	REPUTATION: UNKNOWN
TEAM COACH	ASA HARTFORD
AGE: 40	CHARACTER: ASSURED
	ABILITY: FAIR
CLUB PHYSIO	COLIN LAWRENCE
AGE: 39	CHARACTER: EASY GOING
	ABILITY: FAIR
LEAGUE SCOUT	JOE WHITTINGHAM
AGE: 41	CHARACTER: UNSELFISH
	ABILITY: FAIR
LEAGUE SCOUT	MARTIN ARCHER
AGE: 60	CHARACTER: CONSIDERATE
	ABILITY: FAIR
LEAGUE SCOUT	LEE TAYLOR
AGE: 41	CHARACTER: SURE
	ABILITY: GOOD
YOUTH SCOUT	TIM CHALK
AGE: 36	CHARACTER: EASY GOING
	ABILITY: FAIR
SACK	EXIT

Here's the Man City staff list. Asa Hartford used to manage Stockport County you know. See, a useless fact for you...

records in, the newspaper to check the headlines, a calendar so you know what day it is, and what's this? A pack of Fizzy Chewits? Yes, Fizzy Chewits I said. Tracksuit Manager 2 is sponsored by those tangy flavoured delights... right where's my \$50?

So everything a manager could need apart from a \$15 million striker is close at hand. Now all you've got to do is pick the team, negotiate bids, and do all management-like things to take your team to the top.

The actual interface is quite cheap looking. The colours are a mix of

green and red and as you switch between screens you will get a pretty badly digitised picture of Steve McManaman and Rod Wallace. The interface is so friendly and perfect it's a shame it's presented in this way. The fonts are big and bold and you can always see what you're doing which helps a great deal.

I suppose I would go as far as saying the actual menu system is better than Championship Manager. The team selection screen is easier because it informs you of the players that have either been injured or suspended by highlighting the missing number from your squad. Also, the finance is included in a lot more detail, as well as club records and histories.



Does anyone know why you can't turn the commentators off on Sky Sports anymore? Write in and tell us...

MAN CITY MAIN SQUAD		EXIT
01	A. DIEBLE	GOALKEEPER
02	I. IMHIEL	GOALKEEPER
03	I. BRIGHTMELL	DEFENDER (M)
04	P. LAKE	DEFENDER (M)
05	S. LOHAS	DEFENDER (M)
06	P. HILL	DEFENDER (M)
07	A. MCGNAGHAN	DEFENDER (M)
08	R. EDGEMILL	DEFENDER (M)
09	D. BRIGHTMELL	DEFENDER (M)
10	K. SYMONS	DEFENDER
11	R. CURLE	DEFENDER
12	P. SIMPSON	MIDFIELD (A)
13	N. SUMMERBEE	MIDFIELD (A)
14	U. ROSLER	MIDFIELD (A)
15	P. BEAGRIE	MIDFIELD (A)
16	N. CROUCH	MIDFIELD (A)
17	D. KERR	MIDFIELD
18	G. KINKLADZE	MIDFIELD
19	G. FLITCROFT	MIDFIELD
20	G. CREANEV	ATTACK
21	N. QUINN	ATTACK
22	A. HIVE	ATTACK
23	C. GRIFFITHS	ATTACK

Manchester City will win the league next season. There's no stopping them now they've got Kinky



Here's the complete squad. Here are some players. Here are some numbers... Here's a bland caption

action, but it still pauses, and if you score a goal an annoying flashing display will come up and you have to press the button to kick off again. This, in my mind, defeats the object of speeding the game up.

The whole presentation of the match looks like a PD program written in Amos. When you return to your desk to view league tables it looks so much better - it's like a different game. Although the game lasts for seasons and seasons, I couldn't get through the first month without becoming annoyed and frustrated. Even the blandness of the original Championship Manager's match sequence was more enjoyable and exciting.



Here are all the cups. You can find them under the menu 'Cups Man Utd will never win again'

“If you think you can put up with the awful match screens then there's enough detail here to satisfy you to make up for it”

## Final word

The only thing stopping Tracksuit Manager from being a Premiership contender is the truly awful match screens. If you think you can put up with them there's enough detail here to satisfy you to make up for it, although with Championship Manager 2 minutes away, maybe you should think twice.



## review

## GRAPHICS

89%

## SOUND

87%

## GAMEPLAY

90%

## OVERALL

90%



The graphics use a graffiti style which works well



Lanesaver forces the ball back into play when it would otherwise disappear down the lane

Reviewed by Tina Hackett

## Slamtilt

## PUBLISHER

21st Century

## DEVELOPER

Liquid Design

## PRICE

£29.99

## DISKS

5

## HD INSTALL

Yes

## SUPPORTS

A1200/A4000

Liquid Design, a new Swedish team, look certain to make their mark with this title

As any Amiga gamer will know, publishers 21st Century have always been prolific in bringing out high quality titles for the platform. Their games usually fall into the category of pinballers and each time a new one comes out it seems a step up from the last one they released – despite the fact you thought that one couldn't get any better. Firstly there was Pinball Dreams, then Fantasies then Illusions. All getting better each time.

However, sometime last year they brought out a title which unfortunately broke this rule. And nobody was impressed – except perhaps Amiga Technologies who made the questionable decision to include the game, Pinball Mania, in their MagicPack bundle. The problem with this title, though, was that the development team they'd chosen was different to the one who'd done the other games. This new team didn't quite have the flair that Digital Illusions had and although not a terrible title, it wasn't that wonderful either.

There has been no **compromise** on gameplay, graphics or sound and you immediately get the feeling of a **polished product**,

Mediocre most aptly described it. After that we'd pretty much given up hope. We thought 21st Century might, at this point, just give up on us all. Fortunately though, they must still have faith in the Amiga platform, and good on them too. Signing up the talents of a new Swedish team, Liquid Design, a new title was soon on the horizon. It happened quicker than you could say "It's a new pinball game from 21st Century" and no sooner had we time to do a preview then we were sent the final copy – no delays or anything – ready to review. "Too good to be true?" we thought. Well, no it's pretty impressive stuff.

Despite a speedy release, there has been no compromise on gameplay, graphics or sound and you immediately get the feeling of a polished product – and one which will boost a jaded Amiga gamers collection. You get four tables to try your hand at, and each is themed and has music, graphics and missions to match. First up is Mean Machines, a motor racing table,







**Night of Demons:** This is the horror themed table and you will need to defend yourself against the evil Zombies. To kill a Zombie and earn an extra 5,000,000 points, shoot any ramp showing a flashing yellow lamp. If in Bat Butcher Mode you will have to shoot the flying bat from the sky with your shotgun.



**Ace of Space:** Survival in space is the name of the game. You will have to destroy the Asteroid Belt and kill the Aliens with your flamethrower in the 3-ball multi-ball mode. The Final Mode is The Big Blam where you can destroy the whole universe. When you've played through every mode then you can try your hand at this 4-ball multiball where you can shoot any ramp to explode a planet and collect a jackpot.



**Mean Machines:** hit the road as you pit your wits against Monster Car Mode where you can use your Monster car to crush the smaller cars, or Formula 1 Race Mode where you use the flipper keys to steer your car around the track shown on the scorepanel video.



**Pirates:** shoot the Mermaid Ball-Trap to get the Mermaid bonus. This starts at 1,000,000 points but can be raised through the Magnatable. This is a magnetic playfield where there are magnets placed under the red lamps - these can be controlled with the flippers. You will also have to control a mutiny and a raging storm, various multi-ball modes.



**In Pirates** you will need to defend yourself from sharks and can dive for sunken treasure



**Tracks and ramps** have been well designed for players of all skills

the next is Pirates, with, (surprise) pirates, piranhas and mutiny. Ace of Space has a futuristic theme where space ships, asteroids and aliens provide the setting, and lastly, Night of Demons is a table inhabited by a naked (bar a strategically placed serpent) vampiress. Being a pinballer there's not

a great deal to explain about the gameplay - you simply use the keys to flip the flippers and send the ball shooting around the table. There are plenty of missions to get to grips with and each table has a variety of modes to keep things differ-

## Video modes

The Video Modes are played in the scorepanel and add some variety to the game. Here are some that are available:

**No Brain No Pain** - you must try and keep track of where the brain is going while the skulls are rotated. When they stop you have to pick the skull that the brain is in.

**Death Planet** - fly your ship through the inner tunnels of the planet to get to the centre. It's harder than it sounds because you have to guide your ship through the narrow tunnels with the flipper keys.

**Knife Throwing** - throw knives at your enemies and try to avoid being taken out by

cannon fire. The flipper keys allow you to move left and right whilst the return key will throw a knife.

**Formula 1 Race** - there are six windy tracks that you have to steer your car around with the flipper keys. Don't bump your car too much though as you will lose energy.





**Ace of Space offers a video mode which has you pitting your skills against death-defying tunnels in your space ship**



**The scorepanel at the top provides animations to add atmosphere such as giving the impression you are flying through the galaxy**

Graphically, the tables are well drawn and detailed enough to look good but not so much as to interfere with the gameplay,

ent. What makes this rather different from the rest, though, is the LED score panel at the top of the screen. Rather than just showing simply the score, you also get various video modes which provide different arcade challenges. On Mean Machines, for example, the video mode shows a car which you'll have to guide around the track with the flipper keys. These extra challenges work exceptionally well (although they definitely don't have enough gameplay to stand up in their own right) and keep things interesting.

As far as the main gameplay goes, the movement of both the ball and the flippers feels realistic and the tables vary from being quite simple with only a few tracks to windy, complex efforts where you'll need to keep your eyes peeled. The

sound effects also work well in enhancing the realism. Graphically, the tables are well drawn and detailed enough to look good but not so much as to interfere with the gameplay. Night of Demons, for example, may suit a beginner better as the table is quite plain with only a few ramps and tracks. These different levels of difficulty, whether intentional or not, work well and make the game ideal for any pinball player - whether novice or expert.

There are some other nice little extras such as a Lanesaver Feature which is a metal fence in the sidlane which forces the ball back into play instead of allowing it to be lost down the sidlane. Another is the Magnatable which is a magnetic playfield where you control the magnets with the flipper keys to get the ball locked between them which results in various awards.



**Night of the Demons looks quite simple in layout but the various missions keep it taxing**

## Final word

Slamtilt is without a doubt an excellent title. On the one level this is an accurate simulation of the real thing (as much as it can be in 2D anyway) and on another, the arcade element makes for something different to keep it varied. Graphics are colourful and detailed with well designed tracks and ramps to keep each table individual. The cartoon style in the scorepanel adds novelty too.

The sound tracks work well enough (although some are rather clichéd such as the rock tune), and they accompany each table appropriately. Whether it is up to the same standards as Digital Illusions' last venture, Pinball Illusions, is really going to be down to individual preference. It's up to the same quality technically and it does look as good, so whether you buy it or not depends on whether you're bored of Illusions. This is a great game and if Liquid Dezin keep this up then it certainly looks like this new team have a bright future ahead of them. Let's hope their future plans include the Amiga.





## review

# World Golf

Reviewed by Andy Maddock



**Do you rake the sand back after a bunker shot? I didn't think so. Has anyone ever nicked a rake? Write to us at...**

**W**hen this arrived in the post I had never been as excited as Christmas 1983 when I got a pet Donkey called Orbit. And that's true. And what was my excitement due to? Well, it was the fact World Golf arrived in a CD case. It had to be a game for the CD32, a game which would spring life into our now dusty and tattered 32-bit wild machine. Without haste I spent half an hour searching for a power pack to give the CD32 a new life. It was all set up. I was ready. I opened up the case to discover a cleverly made CD case which to my disappointment held... floppy disks!

After I was persuaded to come down from the office roof I sat back and thought hard about the whole design concept. Some stationery meister somewhere in the world must have thought of this, and my one and only question is, why? To design a case to protect invaluable information stored on floppies in the shape of a CD case with exactly the same specifications surely must be one hell of a coincidence - or was it? It was partly my own fault as it did state 'Amiga 3 1/2" Disks' on the front.

So, golf then. It's not particularly a great sport in my opinion. But when I'm a middle-aged businessman with a Sunday morning round of golf to look forward to my opinion may change. As it stands, it's basically a chance to smash golf balls at people, blaming the results on the wind and



**I once got a hole in one in a game of golf. It took me three shots... so er, move along!**

‘For a keen golfer all the options are there to make it as realistic as possible’

forgetting to shout "fore." Apex Software are kicking off their Amiga game career with a golf game. It may not be the best choice although to be honest, we have waited for ages for a proper effort to follow Microprose Golf.

World Golf is viewed from a top-down, sidey kind of view. It's difficult to explain. Your little golfing sprite is about 10-15 pixels high and it looks as if the main aim is to make it more of a simulation for avid golfing fans than a graphical feast for any type of gamesplayer to pick up and play.

All the options such as clubs, direction and power are on screen and can all be fiddled with to enable you to make a half decent shot. The animation may not be quite what it should be but it's possible to live with it - you'll always be more conscious of where the ball's going rather than where it came from.

## Final word

World Golf may not have the graphical advantages of delights such as Sensible Golf, PGA Tour or Microprose, but for a keen golfer all the options are there to make it as realistic as possible. There's also a nice little character design screen

that certainly doesn't look like the one from Sensible Golf. Honest.

I'm pretty sure this will appeal to the golfing fans among you - although I'm not so sure about the neutrals. But, what the hell! It's only £15!

GRAPHICS

79%

SOUND

81%

GAMEPLAY

84%

OVERALL

84%

PUBLISHER

Apex Software

DEVELOPER

In-house

PRICE

£14.99

DISKS

2

HD INSTALL

No

SUPPORTS

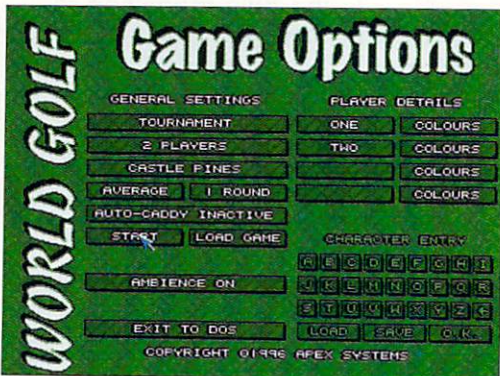
All Amigas

## What do you want from me?

If World Golf takes your fancy then why not order it via mail order. If you want to order by credit card call 0114 296 7825, or it's also available from:

8 Gosling Gate Road  
Goldthorpe  
Rotherham  
South Yorkshire  
S63 9LU

If you have any queries call the enquiry line on 01709 890552.



**Golf is a great game. It uses these little white balls made from elastic bands... Amazing!**



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## LIMITED OFFER!





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This month Frank Nord presents three handy hints and tips for Workbench users



# Bits and bobs

**V**iruses are scary things made scarier by the media now that they seem to have latched onto the silicon version of AIDS as news-worthy copy. But as an Amiga owner you can rest easy about most of the viruses you read about in the paper – they'll only affect PC owners. There are a lot of myths about viruses, probably spread by their creators, that lead to people being unnecessarily worried about their software collection. You don't have to worry about catching a virus from a disk formatted under anything other than AmigaDOS, so don't worry about putting PC disks into your drive. You don't have to worry about a virus contaminating your Amiga's clock or Kickstart ROM, it won't happen, you don't even need to worry about a virus invading your machine via modem, although if you download software and the archive has a virus, you will have a problem.

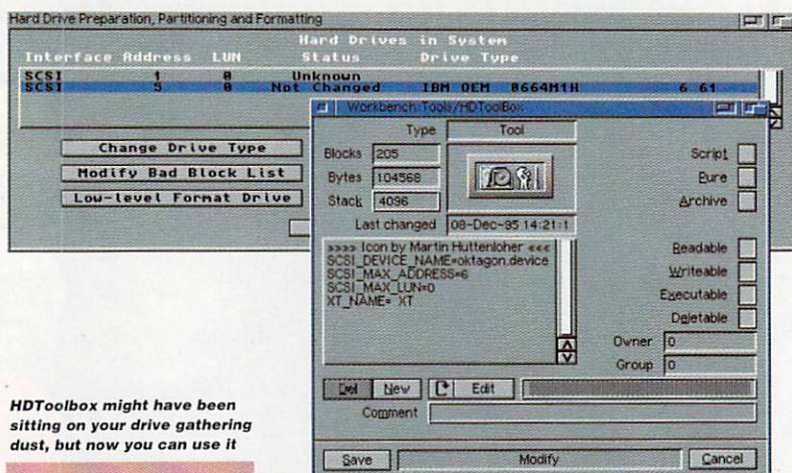
There are certain measures you can take to ensure that your exposure to viruses is minimal. The first is to make sure you know the source of each and every floppy disk you use on your machine, and, if you are solely a games player, make sure you turn off your machine for about a minute between different games. You should also always keep disks write-protected whenever possible. There's not much point write-protecting your hard drive, of course, but then you'll probably be onto the next stage of protection anyway.

The next stage is to make sure you have some sort of virus checker running. Although new viruses for the Amiga seem to have tailed off somewhat (is this real proof that a machine is in decline? No-one wants to even write viruses for it?), there are still plenty of PD programs dedicated to eradicating the ones that do exist. AC's firm favourite is still Virus Checker, even though the newest versions of it seem a little bloated in size, but it doesn't really matter which one you choose, they all do the job admirably.

## DRAGON WHO?

Not Dragon who, drag 'n drop. This feature of the Amiga's OS is much underused by Amiga owners, even though it has been touted as the next best thing by Microsoft and Apple in the latest versions of their operating systems. The Amiga has had drag 'n drop capabilities for a long time now and quite a lot of programmers have included things called AppWindows, AppMenus and Applcons in their programs. But what are they?

Well, Appwindows are windows in a program that you can drag icons to load them or perform operations on them. Examples of this would include ToolsDaemon 2.1 and SwazInfo. Try dragging icons into the windows of either of these two programs or many others and see what happens. AppMenus put a new menu item on your tools menu that allows you to access the program that created it easily, especially if you have a lot of screens open, and Applcons are also there to make access to programs that use another screen easier. Try dragging a picture file onto DPaint's Applcon and see what happens. These aren't the only programs to have these features, so check all the stuff on your hard drive now for App-compatibility!



HDTtoolbox might have been sitting on your drive gathering dust, but now you can use it

## HDTtoolbox

Have you got a third-party SCSI/IDE controller? Do you have Commodore's HDTtoolbox program sitting on your machine doing nothing, because your hard drive software came with a configuration tool? Well, if your controller supports the RDB standard, as most do these days, then you can use HDTtoolbox to prep and partition your hard drive and have the added security of the knowledge that you can follow the instructions laid down by Commodore, and taken up by Amiga Technologies, for the formatting of hard disk drives.

All you need do to get the program working is examine HDTtoolbox's tooltypes. You will see a tooltype called 'SCSI\_DEVICE\_NAME'. You can change this to match the SCSI device used by

your controller. For example, the SCSI device for an Oktagon is called 'oktagon.device', while that for a GVP hard drive controller is known as 'gvp SCSI.device'. Activate the tooltype by removing the brackets around it and add your device name, making sure you use the same case. Now, when you use HDTtoolbox, it will look for the drive (or drives) on that card.

Further, if you have a CD-ROM drive that causes you problems when you boot (the Amiga looks for something to boot from the CD and it takes ages), then you can do this. Make your CD-ROM drive's SCSI ID 6, if at all possible – some A3000 owners won't be able to take advantage of this tip – and load HDTtoolbox to check you've done it right.

Okay, now exit HDTtoolbox and open its information window. Check the tooltype that says 'SCSI\_MAX\_ADDRESS' and remove any brackets, if necessary. Now change the unit number it says as the max address to 5. This will stop HDTtoolbox from seeing your CD-ROM drive.

It won't matter to the CD-ROM or your SCSI controller, they'll still be able to see it, but if you go into HDTtoolbox now you'll see that the drive with the highest unit number now, has a 'changed' mark on it. Save the changes to the drive (all that's happened is that the flag that marks the last unit in the SCSI chain has been updated) and now when you reboot you should have no trouble with that pesky CD-ROM drive.



Paul Overaa looks at the official Amiga include files and outlines the benefits they offer



# Native process

To a large extent, coming to terms with 680x0 coding on the Amiga simply means coming to terms with the purpose and use of the routines present in the Amiga's system libraries. Exec, DOS, intuition, gadtools and so on all provide the programmer with massive collections of functions that simplify a great many coding tasks.

To ease the burden on programmers, Commodore, now Amiga Technologies, make available a variety of system files containing thousands of EQUate definitions, macros, system structure templates and so forth. The existence of these files helps in two ways: Firstly, it eliminates the need for programmers to create their own definitions (a job which is clearly both time consuming and error prone), and secondly, it promotes standardisation – all (or most) Amiga programmers soon get into the habit of using the ready made definitions provided in the includes.

## RECOGNISABLE

There are, in fact, two versions of the system files. C programmers use a set of 'header files' containing, as expected, C-style system definitions and these files can be easily recognised, not only by their contents but by the fact they all have '.h' filename extensions. Assembler programmers have a similarly arranged set of system definitions written in ways usable to the 680x0 coder. These 'include' files are again always instantly recognisable since they have '.i' filename extensions.

The Amiga system files then provide the C and assembly language programmer with broadly parallel universes. A C programmer might, for instance, use definitions taken from the devices/serial.h header file. Someone coding a similar application using 680x0 assembler would use the devices/serial.i include file.

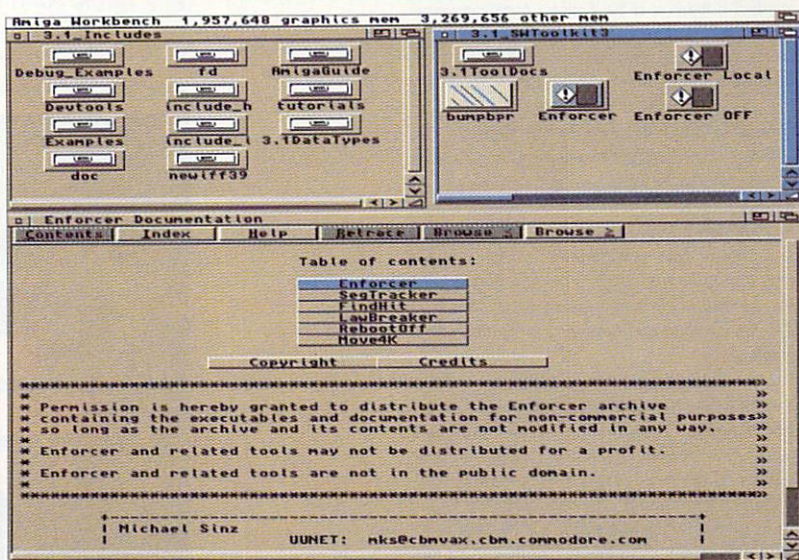
All commercial assembler packages, such as Devpac, come with a set of the assembly language versions of the include files. Public domain assemblers, such as Charlie Gibb's A68k, do not and, in this latter case, the files have to be purchased separately. There are, in fact, some significant advantages to buying the separate official files anyway because you not only get the includes themselves but the function autodocs – text files which explain

A host of programmer utilities are provided with the official includes

## COMPATIBILITY ISSUES

The latest system files available are for version 39.1 of the Amiga's operating system and these, like all previous releases, are 'backwards compatible'. This means, for example, that a Workbench 1.3-based programmer can use the up-to-date system files providing they stick to using only those library routines which were, in fact, available with the 1.3 operating system release.

Another point worth mentioning is that programmers who already have an earlier set of include files only really need to update their files if they now have a more up-to-date, or upgraded, Amiga. Many programmers, for example, originally purchased the (now dated) Workbench 1.3 header/include file set but have quite sensibly continued to use them simply because they are still using 1.3-based machines!



how each and every Amiga library function is used.

On top of this you also get notes about the latest O/S changes, examples and tutorials on all-important new facilities, plus a substantial toolkit of programs that have been found useful to Amiga developers. Enforcer, for example, is a utility that, whilst running as a background task, can catch and report illegal memory access errors in your programs. If you include debugging information in

your code there's a utility called FindHit that will try to locate the source line that caused an Enforcer error. There is a SegTracker utility that keeps track of the SegLists created as programs are scattered loaded, tools called Mungwall and MungList that can watch for illegal FreeMem() calls and list the owners of memory blocks in use. Dozens of other programs are thrown in as well. You also get the Amiga FD (function description) files and utilities that can generate LVO (library vector offsets) values and so on.

A particularly important point to bear in mind as far as the documentation provided with these files is concerned is that it is totally up to date. There are no printed equivalents where this is so and in fact the only authoritative printed details of Amiga library function use, those in the Addison Wesley Includes & Autodocs ROM Kernel Reference Manual (RKM), are now very out of date. Even the latest (3rd) edition only covers Release 2 of the Amiga's operating system.

## SERIOUS ABOUT THE AMIGA?

Then you are going to need the official includes (or to give them their proper name the Native Developer Update Disks). No matter what assembler you are using, you are, at the very least, going to need the extra documentation provided. Without this documentation you simply won't know what new library facilities are on offer, nor how those

new functions or facilities present should be used.

The Native Developer Update disks are then, or at least should be, an essential part of every Amiga coder's programming arsenal!

The Amiga Native Developer Update Files are available from Amiga Technologies (01279 680617) for £25



This month Paul Overaa offers a beginner's eye view of how ARexx performs its magic



# Get the message

**A** while ago someone wrote to me asking how ARexx allows programs to communicate with each other. You know, how ARexx makes sure that the right messages end up being sent to the right programs and so on. Since this is a topic which might be of interest to quite a few ARexx users, I thought I'd devote this month's instalment to explaining the general principles behind the ARexx messaging system.

The first point worth making may come as a bit of a shock – you see ARexx doesn't actually do that much of the communications work itself. Instead it makes use of the general message passing facilities that Exec provides, and it is here that the story really starts.

Exec is the Amiga's multi-tasking executive. In other words it is the part of the Amiga's operating system which controls sharing the Amiga's processor time between all the programs that are running in. Exec also performs a host of other operating system 'housekeeping' jobs and many of its facilities are based on generalised routines present in the Exec library.

One of Exec's support arrangements is a message system based on the use of a system structure known as a message port and any program which needs to communicate with another has therefore, as a first step, to set up one of these message ports. To transmit a message a program will allocate a block of memory, fill it with the data which forms the message, and then send it to the message port belonging to the destination program.

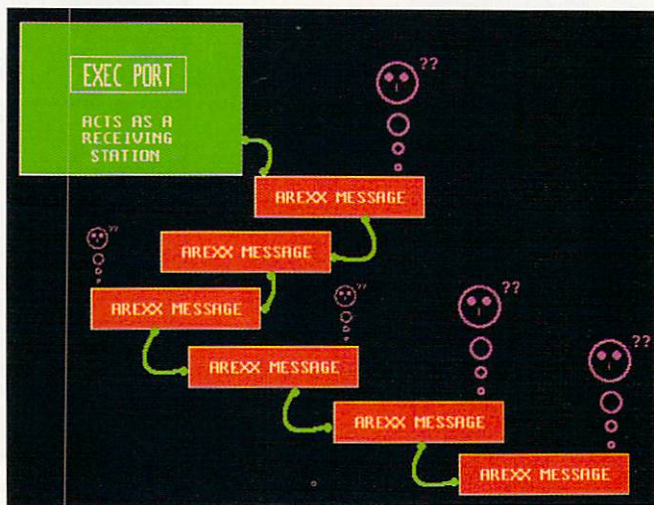
Once a message has been collected, i.e. unlinked from the receiving program's message port and used, it gets 'replied' to. This is a job which involves the program which received the message linking that same message into the message port of the program that originally sent the message. The only difference on this return journey is that the message will be given a 'finished with' marker – this tells the sender that the message has been dealt with and, therefore, that the block of memory being used for the message is free for re-use.

## BUT NOTHING MOVES

Everyone talks in terms of these messages being sent and received because that, in a logical sense, is what's happening. Information is being passed from one task to another. In actual fact, however, nothing really gets 'sent', copied, or moved at all – the data that forms the message stays exactly where it is in memory. What happens is that the block of memory representing the 'message' has various address fields present which get adjusted so that the message gets 'logically attached' to the message port it is destined for.

The good thing about this arrangement is that there is never any need to copy the message information. Programs that receive a message read the contents of the very same block of memory that the program sending the message allocated, and this makes the arrangement extremely fast.

Another important point about Exec-style messages is that the Exec arrangements only specify the layout of the initial part of the message (list pointer areas and so on). Exec ignores the rest of the message contents so programs are free to add on to the basic Exec message structure any data they want.



All ARexx messages get logically linked into lists attached to Exec-style message ports

## NOW FOR THE AREXX CONNECTION

ARexx ports are just ordinary Exec message ports. Nothing more, nothing less. They are referred to as 'ARexx ports' simply because they are being used to collect ARexx-oriented messages. Similarly, ARexx messages, as you have now probably guessed, are just ordinary Exec-style messages, with the only distinctive feature being that they have ARexx-specific information tagged on.

ARexx's real job, as far as its communications facilities are concerned then, is primarily to act as a sort of control centre. Programs send their messages to ARexx using Exec functions, and ARexx sends them on to the required destination, again using Exec functions. How

does ARexx know where the messages should be going? Well, as far as the scripts that you write are concerned, you tell it by having your script set the current host using the ADDRESS command.

ARexx checks for and, all being well, locates these ports by looking at a 'public ports' list which Exec maintains. Because of this any port that is used for ARexx communications has to be made visible to the system by having its name added to this list (this is something which is taken care of automatically by any program which contains an ARexx interface). Luckily, all this complexity is transparent to the ARexx user because almost all the communications

magic gets handled automatically. As far as ARexx ports are concerned, there are only two things ARexx users need to remember. Firstly, a message port must be recognisable to ARexx at the time you try to communicate with it. In other words, the program you wish to 'talk to' must be up and running before you try talk to it via ARexx.

Secondly, you need to be aware of the fact that the functions used to search the Exec public ports list are case sensitive. This, by the way, is the reason why when you get the case of a port name wrong in an ARexx script, the port never gets found and ARexx issues an error message!



Dave Cusick extols the virtues of Internet Relay Chat – the Net's best conversation kit



# Net benefits

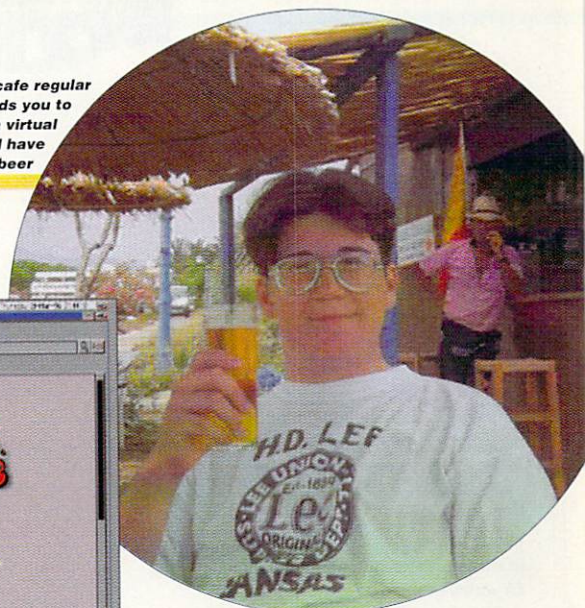
**W**hen the mass media talk about the Internet what they mean is, of course, the World Wide Web. With its stylish front-end it certainly looks the part, and indeed the impression that many advertisers give is that the WWW is the be-all and end-all of the Net.

Admittedly, if appearances counted for everything, this might be the case. But there are plenty of other considerations – interactivity being a prime one. Surfing the Web is often a lonely pastime. Yes, you could participate in a heated discussion on a Web Chat site, but it's a slow affair. If you really want to have a conversation over the Net, by far the best option is to try IRC, or Internet Relay Chat.

On an IRC channel it is possible to exchange opinions and advice in a matter of seconds, not only with the people on the channel as a group, but also by engaging in private conversations with one other person at a time. You can also transfer files directly from one user to another, and many channels also support extra commands which are granted to certain users individually.

There are plenty of Amiga-specific chat channels, although my personal favourite is easily #Amigacafe. Even an IRC newbie is welcomed

#Amigacafe regular Squiz bids you to pull up a virtual chair and have a beer



#Amigacafe has a Web presence too

there, and the atmosphere is always friendly and often very entertaining. Things are nicely organised, with elected Ops keeping an eye on the proceedings, and Rangers who step in when there aren't many Ops around. However, the supervision is refreshingly low-key and friendly, and you need not fear being booted off the channel without good reason. After a couple of visits, no matter what time of the day or night you turn up, the chances are you'll get to know the regulars well. Some characters seem to be more or less permanently connected – these are the student folk (most notably from Canterbury) whose Amigas are actually connected to the Net from their rooms. Talk about convenience...

Indeed most IRC channels inevitably tend to be dominantly populated by university students with free Net access, although this is probably typical of the Net as a whole. It's not necessarily a bad thing anyway. Not only are students a generally friendly bunch, but their standard of English tends to be extremely high, even if it's not their first language!

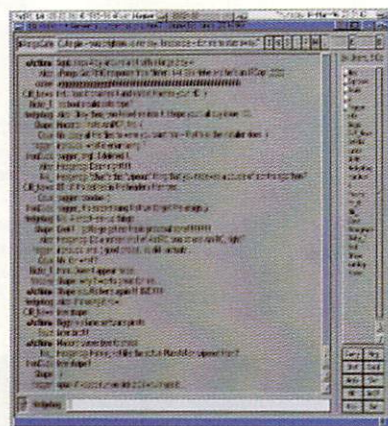
With the emergence in recent months of Vaporware's excellent AmIRC client, there really is no reason not to get involved in IRC. This marvellous application, which will of course be making a welcome appearance in Amiga Technologies' Surfer Pack, makes use of Stefan Stuntz's hugely popular MUI. This boasts a beautiful user interface that is really simple to operate. AmIRC is also heavily laden with incredibly useful options, all of which are explained in the accompanying documentation.

All the standard IRC commands can be accessed at the click of a button, and after a little playing around with the settings it is possible to customise AmIRC to your precise requirements. Silly sound effects can even be added, and the ARexx support means that scripts can be executed easily. These could perform handy operations like launching a mailer program, as with Oliver Campion's YamIRC script. On the other hand, they could just be for amusement – such as the highly comical Chef script, which turns everything you say into the mock Swedish spoken by the Sesame Street chef. Ask nicely and somebody on an Amiga channel will happily send you the scripts using the DCC file transfer method.

Don't bother grappling with the likes of Grapevine, good though it is – toddle along to Aminet and download the unregistered version of AmIRC now and you could be chatting away within minutes. Don't forget to register it later though, and if you are not one of the lucky few who has a free connection, remember to keep an eye on the phone bill because chatting can be addictive. It's generally a good idea to do your Web surfing in the background at the same time, assuming you have sufficient memory to do so. I'd also get into the habit of running a phonebill meter (such as Onlineometer) on your IRC screen so you don't get carried away.

If you fancy finding out a little more about IRC before you leap in, there are a couple of useful Web pages you might like to visit:

IRCInformation:  
<http://www2.undernet.org:8080/~cs93jit/IRC.html>  
 #Amigacafe home page:  
[http://www.acropolis.net/clubs/amiga/amiga\\_cafe/](http://www.acropolis.net/clubs/amiga/amiga_cafe/)



AmIRC, the IRC client that everyone's falling in love with

## RAISING IBrowse

At the time of writing, IBrowse pre-release demo 5 (version 0.81) has just arrived, with new demos seemingly appearing at monthly intervals. Whilst it is still not the most stable of applications, the program looks drop-dead gorgeous and is a joy to use. However, if you're not in the habit of reading documentation, make sure you at least take a look at the details of known bugs. IBrowse has been known to take down hard drives if it crashes whilst writing to the cache file, so I'd strongly advise using a RAM: cache if possible.



Need a way to make money? Stationery packs are an easy money spinner, as Frank Nord explains



# Completely stationery

**S**tationery packs are an everyday necessity for companies and individuals who write a lot of letters, and can be made easily and cheaply on the equipment you have at home. Let's start with personalised stationery and move onto the more serious business of creating corporate stationery.

The first thing to bear in mind if you are going to sell your services to individuals is the fact that they are notoriously fickle and indecisive. Don't offer up your entire font list for appraisal, you'll never get a decision. Just offer a menu of a few styles, say eight or ten, in a variety of themes – bold, fancy, futuristic, and so on. Most of your customers are going to be letter writers so you won't have too much call for really funky display faces – they just won't appeal to the sort of person who likes to write letters to people instead of e-mail. So go with a conservative mix with just a couple of the more outlandish fonts, for variety's sake.

Set up a print sample booklet with a fake name and address used as the letterheading, just so people can see exactly how their letterhead will look, and bear in mind the fact that plain copier bond isn't really good enough to charge money for letterheads. It definitely pays to look for nice paper to offer your customers. PaperDirect is a great source of paper that looks very professional (including velum effect and patterned papers) and they offer papers at up to 135gsm, for that really weighty feel (ordinary copier bond is usually 80gsm). They also have heat transfer foil that you can use with a laser printer to really jazz up

**Four very simple designs knocked up in two minutes flat – I'm sure you can do better**

Judith Austin  
23 Moberley Street  
Macclesfield  
Cheshire  
SK23 89NO

Judith Austin  
23 Moberley Street  
Macclesfield  
Cheshire  
SK23 89NO

letterheads, at an additional cost of course.

Final presentation will also help you sell your product and a nice bit of ribbon to tie the paper together is a good touch, as would be a box to keep the paper in. Now, before you all rush to your local printers to get A4 boxes, stop for a minute and let me explain the really good bit to you. If you are going to make up a box of 48 sheets of writing paper, you will only use 12 sheets of A4 and only actually print on, say, four of those sheets. Why? Because nobody writes letters on A4, and Basildon Bond certainly isn't available at that size. No, people write on A5 paper, a quarter the size of A4, saving you heaps of cash for paper and your printer's toner cartridge or ink refills.

So the answer to your box size question is to get a box that is capable of holding 48 sheets of A5 paper, envelopes and the ribbon to tie them with.

One individual I know of actually went to his local printer and got a set of 50 of these boxes made up with a nice marbled finished and lined interior for about £30. Not too much to ask for, and it will have a great impression when given to the punter.

Although this enterprise can be seen as a license to print money, you'll need to know what to charge people. I have seen personalised stationery packs advertised for as much as £30, but I think these were probably printed on gold leaf or something to warrant this high a price tag. I think a price set somewhere between £10 and £20 is reasonable and makes a good gift idea for relatives. If you were to charge £10 for the pack of 48 sheets, you could probably expect to make somewhere between £6 and £8 in profit, provided you aren't required to post the pack anywhere. This would break down to about 50p for the box and say 20p for the ribbon, £1 for the envelopes and 50p for the paper, plus costs for printing the sample booklet and advertising. Your service won't appeal to absolutely everyone, fewer and fewer people seem to hand write letters these days, but you should be able to make a tidy sum, particularly at Christmas time.

Two last points: the first is to keep a database of your customers' names and

Judith Austin  
23 Moberley Street, Macclesfield  
Cheshire, SK23 89NO

Judith Austin  
23 Moberley Street  
Macclesfield  
Cheshire  
SK23 89NO

addresses (the dtp file for their letterhead shouldn't be too big to store either), just for future use. You may be able to sell them other services like the company stationery packs we will discuss next month, or invitations, etc.

The second point is to include a reorder sheet in with every stationery pack so that the receiver of your customer's generosity will be able to get more stationery without having to go through a middleman.

## PRINTER POWER

**A note now on your printer's capabilities. Be warned that people aren't going to be willing to fork out a handful of cash for printing work that has banding, or that has soaked the paper and made it wrinkly. Spend some time making sure your printer is giving the absolute best performance it can and then judge whether or not you think people will be prepared to pay for its output. You may as well give up now if you only have a nine pin dot matrix, but a decent inkjet or any sort of laser printer should be sufficient for the job.**



Phil South begins a series about how to plan and execute an Amos program project



# Back To Basics

**T**his is a subject I come back to time after time, and is it any wonder, the amount of mail and e-mail I get asking me how to write Amos programs. I'm not running a correspondence course, in case you were wondering, but at times it feels a bit like it. I thought it was time to visit Amos afresh, and show how you would plot out and plan a program from start to finish, and how you would ensure that not only does the program perform well but also is easy and attractive to use.

Before you even start Amos up, and I've said this time and again, you should have a plan. Of course, like most things, you might get your ideas from a piece of code or an experiment you've conducted, or a routine which you've evolved which does something cool. But ideas can't be developed into a fully functioning program by hacking away at the program editor and hoping that you remember to hang everything together. You have to figure out what the program will do first, what order things will happen, and how the program will look on screen.

Interface development is a key issue in the making of any software, and the user should know just by looking at your screen what he has to do and which button he should press to get the effect he's looking for. I see so many Amos programs which have horrible graphics and difficult to fathom controls and, worse still, methods of working the program which are counter intuitive. Graphical interfaces are well over 10 years old now, and most of us are familiar with at least one very good example, the aptly named Intuition interface which is part of AmigaDOS. You could do a lot worse than follow that example or, better yet, use it in your program with the many useful Amos extensions which are available.

So, you have to first figure out what it is that your program does and how it does it, but high on your list should be 'how does the user see the buttons and menus, and is it obvious what must be done at every stage?' If you ask yourself this question at every stage of development then you will end up with a program which looks and feels right.

In planning how the program works, you would do best to work in a kind of pseudo-code, a list of instructions which describe in words of English

## part 1

A clear interface is a must these days



To operate this program, click one of the buttons below to choose an option.

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## Ideas Software

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rather than Amos, what the program must do and in what order. For example, if you want to write an arcade game the pseudo-code might look like this:

```
start
initialise variables
set up the screen
load the backgrounds
set initial positions for sprites
start main program loop
    check for joystick moves and button
hits
    calculate alien positions
    move sprites
    check collision detection
        if there is a collision
then activate hit subroutine
        if not continue
go back to start of main program loop

collision subroutine
    explode sprite by replacing with
explosion graphic
    make boom sound
return to main loop
```

You can begin to see the program emerging

already, can't you, and if you know anything about Amos the commands to make this program work suggest themselves immediately.

The stages you should go through are these: ideas, pseudo-code, interface, coding, testing, revision, compiling. Don't bother compiling a program until you're sure it's totally bullet proof. Equally, don't do any coding till you know what order the routines should be in or before you've got your interface drawn out on paper and created the graphics in a paint program. These have a bearing on what you will code and how you will do it.

## WRITE STUFF

If you have any other Amos programs or queries about Amos, then please write to the usual address, which is: Phil South, Amos Column, Amiga Computing, Media House, Adlington Park, Macclesfield SK10 4NP. Please send routines on an Amiga disk with notes on how the program works on paper, not as text files on the disk. Make the routines short enough to appear in print, i.e. no more than about 30-40 lines of code, and if possible make them use no external graphics, or if they can't be used without them then be sure to provide them on the disk in native IFF format, and the same goes for sound files. Follow these guidelines and it's just possible you might get your programs published.

## SUMMARY

So when you are embarking on a new project, start with a pen and paper rather than hacking about aimlessly with the Amos program. By all means create small routines to cope with each part of the program, but don't attempt to fit them together until you have a clear idea what it's all going to look like and how it's going to work. Keep a notebook of good ideas - this serves a dual purpose of keeping all your ideas in one place where you can refer to

them as well as giving you somewhere to jot down anything which occurs to you while you're on the bus or at work far away from your Amiga.

Next month we'll get this process rolling by starting to create a multimedia program which will combine graphics and text and sound to show off a range of products, forming a demo which you could upload to the Internet as an electronic brochure. See you then.



Steve White explains how you can add bone and muscle and the dynamics of movement



# Muscle bound

Last month I demonstrated how to draw the human form easily and quickly using only a few simple rules. This month my aim is to explain briefly the techniques that can be employed to add realism to a lifeform, whether it be human or animal. This involves adding anatomical references such as bone, muscle and flesh in order to create a sense of realism and dynamics to a creature.

Drawing a human head or body is fairly simple provided you stick to the rules, but fleshing out a form with bone and muscle requires some knowledge of anatomy. Fortunately, that means you only have to understand bones and muscle, and not the internal organs, and only those that effect the skin on the body.

The first thing to do when learning anatomy is to locate the points on the body where bone and muscle is prominent. However, it is also a good idea to get as many references to a particular point in a variety of different positions as bone and muscle changes as the body is moved.

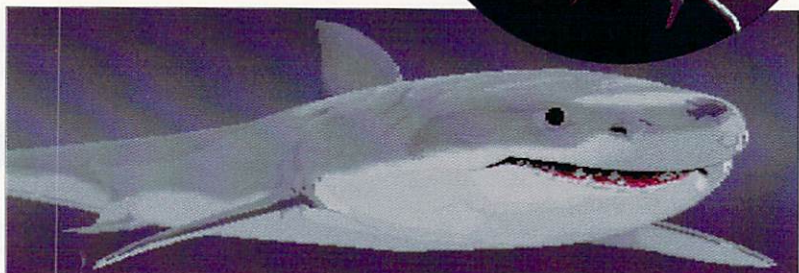
As an example, take a look at your forearm. Apart from the elbow and wrist there are no real visible muscles or bones. But clench your fist and

**When light is thrown across the human face the prominent features such as the cheekbone, nose and mouth light up and cast shadows**

muscles push up the skin along the side of the forearm. In this example we would use the muscles to demonstrate a punch or thrust. Already you have recognised a particular anatomical feature associated with a particular dynamic or position. Learning about anatomy isn't exactly exciting but it is vitally important if you want to design lifeform images that are realistic and accurate.



**Drawing animals requires extensive study and, if you are animating them, an understanding of the dynamics of movement**



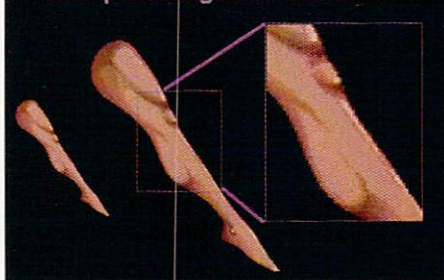
## ANIMATED FORMS

If you are planning to create an animation that will include lifeforms (I hate that term), you will not only have to learn about the basics of anatomy but also understand the movement and flexibility of a body. By understanding the way the muscles and bones change as the body moves you can make your animation much more dynamic and add weight, age and sex to your subject matter.

The best way to understand movement of a form is to study it and make notes. Obviously, you're keen to get into the nitty gritty of design, but take time out to understand the subject matter first and you'll reap the rewards. Take a look at the muscle that runs from below your ear to your collar bone. When you turn your head to the side this muscle is pulled and stretched and becomes more prominent. It then returns the head back to its normal forward looking position. These are the types of muscle you should pay close attention to as they are visible and indicate a particular pose.

If you take a look at the leg example in the screenshot you will see that the toes are pointed. Because of this the calf muscle becomes more prominent and because of the rigidity of the knee, so too does the thigh muscle and the muscles around the knee itself. This leg was just part of a logo but it had to look real, and

**Example of thigh and calf muscle**



**Here you can see the leg with the thigh and calf muscles tensed. The knee is also more visible as a result of tensing**

adding muscle and bone to convey an overall dynamic was imperative. If the muscle and bone had been incorrectly added the leg would have lost its identity and the complete image would have failed.

Obviously, another very important feature of bone and muscle which should not be ignored is shadow. Understanding the shape of bone and muscle is essential if shadow is to be rendered accurately. However, cast shadow invariably falls on other bones and muscles, so the

process has a cause and effect nature. Take the thigh for example. When the thigh muscle is tensed it causes a shadow to be cast on the inside of the leg. However, due to the oval shape of the leg the cast shadow is also pulled around and curved as a result. This can be clearly seen on the thigh muscle and the inside of the thigh.

Understanding non-human anatomy is even more difficult. Once again it all boils down to study and taking notes. There are some very good books written by artists who have already done the hard work, so you can save yourself a lot of bother and time-consuming work by purchasing such a book.

I have found wildlife videos to be one of the best reference aids when drawing non-human lifeforms. They invariably capture animals in their most characteristic poses and if you can recreate this in your Amiga paint package you're guaranteed success.

It is always the case that the artist who studies produces the better work. Try not to be put off by the complexities of anatomy. Only study what you feel is necessary and remember - your best reference is yourself. Don't feel stupid standing in front of a mirror and making notes - if it helps to improve your design skills it can only be a good thing.



Paul Overaa takes a look at a lesser known application of the Midi sequencer...



# Seeing the light

**W**henever Amiga Midi sequencers are mentioned most people automatically think of music, keyboard synthesisers, sound modules and so on. There are, however, a number of other control applications that sequencers can be used for and one of these is lighting control. There are a variety of units available that can be used for everything from department store window lighting displays to certain types of stage show, club and disco/dance lighting applications. One benefit when you are already using sequencers for playing music, of course, is that it allows the lighting control to be synchronised to Midi sequencer music – you simply add an additional lighting control track to your existing music sequences!

One light control box that is quite popular is called the Lite Show. It's aimed primarily at semi-pro use and provides eight 300 watt outputs which can be programmably switched and faded using Midi channel 16. The Lite Show responds to three types of Midi message – Note on messages, program change commands and active sensing. It's the note on messages that control the lights, with Midi notes 60-67 selecting the lighting channel and the velocity byte of each message determining the brightness. Program change messages are used to switch between one of 64 pre-set



Profile Music's MP820 light controller

and 15 dynamically changing 'super scene' settings.

A slightly more sophisticated unit is the Profile MP820. This provides eight channels with a power rating of over 1000 watts per channel and

both the Midi channel, and the range of notes to which the unit responds, are user selectable. The MP820 again uses a note/velocity-based light control scheme but in addition to this, Midi continuous controller #96 has been implemented to allow fade and delay characteristics to be changed under Midi control. For professional users, Profile Music also offer a rack mounted expansion unit which allows banks of MP820s to be linked together, providing up to 2048 lighting channels (and potentially over 2 megawatts of lighting control!).

Profile also offer a light unit from Ryger Electronics called the ML2 which, again, is Midi controlled and provides additional 'intelligence' functions. The same company also market Midi/DMX controllers and there are even some Midi controlled laser products under development.

## Midi Line Drivers

For some lighting applications it may be necessary to use long Midi cable runs and for quite a few years now it has been possible to overcome the 15 metre Midi signal cable length limit. In fact a few years ago, the Philip Rees company produced a MLD Midi Line Driver system which not only overcame the 15m limit but let Midi signals be sent down cables of up to a kilometre in length. The original MLD system was unidirectional but in some installations bidirectional Midi communication is required, and the latest units to help in this area also come from Philip Rees.

They're called MTR Midi Line Transmitter/Receiver boxes and consist of a pair of units with the cable link between each unit being made either with screened twisted pair cables or, as is more common in professional applications, by incorporating the devices into paths that end up being sent down multicore cable.

With the MTR system only one unit is mains-powered. This 'master transceiver' has power, Midi In, Midi Out and Line connectors, plus an indicator LED to let you know that the unit is powered-up. The second, remote, slave transceiver derives its power from the line itself, so has only the Midi In, Midi Out and Line connectors. With these units,

cable runs of up to 150m can be used and, because the MTR can work down multicore, you'll often find these units installed in theatres to control lighting and trigger stage effects. There are, of course, plenty of other situations where the ability to get Midi data down long cable runs is equally important. In recording studios, particularly with remotely located control rooms, an MTR system can be part of the permanent installation.

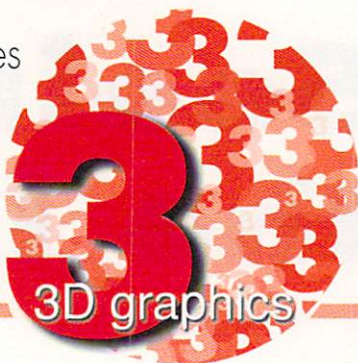
As well as the well known Midi gadget manufacturers like J L Cooper, Midi Solutions, Philip Rees and so on, quite a few specialised companies have arrived on the scene who are able to build customised Midi control units for professional users. Such companies can add things like wireless-based and fibre optic-based Midi links to a Midi lighting system although, needless to say, the cost of these types of esoteric options tends to put them out of reach of the average Midi user. The fact remains, though, that where basic lighting control is concerned there are quite a few units that are affordable and, linked to an Amiga running say Dr T's KCS or Microillusion's Music X, can provide an extremely cost effective pathway into this area!

## Bottom Line

<b>Product:</b>	Philip Rees MTR line drivers
<b>Price:</b>	Price: £99 per pair
<b>Phone:</b>	01608 811215
<b>Product:</b>	BCK Lite Show lighting controller
<b>Price:</b>	Price: £199.99
<b>Phone:</b>	01992 524442
<b>Product:</b>	Profile MP820 lighting controller
<b>Price:</b>	Price: £199.99
<b>Phone:</b>	0115 9245454



Paul Austin continues his tutorial on the do's and don'ts of basic space craft construction



# Paper to polygons

## part 2

## BUILD ON THE BASICS

**A**fter a fair amount of head scratching, sketching and second thoughts regarding design and construction, I decided to opt for the simplest possible starting point, and see how much could be squeezed out of it.

As you've probably gathered, the starting point was a basic faceted cube, the idea being to demonstrate how quick and efficient building a respectable bit of cannon fodder can be. Needless to say, the ship is meant to be a bad guy, and as a result it plagiarises most of the classic traits you'd associate with a bad guy. Down swept wing fronts, aggressive raked wing design and, most important of all, a general look and feel of something unpleasant from the real-world.

The beastie in question is a bat, but of course you've already spotted that hadn't you? Anyway, here's a step by step guide of transforming a box into a bad guy.

Although there seems very little correlation between the first and the last model, there's been little added or taken away. The only major changes consist of moving and merging a few points to create softer corners here and there, the odd move, scale and taper on selected point and polygons, plus one or two additional slices to provide a few additional control points. Figure one and two are simply progressions, with a few point merges as mentioned above. Figure three is obviously where most of the action takes place.

However, after establishing a basic form I was happy with, and before progressing from two to three, I decided to save myself a lot of extra work by deleting half the model. Now I know that may sound like a very silly thing to do, but once you've decided on a direction for any symmetrical model, there's very little point in plodding on and being forced to measure or eyeball everything when the mirror command will do all the time-consuming stuff for you.

By deleting half the model along the Z axis you're instantly giving yourself a lot more freedom to

*I must stress that the point of the exercise isn't to simply replicate the model I'm putting together. Ideally, you should be applying your own ideas using the basic principles outlined in this and the previous issue.*

*You should start out with a faceted cube to keep things simple, but go for your own look and feel. All the basic principles should remain the same, and although the shape may differ, the basics of adding detail and texturing the finished model will work just as well on any model your imagination can come up with.*

experiment with the finer design points. Needless to say, once you're happy with the shape a simple mirror followed by a merge command on the duplicated points along the z axis completes the basic construction stage. At this point you can simply select the detail areas and add the finishing touches, a prime example being the well area in the centre of the ship, which next month will hold some of the all-important fine detail.

As you've probably guessed, one of the prerequisites in the design spec is a low polygon count. However, if you're planning to see the ship close-up it's important there's some detail to enhance the general look and break up the monotony of an essentially symmetrical form. Just about every decent space ship ever modelled has little clusters of detail and assorted 'sticky out bits' here and there, and this one is no exception.

During next month's column I'll be running through the creation of what Ron Thornton calls 'nurnies', which for the rest of us translates into innocuous detail that does nothing - but looks like it should. In the case of my creation, this will translate into piping and mechanics in the recess on the top of the ship, plus assorted engine parts, the all-important guns, and possibly even the odd fuel pod here and there.

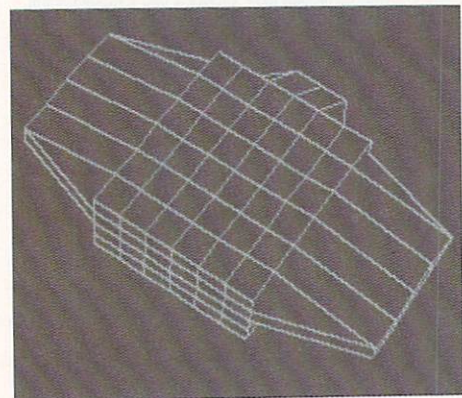
However, before moving on to the finer points it's essential to take some time out to define the basic

surfaces before the overall structure becomes too complex to make selection and naming of surfaces simple. Too be honest this particular rule of thumb doesn't apply quite as much to this particular model because the structure is relatively simple, but it's well worth getting used to applying surface names sooner rather than later on all your modelling jobs.

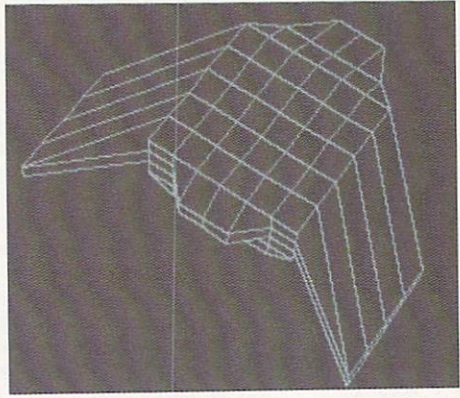
## UP AND COMING

*In the next issue I'll be adding the finishing structural touches but, more importantly, turning my attention to the tricky problem of texturing. Particular points of interest will be the creation and layering of various textures in the colour, specular and diffuse fields to create a photo-realistic array of surfaces.*

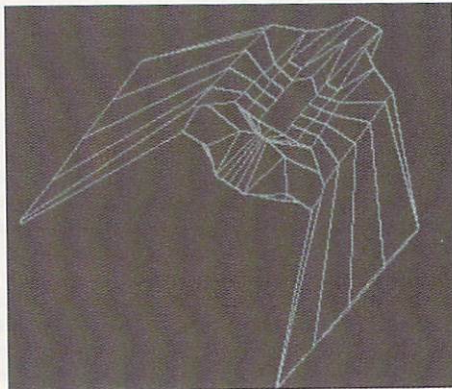
*If there's enough space I'll also put the model in context, with engine flares and a suitable virtual universe for it to blast away in. However, it's highly likely that will spill over into the subsequent issue.*



Start with the basic cube and see what your imagination can do - but don't forget to keep your original sketches close by. It's easy to model yourself into a corner



Use a few stretch, taper and move commands combined with the odd slice and you're on your way into deep space. From here make the most of the mirror command



From here on it's just a question of adding fine detail and the all-important texture maps. Don't forget to tune in next month for the fine points



Got a digitiser that's collecting dust? Gary Whiteley has a few suggestions



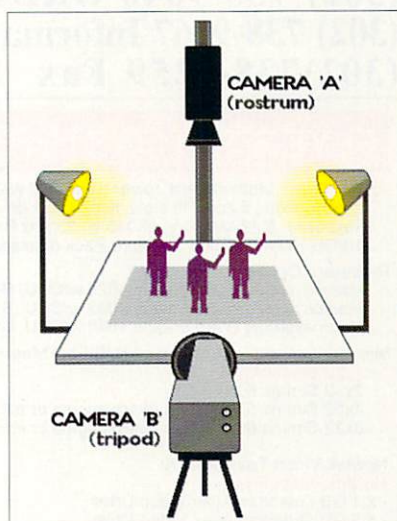
# Moving pictures

If you're one of those people who bought themselves a video digitiser but gave up because you got bored with grabbing chunks of your favourite video or TV programme, go and dig it out. Find the connecting leads and get it plugged into your Amiga because I'm going to run a few animation ideas past you which might just grab your imagination.

You'll also need access to a video camera (a camcorder will do fine) and a tripod or copy stand/rostrum with a suitable camera mount, a couple of Anglepoise or similar lights, and a quiet dark corner where you can remain undisturbed for days on end, with a table or other solid surface to support your work. So much for the actual recording hardware and shooting location.

## DECISIONS

Now comes the difficult decision of what to animate. Well, you're hardly stuck for choice! Almost anything that you can fit in front of a camera can be animated, but try to avoid children and animals as they tend to be unable to keep still for any length of time, no matter how much you plead with them. Instead, think about all the possibilities offered by drawing or painting a series of different images on paper (or even animation cel if you can [a] afford it and [b] you have a suitable rostrum with peg-bar to keep the cels 'registered' - i.e. fixed in the same place from frame to frame). But why limit yourself to two-dimensional work on paper or cel? Look around you and see what



other possibilities present themselves. A good place to start is in the kitchen where food items such as grains, nuts, beans and pasta shapes can be used to construct pictures. Then consider toys, models, things made from wire and plasticine, cut-outs from magazines, and other objects which you can build yourself. Some of these things will make for 2D animation, but you can also do 3D work with many of them. Just let your imagination run wild for a change

Use either a rostrum-mounted camera, or one on a tripod. The choice is yours



Under the hot camera lights your grapes could soon turn into currants

— but avoid using objects which will quickly lose their shape, such as fresh plants and fruits, or melt or otherwise be affected by the hot lights shining on them.

## CONTACT POINT

Gary Whiteley can be e-mailed at [drgaz@cix.compulink.co.uk](mailto:drgaz@cix.compulink.co.uk)

## DECEPTIVELY SIMPLE

Animation is simply a sequence of still images which are played back fast enough to fool the eye and brain into thinking that the movement they contain is smooth and flowing, just like television and cinema. In the UK the playback rate is generally 25 frames per second for video and 24 for film, which equates to 1500 frames per minute for video and 1440 frames for film. Either way, they're both frighteningly large numbers of frames to contemplate, especially if you're thinking of making a ten minute animation!

But hang on! Most animators shoot every frame twice, making only 12.5 frames to the second, so your workload is immediately halved. Sometimes you can get away with even less frames per second — even several seconds of the same frame if the story calls for it — so don't be scared off at the prospect of hard work just yet.

To make animation with your digitiser you'll need a reasonable amount of computer memory and, preferably, a hard disk. If you

have neither of these, you should still be able to test the water, but you'll be much more limited in both the resolution of the animation which you can produce and the speed and number of frames which your Amiga can play back.

Start with a little planning — decide what you want to achieve and work towards it. Set up your little animation studio, switch everything on, and white-balance the camera (read the instructions if you don't know how or why). Set up the first frame (image) of your animation and make a test grab with your digitiser. Check the lighting, colour, and how the image is framed within the screen.

When you're happy that all is how you wish — taking into account that the picture quality won't be so great unless you have a 24-bit digitiser, plenty of memory and a hard disk — it's time to start animating, so open a new file (or whatever your particular digitiser requires) and take a new grab of the first image. You only need to take one frame (not two) as your

Amiga can be made to play the sequence back at half-speed (if you have animation-capable paint software such as DPaint or Brilliance or a program like View or other speed-controllable animation player software).

The next step is to make a small adjustment to your animation set, for instance by moving your model/s, replacing the original drawing with the next in the sequence, or by adding or subtracting something from the scene. Whatever you do, keep the movements quite small or the resulting motion will appear jerky when you play the animation back. Grab your second frame, make more adjustments, take the third grab, and so on.

Eventually (over hours or even days), you will have built up a series of images which together comprise your animation. Play them back as a sequence using your digitiser software or save them as an .anim file, which you could then load into DPaint, for instance, and add extra details, text etc. to. Watch out Wallace and Grommit!



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- PCI Bus For Future Expansion supporting up to 100MB/Second
- Compatible with the Newtek Video Toaster & DKB Megachip
- Includes Manufactures TWO year full warranty

From A Company that listens to what the public wants! This is the FASTEST accelerator available for the Amiga 2000!!

## AMIGA RAM BOARDS

Paravision MBX1200Z w/20Mhz&1MB	149
Paravision MBX1200Z w/20Mhz&2MB	175
Paravision MBX1200Z w/20Mhz&4MB	199
Paravision MBX1200Z w/20Mhz&8MB	299
Paravision 8-Up! w/OMB (2000)	99
Paravision 8-Up! w/2MB (2000)	149
Paravision 8-Up! w/4MB (2000)	229
Paravision 8-Up! w/6MB (2000)	309
Paravision 8-Up! w/8MB (2000)	385
DKB 2632 w/4MB (Requires2630)	299
DKB 1202 FPU & 1MB Ram (1200)	159
DKB 3128 w/4MB (3000/4000)	349
Exp. Sys. Dataflyer Int. w/2MB Exp to 8MB	199
Supra External w/2MB (500)	199
CBM 2052 w/2MB (2000)	99
CBM 2058 w/2MB Exp to 8MB (2000)	175
CBM 501c Clone w/512K (500)	49
Exp. Systems 601c w/1MB (600)	69
DKB Megachip 2000/500 w/2MB Agnus	199

## A1200 CSA Accelerators

68030RC33 Mhz w/MMU, 68882RC33 math co-processor, AND SCSI I & II controller card built in w/external port expandable to 32mb of ram	399
--	-----

68030 running at 50 Mhz w/MMU, AND SCSI I & II controller card built in with external port	599
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## Amiga 2000 Accelerators

GVP 68040 @ 33mhz w/MMU, FPU SCSI II controller with Extra Serial, Parallel Ports & 4 MB Ram 60ns Expandable to 64MB ram using 16MB simms (799 each)	1295
--	------

CSA 68040 @ 33mhz w/MMU, FPU SCSI II controller card w/OMB. Uses 72 pin 60ns industry standard simms and is expandable to 64 mb using 16mb simm modules.	995
--	-----

GVP 68030 @ 40mhz w/FPU & SCSI Controller & 4MB ram at 60ns expandable to 16MB ram	675
--	-----

## DKB

Megachip	199
----------	-----

Allows your A500 & A2000 series computers to have two megabytes of chip ram. A must have for people who use video, graphics and audio applications. Included is the Megachip daughterboard with 2MB Agnus chips with an extra one megabyte of ram. (Requires A500 to have A501 ram expander +49.95)

A1202 board (A1200 Only)	99.95
--------------------------	-------

A multi-function board for the A1200 Computer that provides the maximum fast ram expansion plus a battery backed up clock-calendar. Includes two simm sockets for combinations of 1, 2, 4, 5, or 8MB of fast ram using industry standard 32 bit simms with 72 pins. Optional pldc math co processor can speed up math functions as much as 1000% or more.

A3128 Ram board (A3000/4000 Only)	249
-----------------------------------	-----

Allows 32 bit ram expansion to 146 megabytes of ram using 72pin industry standard simms. Four simm slots accept either 4, 8, 16, or 32 megabyte simms.

A2632 Ram board (A2630)	275 w/4mb
-------------------------	-----------

Allows 32 Bit ram expansion on board of 112mb of ram using industry standard 72pin simms. Has four sockets allowing use of 4, 8, 16, or 32 mb simms. Allows full burst mode support.

Kwikstart II (A1000)	54.9
----------------------	------

A1000 owners can now add kickstart roms to their machines with this device! Supports two different revision roms & allows access to more system ram

Multistart II 6a (A500, 600, 2000)	29.95
------------------------------------	-------

You can use more than one kickstart rom chip with this device! Switchable by resetting the machine for a few seconds.

Cobra 28 mhz & 40 WITH MMU	159/245
----------------------------	---------

Accelerator for the A1200 computer system that allows you to speed your machine up to 600% faster. Includes capability to add 128MB of fast ram using industry standard 72 pin simms & battery backed clock-calendar. Optional FPU can be added. Optional SCSI I & II Controller can be added +89.00

Moubra 40MHZ w/MMU & FPU	275.00
--------------------------	--------

Accelerator for A1200 computer with 68030@40mhz Expandable to 128MB of fast ram using industry standard 72 pin simms. Increase in speed up to 800% & has battery backed clock-calendar. Includes FPU @ 40mhz. SCSI I&II controller can be added \$89.00



# Amiga 4000 Tower & Amiga 1200 Systems Now Available! Call for lowest pricing! \*NO SALES TAX IN DELAWARE\*

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- 084 RGB Analog Monitor
- 084S RGB Analog Monitor
- 950 Multisync Monitor
- 960 Multisync Monitor
- olutions 1401 14" Multiscan RGB Monitor

### VIDEO HARDWARE

- ision 64 Zorro 3 w/ 2MB Ram
- ision 64 Zorro 3 w/ 4MB Ram
- Creations Kitchen Sync Dual TBC
- k Video Toaster 4.0+
- k Video Toaster Upgrade 4.0+
- k Lightwave 3D 4.0 (IBM or AMIGA)
- k Lightwave 3D 3.5 (Amiga)
- k Lightwave 3D 3.5 Upgrade
- k Video Flyer 4.07+
- 's Viab Motion Card
- 's Viab Motion System (Toccata)
- 's Viab Motion Complete (T&RZ3)
- 's Retina Z3 w/4MB
- 's Retina Z3 w/4MB
- 's Toccata Sound Card
- 's Viab Y/C Internal / External
- us Personal editor v1.1
- us Personal SFC Plus v3.1
- gen Plus Genlock
- us - Y/C/Plus SVHS Hi8

### SOFTWARE

- ess It v1.5
- File Safe Consumer
- File Safe Professional
- ari - Caligari 24
- Graphics - Powermacros for Lightwave
- line - Humanoid for Imagine
- line - Humanoid for Lightwave
- ision Technologies - Composite Studio Pro
- ision Technologies - Fly Effects
- ision Reality - Impact!
- ronic Arts - Deluxe Paint V
- s - GraphicRECALL v1.5
- er - Plug Ins & Go
- ise - Imagine 3.0
- ision Technology-Alpha Paint
- ision Technology-Broadcast Title II S.HiRes
- ic Lantern v2.0
- ograpix - Motion Master Volume 1
- ograpix - Motion Master Volume 2
- ograpix - Sparks v2.173
- a Design - Image FX v2.1a+
- ogenics
- Brilliance 2.0
- star - World Construction Set
- osity - Wavemaker v2.0
- isoft - Real 3D v2.4
- ia Multimedia MM300
- rts Object for Lightwave
- desis - 3DROM Vol 1
- desis - 3DROM Vol 2
- ergy - Hollywood FX
- ergy - Hollywood FX Lite
- pes
- ision Inspirations - Visual FX for Lightwave
- ual Reality Studio v2.0
- al 3D Professional v2.0
- stream 3.0

### CBM AMIGA EMULATORS

- 88 XT/AT Bridgecard (2000)
- PC286 (GVPA500+ & A530Turbo)
- Plant Deluxe Version
- 6 Upgrade IBM Module
- Plant Macroms
- ax II+ w/A-Max IV Color

### CBM AMIGA SYSTEMS & PRODUCTS

- OT Computer w/1.2GB HD / 6MB Ram
- 0 Computer without HD
- 0 Computer System w/ECS
- 0 Computer System w/o ECS
- 0 Computer System w/o HD
- 20 Video Adapter (works w/ all systems)
- IB Ram For 2091 (256K4 dips)
- 0000 internal low density disk drives
- 0 internal low density disk drives
- 0/4000 internal high density disk drive
- 0/4000 external high density disk drive
- 3/4000 5/6/1200 Keyboards
- 3/4000 5/6/1200 Power Supply
- placement Mouse
- 20 Flicker Fixer (2000/4000)
- 32 seven port serial card
- 31 HD Controller card w/OBM
- 40 68040 @ 25mhz for the 4000/3000
- 30 w/2MB or 4MB (A2000 Accelerator)
- 20 w/2MB or 4MB (A2000 Accelerator)
- 1c 512K ramboard w/lock
- 1c 1mb ramboard w/lock

### CPU & FPU UPGRADES & REPLACEMENTS

68040-40 w/MMU&FPU	299.00
68040-33 w/MMU&FPU	199.00
68040-25 w/MMU&FPU	99.00
68040-EC25	75.00
68030-RC-50 w/MMU	119.00
68030-RC-40 w/MMU	79.00
68030-EC40 (NO MMU)	99.00
68030-RC-33 w/MMU	99.00
68030-RC-25 w/MMU	75.00
68030-EC-25 (NO MMU)	50.00
68882-RC-PGA-50 FPU	59.00
68882-RC-PGA-40 FPU	49.00
68882-RC-PGA-33 FPU	35.00
68882-RC-PGA-25 FPU	25.00
68882-FN-PLCC 40 FPU	129.00
68882-FN-PLCC 33 FPU	35.00
68881-FN-PLCC 25 FPU	25.00
68881-FN-PLCC 16 FPU	25.00
80387-25SX (386BB) FPU	69.95
Crystal Oscillators	10.00
68040 Heat Sink	175.00
Intel 486 DX2 - 66	145.00
Intel 486 DX2 - 50	135.00
Intel 486 DX 33	99.00

### MEMORY CHIPS

1 x 8	120 - 60ns SIMMS	29
1 x 9	120 - 60ns SIMMS	35
4 x 8	120 - 60ns SIMMS	109
4 x 9	120 - 60ns SIMMS	119
1 x 4	120 - 60ns Static ZIP	19
1 x 4	120 - 60ns Page ZIP	19
1 x 4	120 - 60ns Page DIP	29
1 x 1	120 - 60ns DIP	4
256 x 4	120 - 60ns DIP	29
256 x 4	120 - 60ns ZIP	29
256 x 32	100 - 60ns (1MB Simm)	35
256 x 36	100 - 60ns (1MB Simm)	35
512 x 32	100 - 60ns (2MB Simm)	69
512 x 36	100 - 60ns (2MB Simm)	75
1 x 32	100 - 60ns Simm (4MB)	125
1 x 36	100 - 60ns Simm (4MB)	149
2 x 32	100 - 60ns Simm (8MB)	249
2 x 36	100 - 60ns Simm (8MB)	299
4 x 32	100 - 60ns Simm (16MB)	499
4 x 36	100 - 60ns Simm (16MB)	599
8 x 32	100 - 60ns Simm (32MB)	899
8 x 36	100 - 60ns Simm (32MB)	1999
16x32	100 - 60ns Simm (64MB)	19
PCMCIA Ram Card 2M		273
PCMCIA Ram Card 4M		129
GVP SIMM32 60NS 4MB		699
GVP SIMM32 60NS 16MB		699
GVP SIMM32 60NS 1MB		59

### AMIGA CUSTOM CHIPS & UPGRADES

3.1 Upgrade kit (roms, soft, mans)	125.00
3.1 Upgrade kit (pick two)	99.00
3.1 Kickstart roms (specify unit)	199.00
3.0 Kickstart roms (specify unit)	79.95
2.1 OS Upgrade Kit (complete)	49.95
2.1 OS Upgrade Kit (soft, manuals)	27.95
2.05 Kickstart Rom	27.95
2.04 Kickstart Rom	12.95
1.3 Kickstart Rom	79.95
1MB Agnus (8372A)	49.95
2MB Agnus (8372B)	34.95
Super Denise (8373)	16.95
Paula (8364) Or Denise (8362)	12.95
CIA (8520)	29.00
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Janus 2.1 upgrade kit	24.95
2520/2630 upgrade kit (7.0)	24.95
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### Amiga Analyzer \$69.95

Diagnostic software & hardware for problems

### DPS

PERCEPTION PVR-2500	1675
CAPTURE CARD AD-2500	895
PAR (IBM) DR-2100	1599
PAR (Amiga) DR-2150	1545
w/Conner 540MB	+199
w/Conner 1275A 1.2G	+399
w/Micropolis 2217A 1.7G	+899
Personal TBC IV	799
Personal VScope	735
Personal Componet Adapter	229

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- Includes SCSI I & II Fastest hard drive controller available for the Amiga 2000 series
- Up to FIVE megabytes per second with a Seagate Barracuda 2.1 gigabyte hard drive
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**68040 @ 40Mhz w/CPU & MMU & FPU (2040) 1199**

Low profile, power & heat simms for maximum performance -

Upgrade rebates for A2000 owners with other CPU cards!  
 Trade in that old 16bit ram while your at it too!

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 08 MB 60NS \$199  
 16 MB 60NS \$299  
 32 MB 60NS \$599

### SYQUEST (Amiga / MAC / IBM)

5.25" HH 44MB DRIVE (SQ555) SCSI	125
5.25" HH 88MB (SQ5110C) (R&W44) SCSI	259
3.5" LP 125MB IDE or SCSI w/Cartridge	249
3.5" LP 200MB (SQ5200) (R&W 44.88) SCSI	349
3.5" LP 270MB SCSI (SQ3270S) 13MS SCSI	329
5.25" 44MB Cartridges	41
5.25" 88MB Cartridges	51
3.5" 270MB Cartridges	79
5.25 200MB Cartridges	49
External Versions w/Cabling Add	

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340 ELS SCSI I & II or IDE	11MS	2 Yrs	149
540 ELS SCSI I & II or IDE	11MS	2 Yrs	179
850 LPS SCSI I & II or IDE	14MS	3 Yrs	199
1280 LPS SCSI I & II or IDE	12MS	3 Yrs	349
2.1G Atlas 7200RPM 1MB	8MS	5 Yrs	849
4.3G Atlas 7200RPM 2MB	8MS	5 Yrs	1299
4.3G Grand Prix 512k buffer	8MS	5 Yrs	999

### Seagate

ST3290A 280 MB IDE LP	16MS	3 Yrs	159
ST3491A 420 MB IDE LP	16MS	3 Yrs	169
** 51080A 1080 MB IDE LP	10MS	3 Yrs	249
** 51270A 1270 MB IDE LP	10MS	3 Yrs	299
** 52140A 2140 MB IDE LP	10MS	3 Yrs	399
ST31231N 1050MB SCSI LP	9MS	5 Yrs	379
*ST32550N 2.1G Barracuda	8MS	5 Yrs	979
*ST15150N 4G Barracuda	8MS	5 Yrs	1299
*ST410800N 9G Elite	11MS	5 Yrs	2299

\* VIDEO FLYER CERTIFIED HARD DRIVES  
 \*\* A4000 AUTOBOOTABLE HARD DRIVES

### Conner

CFA 1275A IDE (w/PAR)	12MS	3 Yrs	399
CFA 850A IDE	12MS	3 Yrs	269
CFP 540A IDE	12MS	3 Yrs	199
CFA 540A IDE (w/PAR)		3 Yrs	199

### A1200/600/SX1 2.5" IDE HARD DRIVES

ST9096A 80MB Maxtor			
ST9190AG 170MB Seagate			
ST9240AG 210MB Seagate			
ST9300AG 260MB Seagate			
ST9420A 455MB Seagate			
ST9655AG 520MB Seagate			
ST9816AG 810MB Seagate			

Install kits  
 available  
 \$25.00

### TAPE BACKUP DRIVES

Sony SDT5200	4/8GB	500k/sec	875.00
Sony SDT5000	4/8GB	500k/sec	899.00
Exabyte 8505XL	7/14GB	900k/sec	1995.00
Quantum 2000	10/20GB	3000k/sec	3384.00
Quantum 4000	20/40GB	3000k/sec	5495.00
Sony AXM 120M DDS2 Tape			25.00
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Quantum 2000 20GB Tape			50.00
Quantum 4000 40GB Tape			120.00

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Now you can record your own CDROM discs & make backups of the ones you already own.

Requires SCSI interface card  
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Mastering ISO Recording Software			349
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Yamaha CDR100	4x read 4x write		149
Hewlett Packard 4020i	4x read 2x write		99
CDR Recordable 74 Minute Blank			9.95
CDR Recordable 63 Minute Blank			8.95

### AMIGA NETWORKING

- Interworks ENLAN-DFS (Five node licence)
- CBM A2065 Ethernet board
- CEI 4066 ETHERNET PLUS
- Three network interfaces for 2000,3000,4000
- 10 BASE T, Thick AUI, Cheapernet (10BASE2)
- Diagnostic LEDs & 1 Year Warranty
- 10MB/SECOND & is SANA II compliant

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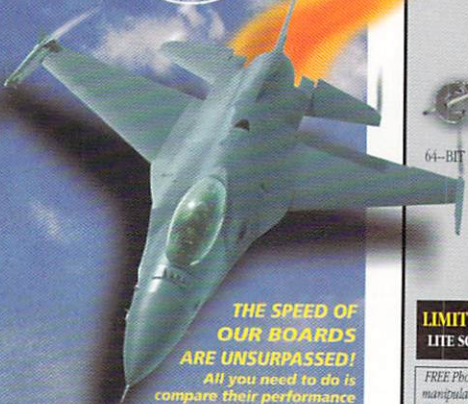
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**THE SPEED OF OUR BOARDS ARE UNSURPASSED!**  
All you need to do is compare their performance

Std A500/600/1300/2000	0.55/4.72
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Standard A1000/0300	4.43
A1200 with 1220/4 32Pin	5.05
A1200 with 1230-IV, 030 & 4Mb	9.91
Standard A1000, 040	19.10
A1200 with 1260, 060 & 4Mb	37.40
A1500/2000 with 2060, 060 & 4Mb	37.40
A1000 with Cyberstorm, 060 & 4Mb	39.85

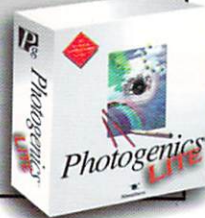
## CYBERVISION 64

64-BIT ENGINE A3000/4000 24-BIT COLOR ACCELERATED GRAPHICS CARD.  
For all Zorro-3 Amigas, this 64-bit high speed graphics engine/blitter offers up to 1600 x 1200 pixels in 8-Bit color or 1024 x 768 pixels in True 24-Bit Color, with 2Mb of display memory (4Mb user upgradeable).

Cybervision 64... 2Mb - \$469  
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### LIMITED OFFER FREE PHOTOGENICS LITE SOFTWARE WITH CYBERVISION 64s

FREE PhotoGenics LITE... Powerful software for image manipulation - the ULTIMATE 24-bit graphics package for A3000 or A4000! Includes 27 effects for processing photos/images such as Emboss, Solarize, Texturize, Add Noise etc., as well as Paint Tools inc. Chalk Pastels, Crayon, Felt Tips & more - Brilliant! (Packaging is shown for illustration purposes only and is not included)



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NEW



## CYBERSTORM II

NEW SECOND GENERATION OF THE FIRST EVER 68060 AMIGA ACCELERATOR  
When you fit Cyberstorm II to your A3000, A3000T, A4000 or A4000T you can, for example, render a graphic with Imagine 2.0 software in just 2.45 minutes... Compare that with a massive 10.34 mins on a standard A4000 '040/25! With no jumpers Cyberstorm II is fully plug and play and A4000 users can choose between SCSI-2 and SCSI Fast and Wide options (A3000 users already have SCSI built into their Amiga hardware).

- Up to 128Mb of standard SIMMs can be installed and you can even transfer the 72Pin SIMMs from your Amiga A4000 straight onto your new Cyberstorm.
- Options include a SCSI-2 module, or a SCSI Fast and Wide module (Available in April/May '96)

### Cyberstorm II 68060/50...

50MHz 68060, 0Mb (Expandable to 128Mb)

SCSI-2 Module

SIMM RAM Expansions

(Please call for a range of SIMM sizes and pricing etc.)

\$999  
\$249  
\$Call

## BLIZZARD

**1220/4**  
28MHz  
68EC020  
A1200 TURBO  
4Mb, 32-Bit RAM  
Expandable to 8Mb

### Blizzard 1220/4 4Mb Turbo Memory Board

Offers by far the best price/performance ratio of any A1200 32-Bit RAM expansion on the market incorporating everything a good memory board should - such as a Real Time Clock, RAM expandability, optional FPU etc. With its Motorola Processor running the 32-Bit FAST RAM at an amazing 28MHz, the 1220/4 has broken all the barriers!

Check the facts for yourself and fit the BEST Amiga A1200 68EC020 Turbo Memory board available.

- Can be disabled for full games compatibility
- Integrated 28MHz 68EC020 Clock Speed Doubler for up to 300% overall performance increase
- Factory Installed & Tested 4Mb 32-Bit FAST RAM
- Expandable to 8Mb with Blizzard Add-4 Board
- Integrated Battery Backed Real Time Clock
- Easy Trapdoor Installation - no modifications required and does not invalidate the Amiga Warranty

(Please note, ANT 68020 board will disable the PCMCIA slot if fitted with over 4Mb)

1220/4 Turbo 28MHz 68EC020	
4Mb 32-Bit Fast RAM (Expandable to 8Mb)	\$299
Add-4 Board - extra 4Mb for 1220/4	
4Mb 32-Bit Fast RAM add-on	\$249
Motorola Maths Co-processor	
68882 PLLC type FPU, 14/28/40MHz	\$Call

THE AWARD WINNING A1200 RAM EXPANSION!

## BLIZZARD

**1230-IV**  
50MHz  
68030  
A1200 TURBO  
ACCELERATOR - 0Mb  
Expandable to 128Mb

### The Blizzard 1230-IV Turbo Accelerator Memory Board

is the highest performing 68030 accelerator available for the A1200! With its 50MHz 68030 and MMU, the new 1230-IV offers EVEN BETTER PERFORMANCE at a LOWER PRICE! With a SysInfo rating of 9.91 (using a 60 Nanosecond SIMM) you can see the 1230-IV is very fast... a performance gain of up to 500% is achieved! Options via its Fast Expansion Bus include Modules such as a SCSI-2 Controller. An industry standard SIMM socket provides for up to 128Mb of auto-configuring 32-Bit FAST RAM (or up to 256Mb with the SCSI-2 option using its extra SIMM socket).

- May be disabled with Simple Keystroke on Boot Up for Full Games Compatibility, even with Badly Programmed or Older Software!
- Battery Backed Self Recharge Real Time Clock
- High Performance Expansion with Full 32-Bit wide DMA
- PGA FPU Socket allowing Optional 50MHz, 68882 FPU
- Easy Trapdoor Installation - no modifications required and does not invalidate the Amiga Warranty

1230-IV Turbo 50MHz 68030 & MMU	
0Mb 32-Bit Fast RAM (Expandable to 128Mb)	\$269
4Mb SIMM RAM Expansion (Fast 60 Nanosecond)	\$Call
32-Bit, 72 pin (Call for Larger SIMM prices)	\$Call
Motorola Maths Co-processor	\$Call
68882 PGA type FPU, 33/50MHz	\$Call
SCSI-IV KIT SCSI-2 Module for 1230-IV and 1260	\$169
(With additional 128Mb SIMM socket)	

THE WORLD'S FASTEST A1200 '030 ACCELERATOR!

## BLIZZARD

**1260**  
50MHz  
68060  
A1200 TURBO  
ACCELERATOR & MMU  
0Mb, Expandable to 64Mb

### The Blizzard 1260 Turbo Accelerator Board

offers Amiga A1200 owners FULL 68060 POWER with a board that simply plugs into the trapdoor slot! Now your A1200 will operate at twice or even three times the speed of an '040 based upgrade and up to five times the speed of a standard A4000! If you want THE FASTEST A1200 available, fit a Blizzard 1260 Turbo to your Amiga now!

- May be disabled with Simple Keystroke on Boot Up for Full Games Compatibility... Even with Badly Programmed or Older Software!
- High Performance Expansion - Full 32-Bit wide DMA
- Battery Backed Self Recharge Real Time Clock
- Does not invalidate the Amiga Warranty

1260 Turbo 50MHz 68060 & MMU	
0Mb 32-Bit Fast RAM (Exp. to 64Mb)	\$949
SCSI-IV Kit SCSI-2 Module for 1260	\$169
and 1230-IV (With additional 128Mb SIMM socket)	
4Mb SIMM RAM Expansion (60n/s)	\$Call
32-Bit, 72 pin (Call for larger SIMM prices)	

**2060**  
50MHz  
68060 A1500  
or A2000 TURBO  
ACCELERATOR & MMU  
0Mb - Expandable to 128Mb

### The Blizzard 2060 Turbo Accelerator Memory Board

offers A1500 and A2000 owners the same specification that the Blizzard 1260 Turbo achieves but also includes built in SCSI-2! So, if you want the fastest A1500/2000 around with FULL 68060 POWER... fit a Blizzard 2060 to your Amiga now!

2060 Turbo 50MHz 68060 & MMU with Built In SCSI-2

0Mb 32-Bit Fast RAM (Expandable to 128Mb)

\$999

Easy Trapdoor Installation... No modification necessary. Reliable low heat output.

1260 & 2060 TURBO BOARDS HAVE A FASTER MEMORY DESIGN THAN ANY OTHER EXPANSION!

ALL Blizzard and Cyberstorm products use brand new MOTOROLA 68030 series processors (not second hand as in some of our competitors' boards). They always run WITHIN the electrical timing specification laid down by Motorola to prevent any possible overheating/reliability problems. When you pay for a new 50MHz CPU, that's exactly what you get - not a 40, 33 or even a 25MHz CPU 'clocked' to 50MHz! Look out for the MOTOROLA MOTIVATED logo, your guarantee of our commitment to quality and reliability. BEWARE of 'clocked' CPUs!

OUR RANGE HAS WON MORE AWARDS THAN ANY OTHER...



### What the Magazines think...

Blizzard products have consistently achieved the highest magazine accolades and awards!  
Amiga Shopper said "...the Blizzard 1260 is destined to become the ultimate object of desire for A1200 owners - 91% STAR BUY Award  
Amiga Computing "...If you want the fastest Amiga in the World, get this board."  
92% BLUE CHIP Rating  
Amiga Format "...Ride on the fastest A1200 in the World... 95% GOLD Rating

# SoftWood

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