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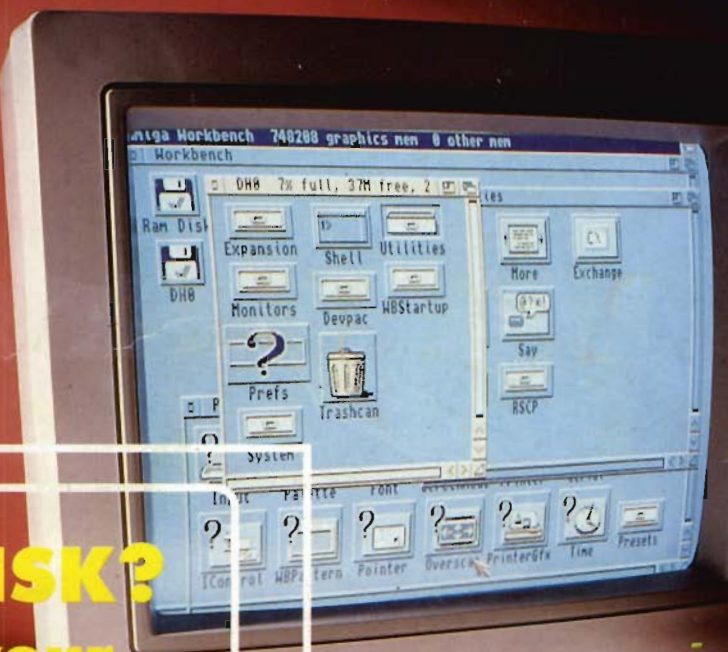


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Welcome to the Future.

Soft-Logik would like to congratulate Gold Disk on adding features to Pro Page 3.0. Of course, it still doesn't compare to PageStream 2.2, the Experts' Choice.



Congratulations, Gold Disk, on adding improved typographic precision and an Undo option to Professional Page 3.0. Of course, PageStream has had Undo since version 1.0 and its type scaling is still 12.5 times more precise. The five new AGFA Compugraphic fonts included in ProPage 3.0 bring your total to 7, still short of the 10 we give our users.

We're sure ProPage users will appreciate the new ProWrite and Excellence text import filters; PageStream users have been enjoying them for years. And the tiling feature you've added in 3.0 will allow your users to make those banners and posters PageStream users have been pasting on walls everywhere.

The most impressive feature in 3.0 has to be the links to ProDraw and Article Editor. Your "hotlinking" feature is a closed and proprietary system. Our HotLinks is a standard protocol which any company can support. Of course, this isn't really a fair comparison, because ProPage's links cannot match HotLinks' automatic data transfer, real-time multiple edition updating, and edition management utilities.

Cool Programs for a Hot Computer

Soft-Logik Publishing is proud to announce HotLinks Editions. HotLinks Editions combines BME, PageLiner and HotLinks into an affordable package. BME is a bitmap editor for touching up pictures and photographs. PageLiner is a feature-laden text processor with spell checking and formatting tags. HotLinks is the new Amiga standard for data exchange.

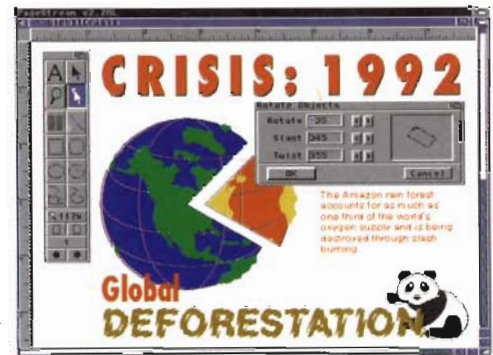
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HotLinks takes Amiga multitasking into the future. An open standard available to all companies, it allows you to exchange text, graphics and other data between applications in real-time. Imagine having all copies of your corporate logo updated automatically in your PageStream document when you make changes in BME. PageStream doesn't even have to be loaded. The next time you load a document containing a copy of the logo, HotLinks will update it automatically.

This might be the future, but it's available now. PageStream 2.2 is just £199.00. HotLinks Editions is £65.00. If you would like your other software to be HotLinks compatible, just ask its publishers. We'll help them include HotLinks in their next release.

PageStream 2.2 and HotLinks Editions are *the* publishing solution.

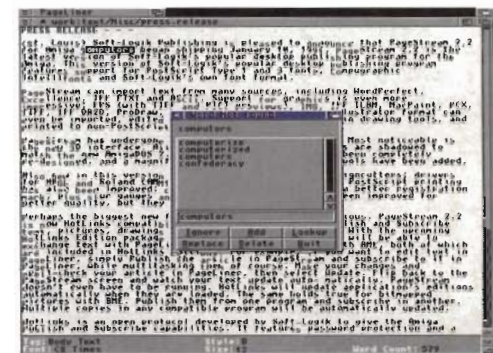
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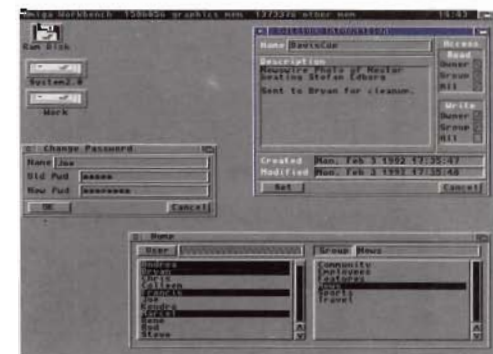
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July 1992

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For four years Amiga Computing has been the leading magazine for Amiga enthusiasts. As a key member of the Europress magazine group, Amiga Computing promises to inform, educate and entertain its readers each month with the most dedicated coverage of the Amiga available.

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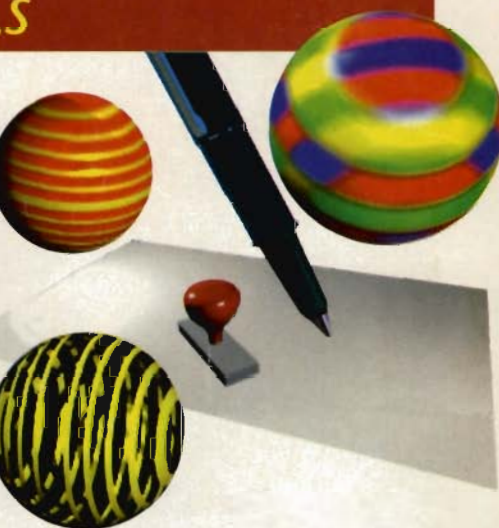
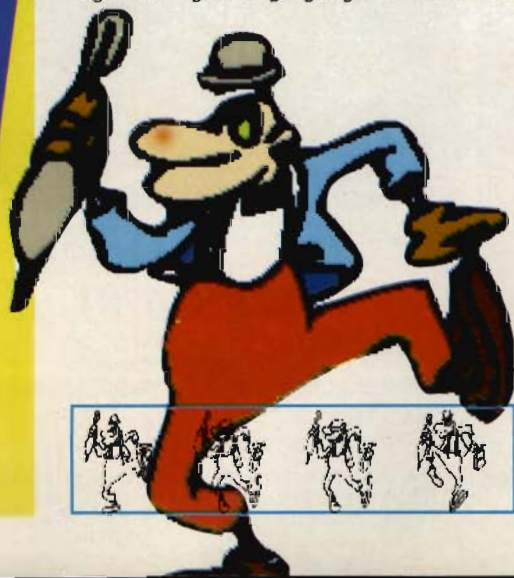
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Now you can get the best... with PEN PAL!

A superb package, with immense power, to fulfil all your word processing requirements and... it includes a Database! It's all so easy to use, you probably won't need to refer to the extensive 250 page manual too often.

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As you can see, this is not just any ordinary word processor! Full Page View with position, edit and creation of graphic objects. Mail Merge using the built in database and forms designer. Creation of templates for complex reports, into which the database can be merged.

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Pen Pal requires an Amiga 500/1500/2000 or 3000 with a minimum of 1megabyte of available memory.

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"...its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically wrap text around graphics..."

Amiga World...Jul. '90

"...without beating around the bush Pen Pal is very special..." - "There is little to fault Pen Pal and it deserves to do well."

Amiga Format...Dec. '90

"...I am extremely pleased with your product especially the Graphic Capabilities within the Word Processor. Having the Database on the same disk has made PEN PAL the best program I have..."

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"...Please let me tell you how amazed I am at how EASY IT IS TO USE PEN PAL. The manuals supplied are very informative and very clear..."

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"...A most excellent piece of software..."

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Gordon Harwood Computers
New Street
Alfreton
Derbyshire
DE5 7BP.

Dear Sirs,

Hallo! I am writing this letter using "Pen Pal". Normally I do not correspond with computer companies, but this time I had to make an exception.

I have been looking for a program that I could use to create colourful letters, useful forms, and effective business graphics. I have purchased several Amiga word processors whose ads made great claims as to their capabilities. After using these programs, however, I found that the ads were very hype! I soon began to feel that no program would do what I wanted to do.

Recently I saw your program "Pen Pal" on my dealer's shelf. According to the package I thought that I might finally be in luck. Although I purchased the program I was about to return it to the computer store as I thought it was a waste of money. As soon as I got home from the computer store I fired up the program on my computer. Without even reading the manual I was soon creating documents with colour and pictures. As you can see from this letter, I have become pretty good at your program's graphic capabilities.

One pleasant surprise I had was to discover that Pen Pal has a built in database. I have a manager. I find that I use this database almost as much as the word processor. I have entered my Christmas mailing list, video tape library, and cooking recipes in it. When I send Christmas cards this year I will use Pen Pal to print the mailing labels. I am designing my own Christmas cards in Pen Pal including some pictures I drew in a paint program. I plan to use Pen Pal's mail-merge feature to merge my mailing list names with the cards to make each one personalized.

Thank you for making this program available.

Mr. Richard Goodwin

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Financial Report to Division Managers

	1987	1988	1989	1990
OPERATING EXPENSES				
Cost of sales	391,170	29,180	382,350	26,390
Selling, general, and admin.	46,815	445,940	88,667	195,936
Research and development	46,815	14,810	88,667	88,667
Income from operations	312,384	112,934	385,386	705,290
Equity in loss of S.M. operations (S.M. 1991)	7,347	8,217	(10,817)	6,241
Interest income	282,840	117,066	374,599	211,231
Income before taxes	173,860	117,066	374,599	211,231
Provision for taxes	173,860	117,066	374,599	211,231
Net income	199,340	48,460	356,890	128,431
Net income per share	\$4.17	\$1.00	\$7.31	\$2.61

... and they are better than expected!

In the first quarter of 1988 each division took advantage of strong economic conditions in their respective territories to post sales figures well in excess of their goals.

Bar chart showing sales figures for 1987, 1988, 1989, and 1990.

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Commodore axe A500

PRODUCTION of Britain's best-selling 16-bit home computer, the A500, has ended, and last models have already been sold to the trade.

Commodore confirmed to *Amiga Computing* that A500 production has stopped at the giant's main manufacturing plant. The neater A600 will be the replacement entry-level machine.

"We are switching emphasis on to the A600 for some very good reasons – probably for the right reasons," commented Commodore's Andrew Ball.

"But the A500 will be supported in some shape or form and the A570 drive will be released for the computer soon."

Don Carter from trade distributor ZCL said: "The

EXCLUSIVE

by John Butters

A500P is now effectively a discontinued product, although there will be pockets of stock at retail level for the next few weeks.

"Our Calculus Stores will be focusing very strongly on the A600 with the new technology and an astonishing range of peripherals that I am regrettably not allowed to comment on.

"Everything Commodore produce from now on will be downwardly compatible with the A600's SMT [surface mount technology and none of it will work on the A500."

Carter concluded: "The A500P now looks very much yesterday's product."

A2200 planned for autumn launch

THE machine once rumoured to be in the pipeline and code-named the Amiga Classic will be launched later this year as the A2200, *Amiga Computing* can exclusively reveal.

On information received from sources close to Commodore, we can reveal that the machine, which will be available in two models, is based on the 68020 processor and utilises A600-style technology.

The desktop model will appear in a slimmer-than-A3000 casing with built in Commodore A2091 40Mb hard drive. A second super slimline model will use the same internal IDE hard drive as the A600-HD, but will have a separate keyboard and a monitor will be supplied as part of the package.

Super slimline A2200s are unlikely to be very expandable, though both models will feature 2Mb chip RAM.

Desktop A2200 models will also be based on the A600 motherboard, which means that there will be an internal IDE interface as well as the A2091, but this is expected not to be used by Commodore on this model.

As with the A600, surface mount technology and on-site warranties will be the order of the day. When asked to com-



The A600, on which the forthcoming A2200 is based

ment on the new Amigas, Commodore's Andrew Ball would neither confirm nor deny the story, stating only that "the Amiga will continue to improve".

He also refused to speculate on a possible launch date for the machine, though we think it unlikely to be any later than

autumn this year. It is too early to say what price the new Amiga will sell at, and though the slimline model with monitor and internal IDE hard drive could sneak in under the £1,000 mark, the desktop model with A2091 40Mb drive is unlikely to be cheap.

THE
6th
International
COMPUTER
SHOW
Incorporating the
16 Bit Computer Show

Shows shapes up

THERE'S something promised for every Amiga user at the forthcoming 6th International Computer Show, sponsored for the first time by Europress Publications.

More than 180 firms will pack into the show halls and many have promised to unveil new Amiga software and hardware for the first time.

But unlike many computer shows it won't be just a shopping event. *Amiga Computing* and its sister magazines have pulled all the stops out to ensure every visitor is entertained.

Experts

An advice centre will offer free five-minute sessions on buying a new computer, software or upgrades and a clinic manned by Amiga experts will give sound advice on your problems.

And for the less serious visitors there will be a special Gamer Challenge. They can compete against another driver in Gremlin's top racing game Lotus Turbo Challenge 2.

Fifty copies of the game are being given away to high scorers and the top driver at the end of the three day event will be sent a fantastic package of games worth over £500 – courtesy of the best games section in your favourite Amiga magazine.

All this and more will be happening at the Wembley Exhibition Centre, London from July 10 to 12.

New GVP graphics card

IN A move seemingly aimed at Progressive Peripherals' Rembrandt graphics board, GVP have announced their own high-end graphics card in the shape of the Enhanced Graphics System EGS110/24.

Designed as a high-speed graphics display and rendering card, the 24-bit system utilises its own hardware to enable line redraws at up to three million pixels per second and blockwrites at up to 576Mb per second.

To allow such high speed transfers, the board is equipped with 25ns VRAM which can be accessed across the 32-bit address bus used on GVP's combo accelerators.

Software is supplied in the form of a number of library modules similar to the Sage standard libraries, and a Workbench driver which enables many programs, among them PageStream, to run directly on the board with no further software.

Depending on the quality of monitor used, GVP claim a screen resolution of up to 1,600 x 1,280 and 80Hz scan rates, giving an ultra smooth display in 24-bit colour. Applications running in 256 colours will have access to a 3,200 x 2,560 screen size, though these will have to be specially written for the board.

There is no UK release date as yet, but suggested US prices are \$2,699 for the 4Mb VRAM option, and \$3,399 for the 8Mb version. Contact Silica Systems on 081-309 1111 for more details.



The G-Force range is now available for A1500/2000 owners

G-Force 040 branches out

GREAT Valley Products (GVP) have just announced that their hitherto A3000-only G-Force 68040 accelerator will soon be released in an A2000 combo configuration.

The card will be available in 25MHz and super-fast 33MHz models, and both will be supplied with 4Mb RAM expandable to 16Mb. In addition, a SCSI hard drive controller will be built in to the board for fast data transfer and DMA access to the on-board RAM.

In a new departure for GVP, there will also be serial and parallel ports mounted on the card and accessible through the Zorro through slot at the rear of the A1500/2000. With the addition of these ports, the G-Force 040 combo becomes the first GVP Single Board Computer (SBC).

For details of UK price and availability, contact Silica Systems on 081-309 1111.

A570 launch delayed

THE long-awaited Commodore CD-ROM drive still has no official launch date. Despite earlier hopes that it would be available by the end of May, Commodore now expect the A570 to be released no earlier than "around about June".

When asked the reason for the latest delay, a Commodore spokesperson said: "This is a very important product for us and CD-ROM entertainment systems in general, so we want to make sure it is absolutely right first time."

A570s on show at the European Computer Trade Show in April were running a variety of educational software, but had no DMA through port. Commodore still cannot confirm whether or not the unit will have such a feature when launched.

New Amigas, new chips, say Commodore US

IN response to criticism in the press and on bulletin boards that they are not as committed to the Amiga as they should be, Commodore's central office in the US have given unprecedented hints at their future plans for the range.

Bill Sydnes, Vice President (Engineering) recently went on record to shore up the confidence of developers and journalists in the Amiga's future. He said that "the majority of Commodore revenue comes from the Amiga and most of our research and development is devoted to enhancing the Amiga range."

On the subject of future new machines (see our A2200 story), Mr Sydnes said: "We have plans to release a number of new Amigas later this year." He also emphasised the intense R&D work which is going on into the CDTV/CD-ROM side of the Amiga.

His most interesting comments, however, relate to the possibility of an entirely new chip set appearing soon. Commodore, he claims, are "continuing the R&D effort to improve the Amiga chip set" and are considering the possibility of bringing new technology to the Amiga in an effort to boost research and

development in third-party manufacturers. This, as he later stated, would mean Commodore establishing new standards, presumably for graphics, sound, and so on, a move which could mean the implementation of the prototype "AA" chip set.

This advanced chip set (pronounced "double-A") – shown to developers at last year's Milan developers' conference – supports, among other things, 256,000 colour HAM from a 24-bit palette in any resolution up to Super hi-res (1,280 x 1,024) and dual playfields in any resolution.

It also supports a "4x" 32-bit system offering four times the normal data transfer rate to and from the screen, lo-res scrolling in increments of a quarter of a pixel, vastly improved sprites, and the mixing of video modes, allowing hi-res 32-pixel-wide sprites on a lo-res screen.

Sources close to Commodore hinted that the AA chip set might make its debut in the A2200 later this year, and that all new technology should be downwardly compatible with the existing Amiga chip set. Watch this space.

Midi makes it big

WESTMINSTER Exhibitions have confirmed that attendance at the recent Midi Music Show, held at the Novotel Hammersmith between 24-26 April, was up by 50 per cent on last year's total.

In all, more than 12,000 musicians and computer music buffs crowded the hall to see the 120 exhibitors, over 70 per cent of whom, according to Westminster's Tim Collins, have already re-booked for next year. He is, he claims, "over the moon".

Power Up saves you £1,000

OWNERS of A1500/2000 machines will soon be enjoying Commodore's new marketing thrust to boost sales of the A3000. In a "Power Up" deal similar to that offered to A500 upgraders two years ago, the Calculus chain of dealers will cut between £800 and £1,000 from the price of an A3000 when your old A1500/A2000 is part-exchanged.

The resulting price of an A3000/25 system will still be a painful £2,199 (excl VAT), but the move is hoped to bring the luxury Amiga closer to many medium level serious users.

All A3000s included in the Power Up scheme will feature an extra 4Mb fast RAM, Scala, DPaint4, and AmigaVision multimedia authoring system.

Contact Calculus on 0543 251275 for your local dealer.



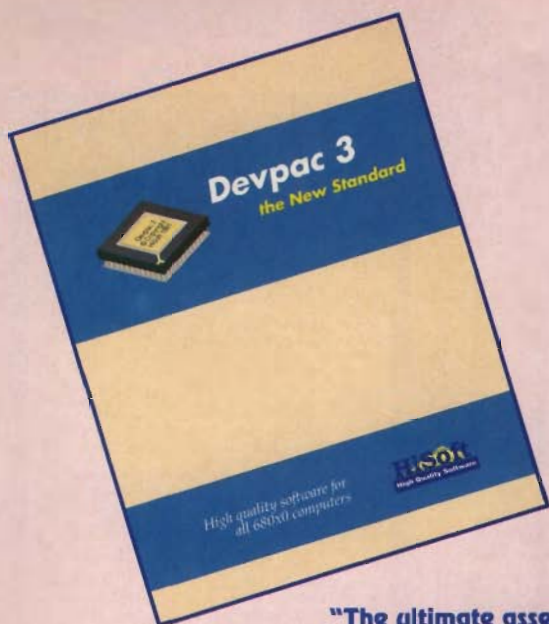
Trade in deals can at last make the A3000 affordable

New products from First Choice

FIRST Choice Computers of Leeds have released a range of new British made products for the Amiga. Included in the complete range are a keyboard-switchable ROM sharer, a stereo sampler, drive booster to power extra floppies, and Midi interface.

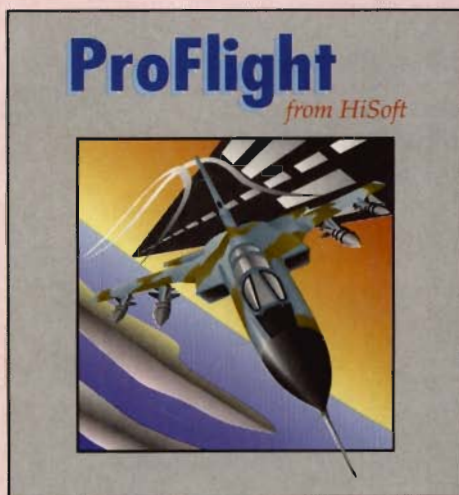
The ROM switcher is the first not to require a hardware switch, so users won't have to drill holes in their A500 casing, and there is also a Scart/VCR switch box for those who want to use their monitor as a TV in conjunction with a domestic video player.

Prices of the new Phoenix peripherals range from £16.99 to £49.99 and First Choice can be contacted on 0532 311932.

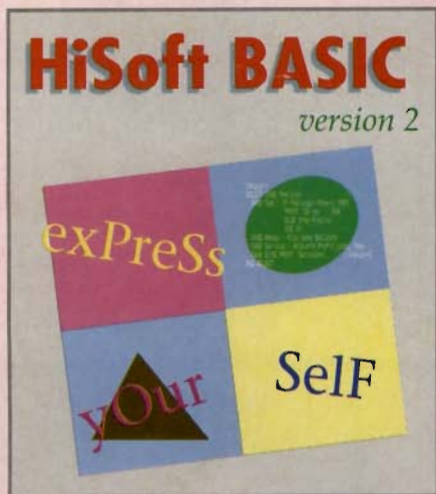


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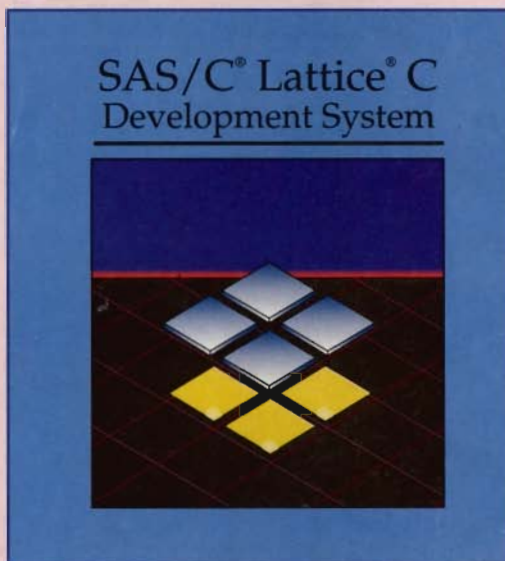
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Some reasons to be cheerful

HiSoft is renowned for its range of language systems, utilities and entertainment programs on the Amiga. We have been writing for the Commodore 680x0 computers since they were first introduced into the UK and thus we know both the hardware and software intimately. Our company policy is always to offer the highest quality software at an affordable price with a complete range of backup support options - in these uncertain, difficult times, we'd like to put a smile on your face.



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Stop-Press

We are delighted to announce that, following an exclusive agreement with Kuma Computers Ltd, we have taken over the distribution, support and development of their popular Amiga products. Existing Kuma customers should write to us or call us for details of our support schemes and information on our plans for the future of Kuma software.

At the moment we have the popular K-Spread 4 spreadsheet and K-Data database available (see our order form on the right).

We also have stock of all the 3rd Edition Amiga ROM Kernel manuals from Addison Wesley, together with the excellent 3rd Edition of The AmigaDOS Manual (Bantam Press).

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ADPro contender

GVP have announced the imminent release of Mirage, their new image processing software, whose features put it in direct competition with ASDG's industry standard Art Department Professional.

The package will have a full suite of image processing tools, including rotations, transformations, colour correction, and scaling/cropping, and will support a range of scanners and display enhancers.

In addition, GVP claims there will be support for animation, as in the newest version of ADPro, and a sophisticated painting function. The program is designed along modular lines to allow future upgrades to be seamlessly incorporated.

For further details, phone Silica Systems on 081-309 1111.

Sympatica price cut

THE Amiga's only high-level single frame video recording system, Sympatica, has been cut in price to £999 (excl VAT), and now supports Panasonic SVHS and MII video decks.

Optonica, the system's publishers, are offering to send a demo tape showing just what Sympatica is capable of to any reader who phones or writes to request one.

If you're interested, or have just bought a 24-bit card and are wondering what you can do with it, phone Lee Gibson on 0455 558282 for enlightenment.

Pro Midi from Microdeal

MICRODEAL should have started to ship their new Pro Midi interface for the Amiga as you read this.

The interface, retailing at £24.95, has Midi in, Midi through, and two Midi outs and claims to be a "full professional standard interface". Microdeal can be contacted on 0726 68020.

Scots on the move

AMIGA Centre Scotland have moved. Their new address is Harlequin House, Walkerburn, Peeblesshire, Scotland EH43 6AZ. They can be telephoned on 0896 87583 or faxed on 0986 87456.

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Stateside Safari

THE Safari range of PostScript fonts is now available in the UK. EM Computergraphic are exclusive distributors of the fonts, which are highly popular in the US, largely due to their quality and range of styles.

Meanwhile, EMC have also launched the EMC-PD/Shareware library, which intends to address the lack of support and availability of Type 1 fonts for the Amiga. Thirty-three disks are available, in seven volumes, and at £12.50 per 70 or 80 fonts, they represent extremely good value for money.

Font fanatics can phone EMC on 0255 431389 or wait for next month's Updates when we'll be looking at the cream of the EMC crop.

Flicker Free Video gets boost

ICD's Flicker Free Video card (AdFFV) could soon be outperforming all other Amiga flicker fixers thanks to the release of the Flicker Free Video Preferences program.

The program will enable AdFFV users to take advantage of vertical scan rates up to 100.2Hz (given a suitable monitor), but can also be used by owners of Fatter Agnus-equipped Amigas who don't have multisync monitors or flicker fixers.

Higher scan rates result in less noticeable screen flicker, so the program could be ideal for users of software running in interlace mode.

Other features include the ability to adjust Workbench overscan to make maximum use of the display area, and compatibility with Workbench 1.2 and upwards. The program is available to registered AdFFV users for \$15, or \$29.95 to other Amiga owners by contacting ICD on (0101) 815 968 2228.

Image Engine nears release

G2 Systems, for long the distributors of the Austrian VD2001 24-bit graphics card, are putting the finishing touches to their own 32-bit card, to be known as the Image Engine.

The new board will be based around the increasingly popular Texas Instruments 34020 chip, a dedicated high-power graphics processor, to allow continuous hardware scrolling of a 768 x 574 window, aided by the board's 4Mb VRAM. A real-time 24-bit digitiser capable of handling broadcast resolution images will also feature high in the Image Engine's spec list.

An 8-bit alpha channel will give the card linear keying capabilities previously enjoyed only by Amiga Centre Scotland's Harlequin board, and the Imagic paint software will be bundled free of charge.

Available in two configurations, one for RGB input/output, the other for YC/Composite, the board is aimed at the professional and semi-professional broadcast market.

G2 Systems can be contacted on 0252 737151.

DO YOU KNOW SOMETHING WE DON'T?

Although Amiga Computing has scores of contacts in the Amiga world, we need you. If you have some hot news, ring John Butters on the news desk now on 0625 878888 or fax to 0625 879966. All information supplied will be treated in the strictest of confidence.



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Third parties dominate show

The April World of Commodore/Amiga show was held at Pier 88 at the New York City Passenger Ship Terminal.

The terminal being used as an exhibition hall was sandwiched between the retired aircraft carrier USS Intrepid and the Queen Elizabeth 2, which was in port picking up passengers.

Unfortunately, many attendees felt the view of the neighbouring ships was more interesting than the Commodore booth.

According to a Commodore marketing executive, the company decided not to introduce any new products at the show in order not to distract from the third-party exhibitors. If this was really their goal, they succeeded remarkably.

Although most US users are well-aware of the recent European hardware releases such as the A600HD and 386SX Bridgeboard, Commodore would only issue a "no comment" about the new hardware developments.

The only products on display were Amiga 500s, 3000s, 3000Ts, and CDTV units.

Off the mark

Not that the US Amiga market is anxiously awaiting the Amiga 600 anyway, with a 25MHz 386SX-based PC clone – complete with Super VGA monitor and hard drive – selling here for about the equivalent of £575, users in the States want more performance from their Amigas than a poky 7.14MHz 68000 chip can supply.

The general perception here is that Commodore needs to introduce a fast, inexpensive Amiga with a better graphics chip set before the year is out if they want to remain in the US market.

Mr Gould's recent comments about not perceiving a need for a 68020 processor in an A500-level machine, combined with

Commodore's lack of announcements at the World of Commodore show, haven't done much to boost the hopes of worried Amigans here. As of this writing, we still don't even have the A500Plus available here!

GVP Steal the show

There was life outside the Commodore booth, however. By far the busiest – and most exciting – booth of the show was GVP's. With no fewer than ten new product introductions, GVP proved to be the leader in US Amiga development.

The show-stealer was the EGS-110/24 Enhanced Graphics System for the A2000. This high-performance 24-bit graphics card offers fully-programmable pixel rates, allowing it to display virtually any horizontal and vertical resolution, from standard NTSC, PAL, and Secam resolutions all the way up to 1,600 x 1,280 in full 24-bit colour.

There's even a special 256-colour, 12.5MHz mode that allows 3,200 x 2,560 pixels! The board plugs directly into a GVP 68030 or 68040 Combo accelerator for the 2000, and uses high speed VRAM (Video RAM) chips in conjunction with the Combo's microprocessor for speedy graphics updates.

The neatest aspect of the EGS board, though, is the included EGS Workbench driver. This program patches the Amiga's Workbench libraries to allow most programs to open on the EGS board's screen.

At the show they demonstrated Workbench 2.04 and PageStream running in 256 colours at 1,024 x 768 resolution. And the screen updates at this resolution were faster than a normal four-

Whats New USA

By Denny Atkin

colour Workbench screen!

All this power comes at a steep price, though. You'll need a GVP Combo accelerator (a representative at the show hinted that a version of the EGS board for the 3000 may be release at a later date), and the 4Mb version of the board costs \$2,699. The 8Mb version sells for \$3,399. Still, how much is too much for the ultimate graphics adaptor?

The other hit of the show was the new Mirage image processing/retouching software developed by upstart Nova Design, to be marketed by GVP.

I've been working with a beta of the program for a few days now, and I'm very impressed. In the same class of software as ASDG's Art Department Professional and Black Belt Systems' ImageMaster, Mirage combines powerful image processing tools, true-colour painting, full animation support, and a fantastic user interface to set a new standard in professional image tools.

Unlike other programs, Mirage doesn't force you to add tons of RAM to your Amiga to process large images – it can use your hard drive as fast virtual memory. You can now work on huge images with only 3Mb of RAM in your Amiga.

Mirage will directly display its images in regular and ECS Amiga modes, and on the DCTV, HAM-E, IV-24, DMI Resolver, Firecracker 24, and even the Video Toaster.

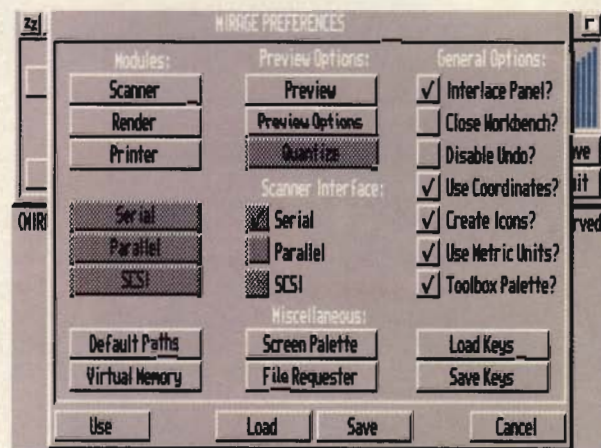
Bezier curvers

You can draw Bézier curves, and the program has a full undo capability. The program can load and save just about every popular format, including IFF, ANIM, JPEG, GIF, Rendition, Sculpt, TIFF, Targa, and PCX, and other modules can be added later.

It will include a number of unique image-processing functions, including one that can make digitised images look

just like oil paintings. If a function is missing, you can add it using AREXX or C, as Mirage includes information on how to create your own add-on modules. Priced at \$249, Mirage sets a new standard for features and ease of use.

Amiga 500 owners will be dazzled by the A530 Turbo. The device looks unas-



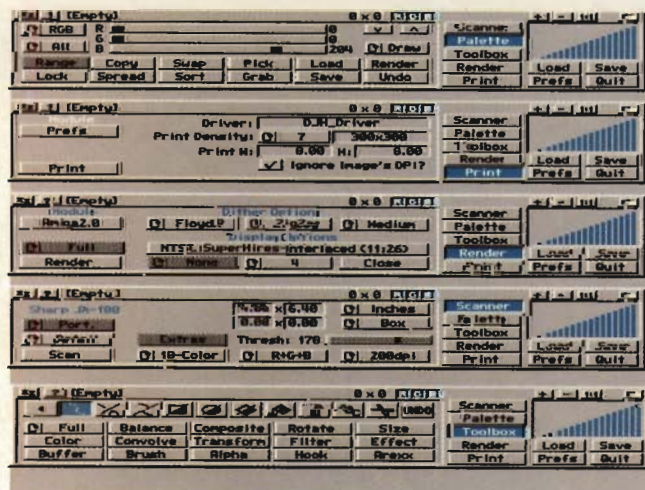
A preliminary version of the Preferences screen for GVP's Mirage

sumingly like a stock GVP Series II HD8+ hard drive interface. However, along with the high-performance SCSI interface and mini-slot for a GVP PC emulator, the A530 Turbo also includes a 40MHz 68EC030 accelerator that outruns an Amiga 3000.

The board includes sockets for up to 8Mb of fast 32-bit RAM, and room for a 68882 math co-processor. Prices in the US start at \$999 with no RAM and a 52Mb Quantum hard drive.

GVP were also showing the G-Force 040 Combo (\$2,499), a 25 or 33MHz 68040 board for the Amiga 2000 that includes SCSI, serial and parallel ports, and PhonePak (\$449), an incredible new board for the 2000 and 3000 that does voice-mail, fax send and receive, and the unique new "FaxMail" messages – faxes with digitised voice description attached.

On display too were the PC/286 module, which is essentially an ATonce-Plus board miniaturised to fit in the expansion slot in a GVP A500 hard drive interface; two video interface board for the IV-24 that add composite, S-VHS, and component video in-out; and the I/O Extender (\$299) – an A2000/3000 board with a parallel port and two Midi-capable serial ports.

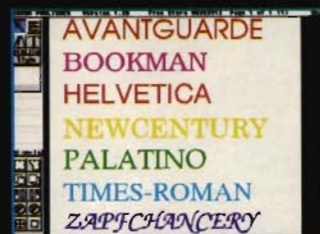
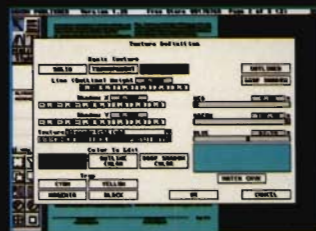
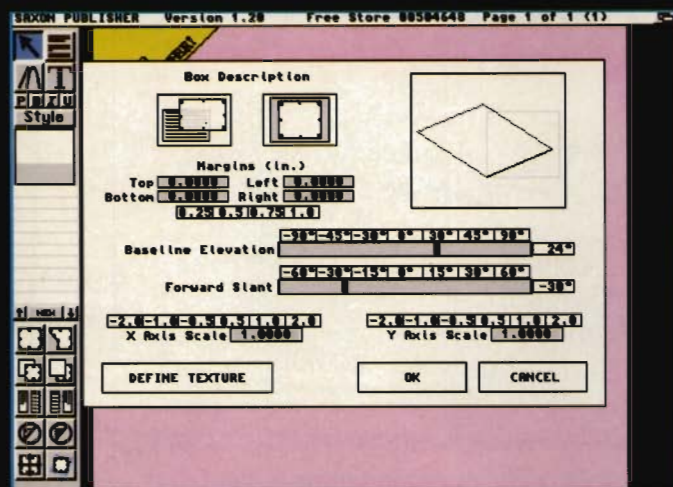


The control panels for GVP's Mirage

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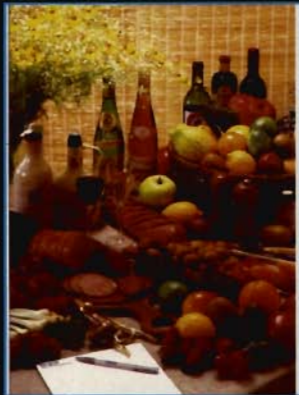
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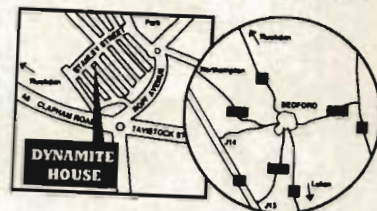
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The page makers

A top typographical trio go head to head in AC's battle of the DTP giants

The Amiga is more than a match for the best that the IBMs and Apples of this world can come up with as regards the power and complexity of its DTP packages.

With the universal PostScript standard becoming the norm for Amiga DTP output, no-one with an interest in publishing – from flyers to books – can afford to ignore the Commodore machine.

Here the AC team look at the three market-leading products, talk to a prominent print bureau, and open the lid on the world of Amiga DTP.

ProPage 3.0

If you're well versed in the ever-changing world of Amiga DTP you may already be aware that ProPage – or Professional Page as the authors would have us call it – has

only recently had a revision from v2.0 to v2.1.

In truth this minor upgrade was no more than a bug fix prior to the major release of v3.0. After an agonising wait the new version has finally arrived, but was it worth the wait?

After a brief glance at the improved features list it appears to have been exactly that. In the past the battle between PageStream and ProPage was nothing short of vicious with knees in the groin, thumbs in the eyes, and generally no holds barred, as each package desperately vied for the top spot.

Although this is still the case as far as sales are concerned, there's been a subtle change in direction that means that the two giants are perhaps starting to heading in slightly different directions.

Although others may disagree, I feel that there's been a slight shift in general approach to DTP, with PageStream going for a more artistic approach, if slightly more complex, while the new ProPage has made impressive moves towards automation, and general simplification of the subject.

Of the big three, it's fair to say ProPage is by far the easiest to master for the novice or occasional user. This doesn't mean pros won't be able to apply its potential effectively.

In fact, if speed is the key factor rather

than inspired and ever-changing layouts, neither of the other packages can match ProPage. If you're happy to employ uniform – and dare I say – slightly less than inspired layouts, it's perfect.

The main reason behind the new change of tack is the program's comprehensive ARExx support, which given its 330-odd commands, offers complete control of ProPage via ARExx. If the word



Near instant page creation, courtesy of the program's excellent genie options

ARExx sends a shiver down your spine, don't despair.

The program uses what it calls "genies" – ARExx scripts in disguise – which are directly accessible from ProPage at the

click of a button. When you boot ProPage 3.0, you'll find that what used to be the Mop tool has been replaced by an Aladdin's lamp button, clicking on which brings up the "genie" requester.

There are over 50 function "genies" already defined, ranging from the simple AllCaps and similar text effects, to box attribute control and even an ADPro "hotlink" which enables bitmap tweaking in ADPro and automatic re-importation.

As ARExx is being used by more and more programs, the "genie" feature makes ProPage 3.0 a much more powerful tool, and gives the ARExx-conversant user the opportunity to write macros for virtually every situation.

My one complaint concerning "genies" is the lack of an auto-record function. When you click on the Define button, ProPage simply loads up its accompanying Article Editor and expects you to write your own macro. If an auto "genie" generation option had been added, ProPage 3.0 would almost be a "must" rather than a maybe.

As it stands, any would-be serious user would be well advised to burn a little midnight oil on the ARExx manual to properly



Yet more friendly assistance thanks to the ProPage tutorial video that comes as part of the package. Shame it's designed for v2.1

exploit the option, or alternatively wait for "genie" updates or possible PD releases.

Other improvements include a font conversion utility which will convert Adobe Type 1 PostScript fonts to the Compugraphic fonts which Gold Disk seem determined to stick with. FontManager works well, and the converted fonts are of perfectly good quality.

Nevertheless, it can be a bit slow if you're converting a complete set of PostScript fonts across to your Compugraphic drawer.

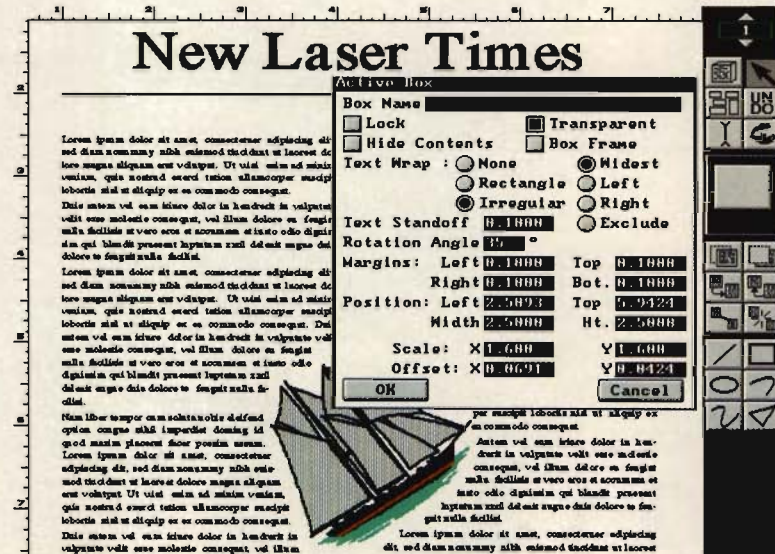
Having said that, its inclusion gives ProPage access to the hundreds of available Adobe Type 1 fonts. As typefaces are the lifeblood of DTP, its inclusion has come as a welcome, and near essential addition. If you don't have access to a font collection, don't despair – Gold Disk have included a selection of nine fonts as standard to get you started.

Another new feature is the addition of an irregular text flow option. Using this, text can be made to flow round the outline of any structured drawing rather than its box, as was previously the case.

Unfortunately, although Gold Disk have at last seen the light, the application of the new option is less than perfect.

Text can flow around the left or right of an object, but not both, so it's still impossible to have a circular hole in your text unless it is at the juncture of two columns and you create an ellipse either side of the gutter.

The direct Hotlink to ProDraw 3.0 – due for release later this year – is probably the last major change from v2.1, and is easily the most attractive to users who employ a lot of clip art or their own struc-



The ever-present box requester, just waiting for a double click to reveal its secrets



Instant assistance thanks to ProPage's online Hyperbook help file which makes the learning curve as painless as possible

tured art within their documents. The user need only click on the box containing the ProDraw clip, select the ProDraw option, and ProDraw is loaded with the clip ready to edited.

In combination with ProDraw 3.0's new Fountain Fill option, which will allow full page gradients, the hotlink adds a great deal of functionality to ProPage, saving a lot of time and hassle if you often employ structured art.

On the graphics front, ProPage is pretty impressive with a good selection of importation options which of course include ProDraw and Aegis Draw for structured art, plus encapsulated PostScript and bitmap graphics which includes 24-bit images.

With the new auto-tiling print option, a long-needed Undo feature, text filters for most American (not British) wordprocessors, plus a few tweaks to the colour separation process, ProPage has come a long way in the trip from v2.1 to v3.0.

There are still areas in need of improvement, but in general, Gold Disk have done a fine job in boosting the package. My main bone of contention concerning the latest version is program's insistence on sticking with the irritating need for boxes with everything.

No matter how small the amount of text or minuscule the graphic, a box is required prior to importation, unlike PageStream which happily imports text directly into predefined columns or adds graphics directly onto the page.

Another minor inconvenience is the inability to define text as an object and then resize by simply dragging its box, although having said that text can be resized relatively simply by highlighting the text and redefin-

ing the point size, or alternatively employing the program's impressive style tagging talents to resize to a predefined size or style.

Last on the moan list comes the inability to define zoom, although five predefined degrees of zoom are available as standard. On the plus side, this minor point is more than made up for by the excellent option to specify interruptible refresh, an option which soon become indispensable.

As mentioned earlier, perhaps the biggest attraction of the program to the new user has to be the friendly "genie" system which even allows creation of entire documents from predefined formats which come as standard with the software.

These vary from business reports to full page ads and twin fold brochures, to name a few. All the potential user need do is fill in the gaps with assorted text and graphics while the program automatically adds all the details and page positions.

As a result, a document can be started and sent to print in a matter of minutes, but as I mentioned earlier the use of "genies" does tend to create rather uniform and slightly uninspired output, which is compounded slightly by the program's tendency for rather angular layouts.

In general, ProPage is ideal for the



Saxon's flexible box shapes can aid in the design of unconventional layouts

beginner and expandable enough for the expert. Also, its interact hotlinked design with additional programs such as Adpro and its own Article Editor make it a very impressive DTP workstation.

If you're looking for a friendly introduction to DTP that will grow with your experience, ProPage is ideal.

Paul Austin

Saxon Publisher

Although it falls a little short of being a dream for serious DTP enthusiasts, Saxon Publisher has a wealth of features which make it worth a good look before making up your mind which package to go for. But be warned - Saxon is not a cheap option.

The emphasis truly has to be on the word "serious", not only because of what you can achieve with this package, but also because of its relatively high cost, the hardware you need to run it properly, and the output devices it can drive. It now also comes complete with Saxon Script Professional Interpreter, giving access to the wonderful world of PostScript output.

When I reviewed v1.1 of this package: just over a year ago, my conclusions were that it would see far more business than home use, that it was bound to improve with subsequent versions, and that more fonts, printer drivers and the odd cosmetic improvement would help.

In fact, version 1.1 was never released in the UK, so 1.2, which has just become

comprises a sidebar containing, among other things, selection gadgets for four operating modes - cursor, paragraph, drawing and text. Those other things include type style icons (bold, italic and so on), screen position gadget (for moving around your page when you've magnified your view and parts of it are therefore hidden), and rectangular and freeform box drawing tools.

The sidebar also holds a list box which displays filenames of stories and pictures (if you've imported some, that is) to be inserted in your document, or typestyle names if you're in paragraph mode, some extremely useful vertical justification gadgets, two tools for deleting boxes or their contents, a box-moving gadget and a graphic-fitting gadget.

In paragraph mode, you also see style transfer gadgets, another very useful feature which allows you to impose the style of a highlighted paragraph onto an entire section of text appearing either before or after it.

In drawing mode, your line, rectangle, ellipse, circle and other basic artist's tools are displayed in the sidebar.

In some of the modes, Saxon disables some of its facilities - for instance, in text mode, on-screen colours, internally created structured drawings, drop shadows and outlines will not be shown, to speed up screen refreshes.

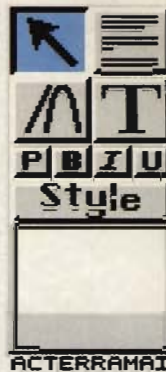
Switching back to cursor mode will provide you with the complete picture of your

achievement so far.

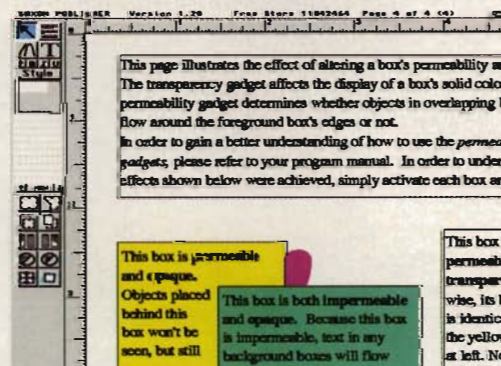
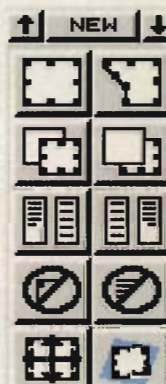
Important though the sidebar is, you could hardly get by without altering type specifications, being able to set your preferences, import text and graphics and perform the other operations vital to a decent document. For these, click the right mouse button in the time-honoured Amiga way, and a menu bar which for the most part is fairly self-explanatory will appear.

Selecting a sub-menu will, as likely as not, cause a requester to appear. Be warned that many of the details in the requesters are quite tiny, and a hit every time, especially with an accelerated mouse, is not guaranteed.

Also, I don't very much like the method of choosing typefaces - clicking on one of



ACTERRAMAT



Box styles and textures give the designer a wide degree of choice

available, is actually Saxon's debut version.

The addition of a fully independent PostScript interpreter, the ability to use a whole host of Adobe and Compugraphic fonts, a monitor calibration utility to ensure accurate on-screen colours, and - most significant - a dramatic increase in the screen refresh rate and general speed of the package, shows it is moving in the right direction.

However, I would still like to see some improvements in the way Saxon Publisher operates.

First, though, a potted description of this very hot contender for the title Most Polished Amiga DTP Package of the Moment.

The view of your publishing world

stereo MASTER

When you are considering purchasing a sound sampler there are plenty to choose from. Why compromise? your choice should be the new full featured STEREO MASTER for the Amiga, with software that is designed from our top selling Amiga sampler AMAS and a package that gives you more extras than a M series BMW. By purchasing this state of the art product which combines a quality sampler with the expertise of over 10 years of software programming, you are purchasing a top quality product with the knowledge that it is not only compatible with existing Microdeal products but will also be with future ones.

What is Stereo Master

Stereo Master is a low cost, high quality sound sampler for the Amiga range of computers. The sampler cartridge included in this package plugs into the printer port at the rear of the computer and allows you to analyze the sounds coming in from devices such as Personal Cassette Players, Compact Disc Players etc, or change the way they sound using the Real Time Special Effects or record them. Once in the computer STEREO MASTERS unique editor will enable you to edit the sound in practically any way you can imagine. Once you have the sound sample how you want it, you may incorporate it into your own Demo's or use STEREO MASTERS own built in sample sequencer to play back the sample in sequence with other samples!



MAIN SCREEN

The Sampling Software

Every feature you would expect to find in a professional editing suite including:

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- Filter sample with soft/medium/hard filter
- Selectable trigger volumes
- Record frequency from 3.0 to 55.9 Khz
- Full editing and control facility for left/right channels
- Playback volumes
- Decrease volume
- Increase volume
- Bounce sample
- Paste sample
- Trigger recording
- Clear left/right samples
- Loop sample

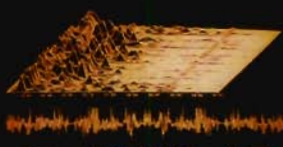


THE SPECIAL EFFECTS CONTROL PANEL

The Special Effects Software

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The Analytical Software

- A whole host of pro-type analytical functions include:
- 3D display of sample frequencies (Fast fourier transform)
- 3D display also includes 2D envelope display plus sample information.
- Built in Stereo spectrum analyzer
- Stereo Oscilloscopes with trigger markers



STEREO SPECTRUM ANALYZERS



STEREO OSCILLOSCOPES



THE SEQUENCER CONTROL PANEL

The Sequencing Software

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- Step time entry of sequences
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- Storyboard style editing
- Digital sequence position display
- Fast forward/rewind controls
- Program sample to keypad
- Stand alone demo player displays IFF picture whilst playing sequence
- Sequence copy function
- Loop sample
- Selectable sequence speed
- Dump/re-edit function
- Test function
- 2 octave playback
- Insert/delete sample in step time

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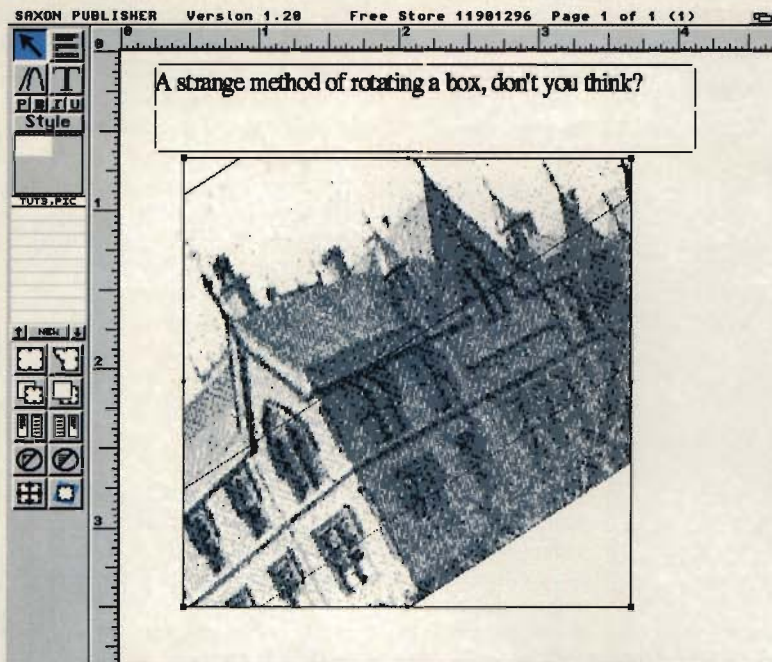
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Saxon rotates the contents of a box rather than the box frame, which can cause problems

the letters of the alphabet will, if you're lucky, bring up the name of a font beginning with your selected letter in a field above.

But there's nothing under some letters, while others, quite naturally, have more than one font associated with them, so you have to make another selection. It's a simple view, but I'm convinced the best way to choose a font is from a list of fonts!

The basic idea is to import the text and graphics you want to go into your document (a variety of file formats is catered for in each case), draw the boxes they are to go into on your page(s) and place the files and graphics into the boxes simply by pointing and clicking on boxes and items in your list.

You then format your text using default or custom tags from your other list, adding colour and, if you like, tilting graphics and/or text to taste. You can also add a headline or two, and some picture captions if you wish.

Easy, isn't it? Well, it does take a couple of tutorials (in the manual, I'm afraid, not interactive ones on disk) to get the hang of it.

Drawbacks

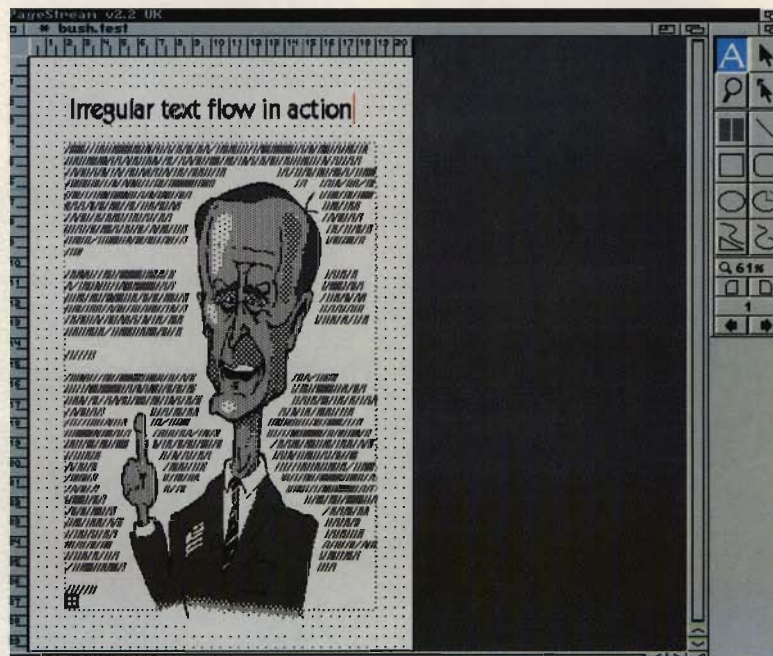
So what about those other operational drawbacks hinted at earlier? Let's take rotation of boxes (the bounded areas whose size the user specifies, and which hold the text and graphics of your documents). The problem with Saxon's box rotation is that it doesn't exist.

Fair enough, you can click on Alter Active in the Box menu and specify any angle you like in the requester that comes up, but after you've OKed it, you find that only the angle of your box's content is re-aligned at the new angle. What you get is sloping text within the existing parameters.

With graphics, the result is different – you are apt to lose the corners of you

piccy as the picture's margins move with it, while the box maintains its position.

I searched in vain for a way of rotating the box and its contents together. On re-reading the manual (which incidentally has not changed from the one which came with v1.1 last year, although there is a supplement to it detailing changes) I found the following:



PageStream is the only current DTP package to employ completely irregular text runaround

"If you do lose a portion of your image, you can easily reshape your box or alternatively move the graphic in such a way that it becomes fully visible again.

"If your box contains text, you will notice that the program will still respect the specified margins (of both the text block and the bounding box) in determining text flow. Depending on the effect that you are trying to achieve, you may reset the box margins or alternatively reshape your boxes..."

It sounds almost reasonable until you try to reshape your box by grabbing its handles with your pointer. If you want a square box to have a 30-degree tilt, but wish to keep the corners of your box at 90 degrees, for instance, maintaining those corners will severely test your patience.

Re-aligning a complex polygon could have you reaching for the Valium. Although it is quite possible to achieve complex, even dazzling results with Saxon and a liberal amount of patience, today's professional market will want it to be quicker and easier.

The home enthusiast who invests in this package might, on the other hand, be willing to forgo the ease of use the pros have come to expect after the likes of Aldus PageMaker and Quark XPress – but only in return for an inexpensive package which operates on low-spec hardware.

And there's another problem. Although you can get away with two floppy drives, and the manual states the program functions properly with any standard Amiga display, you really need a hard disk and to be in hi-res to do justice to Saxon.

Hi-res on the Amiga means you get that annoying flicker problem, so a high persistence monitor is really the order of the Saxon day.

To complete the moans section before moving on to the positive side, it appears that Saxon lacks one of the most funda-

clear out the original contents? Such a simple improvement could save so much time. So much for the downside. What are the truly positive aspects of Saxon?

It's robust. Apart from a few annoying niggles, it's built for the job of serious DTP. It handles colour – both on-screen and as output – extremely well, and has plenty of features like textures – including fades, radials and stone bricks – drop shadows, kerning, vertical justification, box layering and easily controllable text runarounds.

With its additional font facilities and PostScript interpreter, it seems Saxon will make the professional grade. What it needs now are a few improvements like easy box rotation, and customised requesters which make it easier to select options.

Saxon's cost and hardware demands will put it out of reach of many home users, but if you're keen and can afford it, it's certainly one to go for, especially if you're a perfectionist when it comes to the finished job.

Richard Williams

PageStream 2.2

In its earliest incarnations, SoftLogik's PageStream suffered by comparison to ProPage because of its quirky user interface and its various glitches and idiosyncrasies, such as the non-interlaced screen's refusal to recompute the vertical ruler to its proper size.

With the latest version, however, PageStream has sorted itself out and is now much smoother in use. To the beginner, PageStream 2.2 now offers a much less painful introduction to DTP.

Its redesigned user interface is logical, consistent, and about as standard as Amiga programs get, utilising fairly universal key combinations for most actions.

This means that when you hold down Right-Amiga-A to select all of the current text, you don't get a style tags requester as you do in ProPage.

Its "frameless" approach means you don't have to define a box before importing a graphic file and makes possible the direct typing of headlines and so on.

Anything typed directly onto the page becomes a text object once it's been created, of course, but for beginners who just want to get up and running PageStream is friendly enough to enable a flyer or leaflet to be completed within a couple of hours of opening the box, almost without looking at the manual.

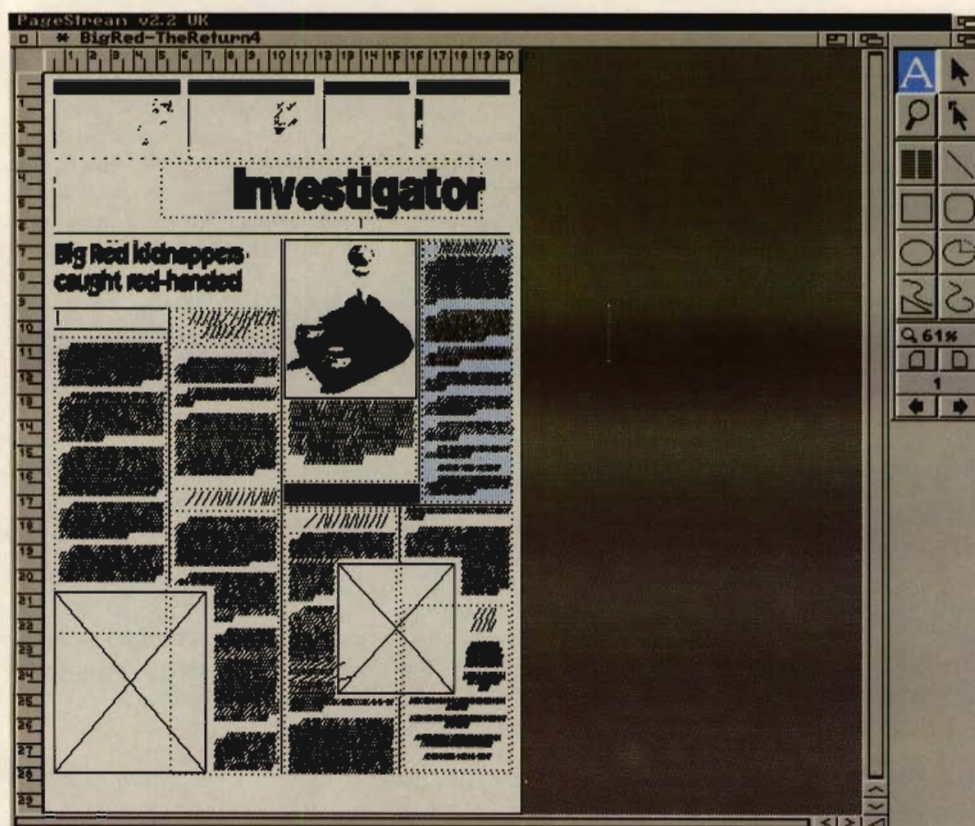
The user's smooth introduction to PageStream is helped immensely by its thorough implementation of Workbench 2.0-style requesters. This has been done so well that even when faced with an entirely new requester, the user should feel familiar enough with the interface to get to grips with it quite quickly.

Menus are well thought out – most of

mental requirements of those who make errors (and who doesn't?) – an Undo facility.

Also – and I accept this is a general criticism of the way most programs work on the Amiga – can Saxon please do something about the file requesters?

Why, oh why can't we have fields in requesters which are editable by highlighting and then typing to replace what is already there, rather than being restricted to delete keys and Amiga-X to



PageStream is capable of creating very complex routines, though speed suffers at this level of detail

the options are where you'd expect them to be – and the floating toolbox is presented in clear and understandable icons.

In fact, the overall impression when using PageStream for the first time or, as in our case, after a long holiday from it, is of a program which does its best to be accommodating rather than demanding.

Don't let all this friendliness fool you into thinking PageStream is useless for serious DTP, as the reverse is the case. Everything from its support for the various graphics formats to its page layout tools and treatment of typefaces puts PageStream up there with the best of them.

Apart from the usual IFF and IFF24 graphics standards, PageStream will accept Adobe Photoshop EPS (encapsulated PostScript) files, TIFF and PICT (complete with picture preview), IMG, MacPaint, Degas, GIF, PCX, Aegis Draw, and DR2D clips.

Text import supports most major American wordprocessors and just about any format of Ascii text you care to name, which can save a great deal of time going through a file to strip out unwanted carriage returns.

Text import

Page layout under PageStream 2.2 is aided by the more open-ended frameless approach and by several powerful features, not the least of which is the master page option.

By defining a master page, the user can set out page numbers, folios, margins, and guides for one page and have this repeated across every page in the document. With double-sided documents, a

right and left master page can be created and the template applied automatically to odd and even numbered pages, releasing the user from the hassle of loading templates.

The only limitations to working with master pages are that any feature based on a master page can only be modified from the master.

This means, for example, that text columns should not be defined on the master page unless the user is content to have exactly the same size and number of columns throughout his or her document.

The upside is that any change made, say, to the format of the header or footer, is instantly carried over to every other page.

Importing text is made easier by the program's treatment of columns. Unlike the other two main packages, PageStream creates columns guides which are automatically treated as text boxes, complete with drag and resize tools.

This means flowing text into a page is a simple matter of creating columns using the menu option, clicking on the text tool, then selecting Import/Text.

The same easy-handed approach is taken to graphics importation. The user selects Import/Graphics, then chooses a picture using the standard file requester. There is then a choice of whether to import as an object or a picture window.

If the user chooses the object option, he or she can place and drag the graphic to the required size and location on-screen before releasing the mouse button to load the file.

The picture window option allows the loading of a file into a clipboard-style win-

dow from which areas of the graphic can be cut, pasted, and copied to the main document window. This is very useful when using clip art as there are often several clips in one large file.

So much for the chuck-it-on-the-page functions. When it comes to fine tuning, PageStream is no slacker either. Point sizes for typefaces are scalable in steps of one hundredth of a point, the nine measuring systems include pica, didot, metric points, and ciceros, and colour is controllable through HSV, CMYK, HLS, or RGB values, though most professional users will settle for CMYK.

Page layout can be enhanced with the usual design features,

such as boxes, ellipses, Bezier curves, and so on, and there are twelve text styles to choose from, including reverse (making WOBs a doddle), outline, strike through, shadow, backslant, and even mirror.

In addition, any page element can be rotated, slanted, and twisted using the excellent rotate requester to produce pseudo-perspective effects.

Text runaround, unique to PageStream, can be set to run around both sides of an irregularly shaped object (something even Quark Xpress can't do), and though this isn't always a useful feature for professional productions, its inclusion is an indicator of the quality and completeness of

the PageStream package. There's virtually nothing you can think of that PageStream won't at least take a stab at.

Printing, especially to PostScript printers, has been greatly improved with v2.2. Tiling, scaling, thumbnails, mirror, negative, and a full set of crops and registration marks are all available through the print requester, and the Configure Printer option will allow close control of downloadable fonts to make the most of your Amiga's and printer's memory.

This most important feature of DTP, as well implemented as it now is, nicely rounds off a fully-featured and powerful package.

The main problem with PageStream is speed. Even on an A3000, screen update can be painfully slow when working close in on un-greeked text, and there's no feature to turn off screen refreshes such as that offered by ProPage.

In addition, the bleed area around your document is not properly pressed into service as a paste board.

PageStream will allow the user to put page elements in the bleed area when in full page view mode, but once zoomed in will not display anything which is off the page, making full use of the paste board impossible.

Stevie Kennedy



The Rotate function's slant and twist features make pseudo-perspective effects possible

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Jargon buster

Backslant	The opposite of italics. Backslanted characters will lean to the left rather than the right.
Baseline	The invisible line on which a line of text sits.
Baseline shift	The distance of text from the baseline. Positive baseline shift gives you superscript text, and negative shift gives you subscript.
Clip art	Any pre-drawn graphic imported for use in a DTP document. These can be IFF bitmaps, vector drawings, or PostScript files.
CMYK	Cyan, Magenta, Yellow, and Key (black). A combination of these four colours will give any colour you like on paper. See the box-out on printing for a further explanation.
Crop	To cut a graphic or printed page to a certain size.
Crop marks	Hairlines printed along with your document to show the printers where to cut the finished page to size.
(EPS)	Any bitmap or vector drawing image which has been defined and saved in the PostScript printing language.
Greeking	This is used to speed up screen refreshes by representing text as a block of filled space or a series of backslash marks.
Guides	Similar to the grid, but used mostly for margins and so on, guides are horizontal and vertical lines which are used by DTP operators for aligning page elements. Some packages will allow "snap to guides" to keep everything aligned perfectly. Like the grid, they will not appear on the printed page.
Gutter	The space between columns of text on a page.
Halftone	An image which is represented by different sized black dots to differentiate between light and dark shades. Halftones are used mostly by newspapers and other mono publications.
Jaggies	The effect created by bitmap fonts and graphics, where the pixels show up the ragged edges of the image. Some outline fonts use bitmap screen representations which look slightly jaggie on-screen but which will appear perfectly smooth when printed.
Kerning	The process of varying the amount of tracking between two character (such as AV) so that they fit tightly together, thus improving the final look of the document.
Leading	Pronounced "ledding", this is the amount of space between any two baselines in a body of text. Leading can be expressed in different ways depending on the measuring system you use. For example, 12 point text with 14 point leading will have a two-point gap between the top of the tallest letter and the next line up.
Mechanical separation	Also called "spot colour". Most DTP packages allow the user to use mechanical separation for colours, such as fluorescent orange, which can't be separated into CMYK values. This is an expensive operation as it involves the production of an extra printing film for each spot colour.
Point	Ditto. A point is 1/72 of an inch and is written 1pt. This is by far the most popular measuring system currently in use.
Routing	The path through which text will flow across a number of columns. Most packages will allow this to be set automatically when columns are created, then adjusted by breaking the link between columns and creating new ones. In this way, text can be made to skip columns or entire pages.
Serif	A category of font which has "serifs" or small fancy bits at the end of straight lines on every letter (such as T and E). The opposite is "sans serif", fonts which look more modern and clinical. The text you are now reading is in a sans serif font.
Standoff	The amount of space left around a graphic when text is flown around it.
Tags	Style tags are short-cuts used to apply a text style, size, font, and many other attributes to a selection of text. The better DTP packages will usually allow the definition of a range of style tags, one each for headlines, captions and so on, which frees the user from the need to select all the text attributes each time a style is required. A collection of style tags is known as a style sheet.
Text runaround	The process of forcing text to follow the outline of a box or other page element rather than just filling a column. The better packages will allow text to follow irregular outlines such as circles or drawings.
wysiwyg	What You See Is What You Get. Any decent modern DTP package will offer a wysiwyg display, meaning that what you see on-screen is an accurate representation of what appears on paper.



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The products listed are available from:

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The Rendale range of Amiga Genlocks begins with the 8802. This is a Genlock, which, when attached to an Amiga computer and a suitable video system, will allow you to mix video and computer graphics. It offers all the functions that you need, such as:

- * RGB feed through, allowing for a preview monitor.
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It can be supplied with a device which will allow you to fade between computer graphics and the video source, and also a mode control unit so that you can move between Amiga only, video only, background mode and foreground modes 1 & 2.

RENDALE SUPER-8802 £499 -

The Rendale Super-8802 is a development of the basic 8802 unit, it performs the same functions, but has the added capability of also working with Super-VHS signals. The unit will allow the user to cross fade between the Amiga and video signal. In addition, some basic wipe patterns are provided, and also a fade to black option. Mode control is also provided via hardware.

NEW! RENDALE FMC £45-fitted £42-loose

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This is a brand new piece of kit which will improve the capabilities of the popular Rendale 8802 Genlock. This unit allows you to cross fade between the Amiga and video signals, so that you can gently fade computer titles in and out. Also, the ability to switch between the various modes offered by the 8802 is provided. The required mode is selected by a push switch, giving smooth, flicker free transformations.

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Rendale Genlocks are designed to be flexible, and the ability of your Genlock to grow with your system was deemed to be of paramount importance in our design process.

As a consequence, existing 8802 users can follow one of two upgrade paths. The fade and mode control unit (FMC unit) can be purchased independently, and fitted either by yourself or our engineer. Basic soldering skills are essential for self-installation. Or, for only £3.00, our engineer will fit it for you.

The other upgrade path is the move from a purely composite 8802 to the Super-8802. This can also be done simply, although we do have to perform the upgrade work at our factory. We would only require your unit for around two days.

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If you've ever wondered whether it was worth your while buying an expensive DTP package when your wordprocessor would suffice, then been put off for good by the cost of finding out, now's your chance to peek into the world of one of the Amiga's most advanced application areas. Thanks to *Amiga Computing*, it won't cost you a penny.

The Saxon Publisher demo on your CoverDisk is identical to the full program with the exception that it will not save or print your work, so it forms an excellent introduction to the DTP world.

Version 1.2 of the program is the most recent release in the DTP war, and is packed with the sort of advanced features you would expect from a program costing £250.

Booting up

Start the demo by booting your CoverDisk, going into the Saxon Publisher drawer and clicking on the Version 1.2 icon, or selecting Saxon Demo from the ShortCut menus.

When the program has loaded, it will begin a rolling demo of Saxon's features, which you can halt by pressing the Escape key to return control of the program to the user.

It would be best to do so at once, as the demo is more suited to NTSC (Saxon Publisher is an American program) than PAL Amigas, and so doesn't work particularly well on European machines. As soon as Escape is pressed, the cursor will halt and you can begin to explore the package.

Our first job is to add a page to our document, so go to the Page menu and select

the DISK Saxon Publisher 1.2

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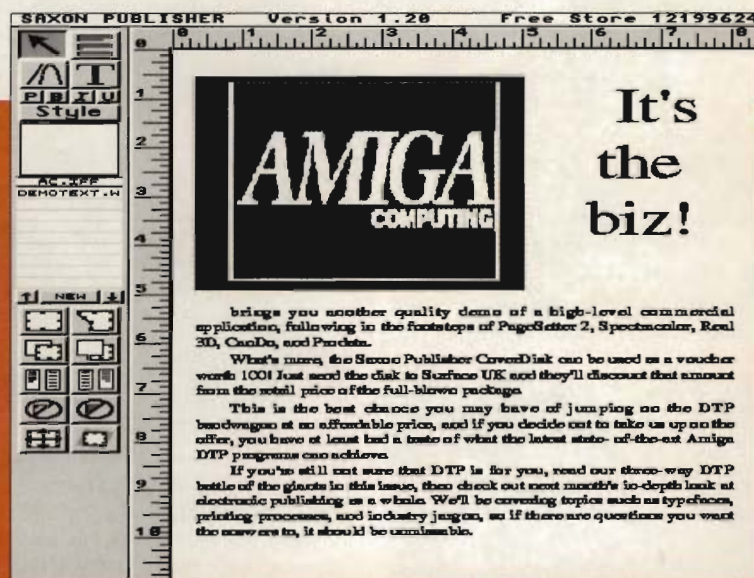
Add. A requester will pop up in which you can choose the size of page to work on and define its background texture, but for our purposes simply clicking on OK to choose the default A4 size will do.

Your page, which for now is completely blank, will appear on-screen ready to be filled. At this point, we'll import the two elements which will go to make up the simple demo page, so hold down the right mouse button and select Graphic/Import IFF from the External menu.

When the file requester appears, click on Drives, then CoverDisk33, then SaxonPublisher_1.20, then DemoFiles - phew!

You should see two files, one called AC.iff, the other called DemoText.wp. Double click on the AC.iff file and after a bit of disk accessing its name will be tagged in the files list you should see halfway down the toolbox on the left-hand side of the screen. To import the text file, use the Import Text/Word Perfect option on the External menu.

To save time when the file requester pops up again, click on the History gadget and Saxon will display the directories you've recently



When we've finished, the demo page should look something like this

used. The only one listed will be the DemoFiles directory, so click on this to go straight in, then double click on the DemoText.wp file. Again, this will be listed on the left of the screen.

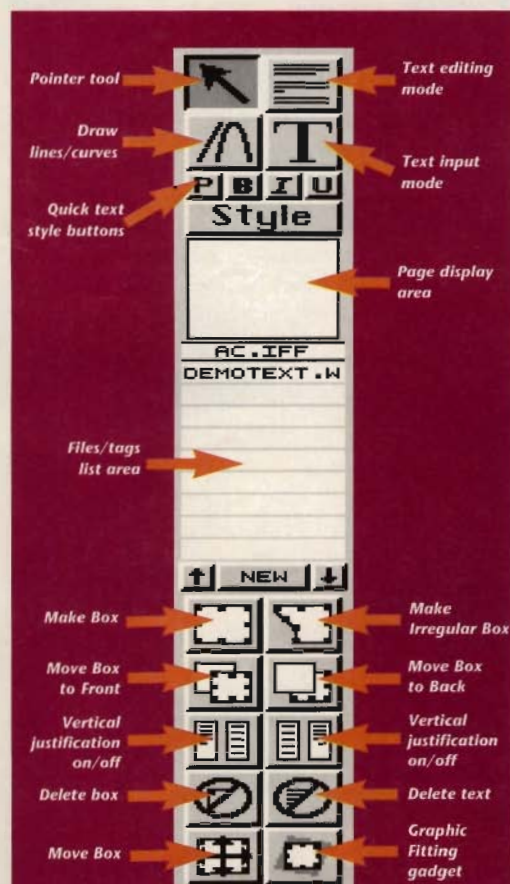
Now to get these files on the page. Every "element" in Saxon documents is framed in a box in an attempt to make the structure of a page as easy as possible to control. Unlike most other DTP packages, however, Saxon will create any shape of box you please. For now, we'll stick to simple square ones.

Click on the box tool (top left tool below the files list) and a set of crosshairs will

appear on-screen. Position these where you would like the box to start, click the mouse, move the crosshairs to where the box will end, and click again to draw the box. Now repeat this operation to create a second box.

We need to resize these boxes so that the top one is about a third of the page high and just over half as wide, and the bottom one two-thirds of a page in height and almost as wide. Do this by clicking on the small sizing boxes along the edges of the active box.

The active box is the one you last cre-





ated or clicked on, so click on the top box and resize it, then click on the bottom box and do likewise. Once you have them at an acceptable size, click again on the top box to make it active and click on AC.iff in the files list. This will automatically import the graphic to the box.

You won't be able to see it at first, so select Graphics/Display Page from the Preferences menu and the screen will be redrawn. Once the IFF is visible, you can resize your box to fit it to the actual size of the image.

Now click on the lower box to make it active and the on DemoText.wp in the files list. The text will be imported in the default 12-point Times-Roman font and will not fill the box.

To change the type style, click on the text tool at the extreme top right of the toolbox (the one which looks like a page of text), then choose Alter Current from the Type Style menu.

A large requester will appear from which you can control the attributes of the text contained in the currently active box.

You will find a selector at the top for font type and size, but as the demo only has room for one font (Times-Roman) you can only choose to change the size. Do this

now by clicking on the box containing the number 18, which will tell the program that our text is to be displayed as 18-point Times-Roman.

Click on OK to return to the document and notice the difference. Our demo text is much larger and should more than fill the box. Now click on the pointer tool (top left) and resize our box to make sure all the text is displayed in it – you can go back to the previous requester and change type size to 15 point or so, but this isn't necessary.

If you are now happy with the text, our page should look fairly full, but the IFF will look a bit smaller than it should be. To change this, click on the top box to make it active, then select Alter Active from the Box menu.

Another large requester should appear using which it is possible to slant, rotate, and resize our box.

Look for now at the scale selectors towards the bottom of the requester. The available scale factors go from half to twice original size, but the string gadgets give you much closer control over scaling.

Click in these and type 1.5 for both X and Y scaling, then click OK. When the page redraws, our AC logo will be rather larger and probably won't fit in our box.

To reveal the rest of the image, drag out the box edges until all the IFF is showing. You should now have a reasonably tidy page, but as we have designed it more or less freehand, it won't be as accurately set out as it could be.

Laying out

To help in the layout of a page, Saxon offers several standard DTP features. The first of which you should use is the Grid option. Go to the Preferences menu and select Imposed Grid/Temporary Show. The page should be overlaid with a grid of small dots.

These dots indicate where the imaginary grid lines intersect each other, and they are the points to which the corners of boxes can be made to adhere in a technique usually called "snap to grid".

The default Saxon setting is that Snap to Grid is on, but even so you may not have lined up your boxes properly.

To try this out, with the grid points still showing, click on the box you want to move, then on the move tool, which is in the extreme lower left corner on the toolbox. The familiar set of crosshairs will appear on-screen, but this time they will be carrying a ghosted outline of your box. Now that the grid is visible it should be easy to place it exactly so that it lines up with the other box.

Notice that when you click to position your box, the grid disappears. This is because with all those points on-screen the update would slow down too much, so they are only displayed when needed.

The next page layout aid is the column guides feature. If you wanted to place our demo text, or any other text for that matter, in two or more columns, you'd need some sort of guide to keep your columns the same width and with the same gap between them

Get £100 off Saxon Publisher 1.2!

This month's CoverDisk is not only an ideal introduction to DTP, it is also a not-to-be-missed opportunity to take a first step into this exciting Amiga scene for less than you've ever had to pay.

Saxon Publisher 1.2's normal retail price is £249.99, but in a special offer organised with Saxon Industries and Surface UK, Amiga Computing readers need only send their original CoverDisk to Surface along with a cheque for £149.99, thus saving themselves £100.

Saxon Publisher is currently being shipped with a free copy of the powerful SaxonScript Professional PostScript interpreter (reviewed next month), so as a bargain bundle this one is hard to beat.

If you intend to take advantage of this opportunity, or require more information about Saxon Publisher, contact Surface UK at:

5 Rockware Avenue, Greenford
Middlesex, UB6 0AA

or phone them on 081-566 6677 (ext 106)

(the gutter). To do this, select the Column Guides/Create option from the Page menu.

When the requester appears asking you how many columns you want, type 3 and click OK. A set of crosshairs similar to those used to create boxes will appear, but you must use these in a different way.

Position the crosshairs somewhere in the top left-hand corner of the page, then move to the bottom right of the page. When you click in the lower corner, hold down the mouse button and drag the crosshairs back across to the left.

As you go, you will see the box outline split into three, with an equal sized gutter between them. Click once more to set the column guides once you are happy with them.

Now you have to put boxes round the column outlines so that text can be flowed into them. To do this, it is best to switch off the grid or redefine it so that the points match the corners of the column outlines, so choose Imposed Grid/Define and either click the Off gadget or experiment with the grid setting until it matches the columns.

Now go back to the page and use the box tool to create boxes over the outlines you should already have made. You'll have to judge this as best you can, but with practice, especially once you've sussed out your grid settings, the process is a lot easier.

ier. Text routing, the process of forcing text to flow from one column or box to the next, is easily accomplished in Saxon Publisher.

As long as you have two or more boxes defined, flowing the text in is a simple matter of clicking on the first box, then on the file name in the file list, then repeating the process for the remaining boxes.

Bare essentials

You have now had a quick guided tour of the bare essentials of DTP work with Saxon Publisher 1.2. The next step is to create your own page from scratch, and experiment with every feature of the requesters and menus we've used so far.

Try rotating the image we put in the top box, or using a larger text size and putting a headline on the page – try anything in fact.

The whole point of electronic DTP is that it not only makes life easier and quicker for the layout artist, it also makes experimentation a lot easier and offers a lot of flexibility to the eager twiddler.

If this brief intro has whetted your appetite at all, check out our DTP feature in this issue or take advantage of the £100 CoverDisk offer. You won't be sorry you did.

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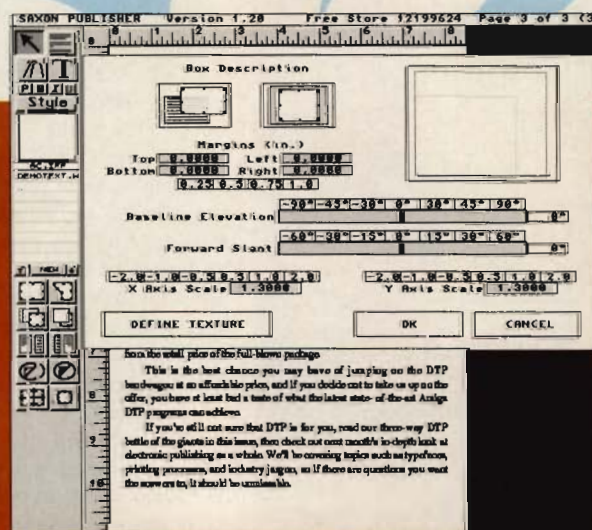
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The box attributes requester is useful if you need to scale, rotate, or add a texture to a box

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As this issue of the magazine was going to press, Commodore announced these new models - due for release at the end of April 1992.

The details below are provisional, but rest assured the multi title Powerplay pack we are putting together around the 600 will include as usual, a superb value collection of high quality software and accessories. By the time you read this, our plans should be finalised.

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Existing Amiga owners who have peripherals which connect in these ways who wish to upgrade computers, should consider whether the new A600 or its recently launched partner in the Amiga range, the A500+, is the most appropriate for their needs.

Please contact us if you would like to discuss these technical matters in more detail.

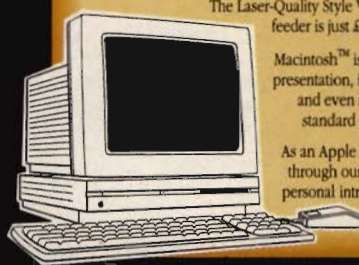
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JUMPING JACKSON - In a deluge of colour and sound save the earth from sadness and melancholy music
KRYPTON EGG - A classic Breakout game, 60 screens, separated by 6 combat sequences
LANCASTER - Your mission is to fly the classic WWII bomber on its dangerous raids over enemy territory
LOMBARD RAC RALLY - You drive your 300 bhp Sierra Cosworth through demanding stages of the rally
PURPLE SATURN DAY - Four arcade games, an exciting high speed trip into total cosmic 3D space
SAFARI GUNS - Live the African experience in an animal sanctuary, track the poachers & ivory traffickers
STIR CRAZY (Featuring Bobo) - Bobo & his inmates are planning a stunning trampoline jump prison escape
SKYCHASE - Airborne combat for every simulation fan. In this one or two player game, battle against your MIG flying adversary in your F-16 Falcon.
SKYFOX II - Skyfox II, the only ship fast enough to carry on the Skyfox legend. Fight to blow your federation enemies from the Galaxy, at speeds of 9000 kilometres/second!
STRIKE FORCE HARRIER - Puts you in the cockpit of one of Britains most exiting fighter aircraft. Multiple skill levels let you progress to become an ace pilot
TINTIN ON THE MOON - We've been captured by Colonel Jorgen and he's tring to scupper the moon mission. Come on Tintin, you're the only one who can save us, and be the first on the moon
TV SPORTS FOOTBALL - Strap on your helmet for American football simulation that looks like the real thing.
XENON 2 MEGABLAST - This time it's war! The Xenites are back and have thrown time itself into turmoil.

We reserve the right to substitute individual software titles or pack items should the need arise.

HARWOOD POWERPLAY PACKS

All our packs contain the new
Amiga A500 Plus.
(1.3 Amigas may still be available
to special order, please enquire.)

HARWOOD'S BRILLIANT 1Mb AMIGA 500 PLUS 'MEGA 31' GAMES PACK 2

That's right you get
the fantastic Amiga &
ALL THE EXTRAS
detailed in Harwoods
'Mega 31' Pack 1
AND you also get...

THE PHILIPS CM8833/II STEREO COLOUR MONITOR



Our monitor section on page 6
gives full details for your choice
of Philips Monitors & Monitor TVs



MONITOR PACK

2

PACK TWO

OR... YOU CAN CHOOSE
A PHILIPS MONITOR TV
AT NO EXTRA COST!
See page 6 for FULL
details of this remarkable
Fast Text Monitor TV

A SPECIAL PACK FROM HARWOOD'S
YOU SEE AND HEAR THOSE GAMES
WITH SUPERB CLARITY

£629.95
including
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BUY AN AMIGA
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Amiga & **ALL THE EXTRAS**
detailed in Harwoods 'Mega 31'
Games Pack 1 (far left) AND...
then you also get...

THE SUPERB PHILIPS CM8833/II STEREO COLOUR MONITOR

Our monitor section
on page 6 gives
full details for your
choice of Philips
Monitors & Monitor TVs



MONITOR AND
PRINTER PACK

3

PACK THREE

OR... YOU CAN CHOOSE
A PHILIPS MONITOR TV
AT NO EXTRA COST!
See page 6 for FULL
details of this remarkable
Fast Text Monitor TV



THE SUPER STAR
LC 200 COLOUR
PRINTER...

Featuring...
185/40 cps, Full Colour 9 Pin NLO Dot Matrix Printer
with a FREE Dust Cover and cable to your Amiga.
(See printer panel for details)

IF YOU WISH, REPLACE THE
LC200 WITH A CITIZEN SWIFT 8
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OR... IF YOU PREFER A 24PIN
COLOUR PRINTER, JUST CHOOSE
FROM OUR RANGE & ADD THE
DIFFERENCE IN PRICE BETWEEN
STARS LC200 & YOUR CHOICE.
(eg. Citizen 224, add just £50)

£829.95
including
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A TRULY PROFESSIONAL
PACKAGE SPECIFICALLY
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MINDED AMIGA USER.
THIS ONE SHOULD
FULFILL EVERY AREA
OF HOME BUSINESS
YOU'RE LIKELY TO NEED!

THE BUSINESS PACK FROM HARWOODS INCLUDES ALL THE FOLLOWING...

AMIGA 500 PLUS
WITH 1Mb. MEMORY

PHILIPS CM 8833/II
STEREO COLOUR MONITOR

See Monitor Panel on Page 6 for Details

STAR LC200 9 PIN NLO
FULL COLOUR PRINTER

See Printer Panel on Page 5 for Details

A HOST OF BUSINESS SOFTWARE & ACCESSORIES...
PEN PAL V1.3 (Word Processor)...1Mb.
SUPERBASE II PERSONAL (Database)
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A GREAT TEN GAMES PACKAGE

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ADD A CUMANA CAX 354 SECOND DRIVE
FOR JUST £50 TO HELP RUN THOSE
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WE MEAN BUSINESS AT A GREAT
PACKAGE PRICE OF JUST...

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A PHILIPS MONITOR TV
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(eg. Citizen 224, add just £50)

Datascram, Drivin' Force, Pipe Mania,
Dungeon Quest, Rock-N-Roll, E-Motion,
Tower of Babel, Skweek, RVF Honda,
and Grand Monster Slam.

HARWOODS LEARN & PLAY

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Get your children off to the right
computing start with this software
learn and play Compendium 6 pack...

KIDS TYPE, WEATHER WATCHER,
CALENDAR QUIZ, WORDS & NUMBERS,
GAME SET & MATCH,

WHAT IS IT? - WHERE IS IT?
Active, engaging young minds will love the fun
of these six entertaining but educational titles.
Your children probably won't even realise
that their 'lessons' have begun!!!

HOMEBASE
Ideal home storage system. Keep household lists,
student records etc. Easy to use 'push button' controls.

PRIMARY MATHS COURSE
Around 24 modules in this course from 3 yrs old
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24 module course. Teaching from the computer
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A GREAT EDUCATIONAL PACK
FOR YOUR CHILDREN AT A
FRACTION OF THE NORMAL COST



EDUCATION

PACK A

£69.95
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HARWOODS LEARN & PLAY

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GCSE examination level studies on your
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MICRO ENGLISH, MICRO FRENCH AND
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A set of three complete self-tuition courses to GCSE level
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adhere to the National Curriculum and were designed
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A fantastic word processor with all the tools you'll need
to create effective written work. Ideal for home work,
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automatically around graphics, even as you type!
Includes a built-in database and Forms Manager.

HOMEBASE
Homebase is the ideal information storage program for
things like household lists, student notes, and children's
educational projects. Inc. clearly labelled 'push button'
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EDUCATION

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Computers

ALFRETON DERBYSHIRE

The Closer you look,
The Better we look.

SOUND AND VISION

Words and Pictures

CDTV



IMAGINE, IF YOU CAN, THE CONCEPT OF A NEW, MORE POWERFUL AMIGA...

...WITH 1 MEGABYTE OF MEMORY, AND A COMPACT DISK DRIVE OF ALMOST INFINITE SIZE. A DISK DRIVE SO VAST, IT CAN STORE HUNDREDS OF MILLIONS OF DIGITS OF DATA. THIS DATA COULD BE, SPEECH, ANIMATED PICTURES, DIGITISED STEREO SOUND, COMPUTER IMAGES OR WHOLE ENCYCLOPAEDIAS.... AND MORE.

IMAGINE THIS, AND YOU CAN START TO GRASP THE CONCEPT OF CDTV.

THE INTEGRAL COMPACT DISK DRIVE, IS THE KEY TO THE POWER OF CDTV. ITS STORAGE CAPACITY IS EQUIVALENT TO AROUND A QUARTER OF A MILLION FULL PAGES OF TEXT. THIS WHEN INTEGRATED WITH THE 1 MB OF INTERNAL AMIGA CIRCUITRY, CREATES A SYSTEM, WHICH FROM A CD DISK, CAN GIVE YOU ACCESS TO AN UNIMAGINABLE SPECTRUM OF REAL WORLD IMAGES, NEVER SEEN COMBINED BEFORE. THESE VIVID IMAGES, WITH WORDS AND SOUNDS, GIVE YOU A WHOLE NEW DIMENSION IN HOME EDUCATION, ENTERTAINMENT & INFORMATION TECHNOLOGY. AND... DON'T FORGET, THAT CDTV CAN PLAY IN SUPERB QUALITY, ANY NORMAL AUDIO MUSIC CD, AND IT CAN ALSO PLAY THE NEW CD+G DISKS, WHICH GIVE DIGITAL SOUND AND ON SCREEN GRAPHICS.

ON CD DISKS NOW AVAILABLE, THERE ARE EDUCATIONAL PACKAGES, ENCYCLOPAEDIAS PACKED WITH REFERENCE INFORMATION, STUNNING GAMES, MUSIC SYSTEMS AND MANY OTHER NEW AND VARIED SUBJECTS, INCLUDING WHOLE WORLD ATLAS OR EVEN THE COMPLETE WORKS OF SHAKESPEARE, EACH ON ONE CD DISK!!! CDTV - NOTHING LESS THAN REVOLUTIONARY

FREE CDTV STARTER PACK!!!

WHEN YOU CHOOSE YOUR CDTV FROM GORDON HARWOOD, NOT ONLY DO YOU GET OUR LEGENDARY SERVICE, BUT WE GIVE YOU A CDTV STARTER PACK, TO GET YOU EXPLORING YOUR NEW WORLD - STRAIGHTAWAY.

THIS INCLUDES A SUPERB SELECTION OF CD DISK TITLES INCLUDING THE WELCOME TUTORIAL & HUTCHINSONS ENCYCLOPAEDIA, PLUS ... FIVE GAMES, SHERLOCK HOLMES & THE HOUND OF THE BASKERVILLES, SIM CITY, CHAOS IN ANDROMEDA, A TOWN WITH NO NAME, AND THE ACCLAIMED LEMMINGS, WORTH IN TOTAL ALMOST £200.00.

IN ADDITION IS THE INFRARED REMOTE CONTROLLER, AND ALL THE HARDWARE NEEDED TO GET YOU CONNECTED.

ALL THIS FOR JUST £499.95

CDTV IS THE SAME SIZE AND STYLE AS MOST VIDEO RECORDERS, SO IT CAN SIT UNOBTRUSIVELY ABOVE OR BELOW YOUR HOME TV AND/OR HI-FI. AND WITH ITS INFRARED REMOTE CONTROLLER, IT CAN BE OPERATED FROM YOUR ARMCHAIR. BUT PERHAPS MOST IMPORTANTLY, IF YOU ARE A COMPUTER ENTHUSIAST, REMEMBER THAT INSIDE EVERY CDTV, IS AN AMIGA, JUST WAITING TO BE USED. SO LATER ON, YOU'LL BE ABLE TO BUY THE OPTIONAL KEYBOARD AND DISK DRIVE, TO GET INTO THE WORLD OF AMIGA COMPUTING. PRINTERS, DIGITISERS, GENLOCKS AND OTHER ACCESSORIES, CAN ALL BE CONNECTED TO GIVE ACCESS TO MANY OTHER EXCITING FACILITIES, AND ALSO MANY OF THE EXISTING SOFTWARE PACKAGES AVAILABLE FOR THE AMIGA COMPUTER. NEVER BEFORE HAS THERE BEEN SO MUCH POTENTIAL FROM ONE NEW STUNNING SYSTEM, PACKED WITH

TODAYS TECHNOLOGY.!

CALL IN AND SEE US FOR YOUR PERSONAL DEMONSTRATION, OR PHONE US FOR YOUR FREE DETAILED CDTV INFORMATION PACK.

CDTV ACCESSORIES Please call for latest availability.

CD 1220 KEYBOARD
CD 1252 MOUSE
CD 1200 TRACKBALL

AN 80 KEY QWERTY KEYBOARD £49.95
INFRARED MOUSE WITH BATTERY SAVER. £49.95
INFRARED TRACKBALL, WITH THE OPTION £79.95

CD 1400 CADDY
CD 1401 MEMORY CARD

OF DIRECT CONNECTION TO EXTEND BATTERY LIFE. £9.95
DUPLICATES FUNCTIONS OF 2 BUTTON MOUSE & £79.95
INCLUDES TWO 9 PIN PORTS FOR STD. JOYSTICKS FOR HOLDING CD WITHIN DRIVE

CD 1405 MEMORY CARD

64K OF MEMORY FOR STORING DATA OR AS A BOOKMARK FACILITY WITHIN CDTV £249.95
A LARGER PERSONAL RAM CARD

CBM FLOPPY DRIVE

CONTAINING 512K OF MEMORY FOR STORING DATA OR AS A BOOKMARK FACILITY WITHIN CDTV £99.95
3.5" FLOPPY DRIVE WITH 880K CAPACITY.

CD 1301 GENLOCK

MATCHING BLACK FINISH. SUPPLIED WITH AMIGA WORKBENCH DISKS/MANUALS etc. £149.95

ROCLITE 3.5" DRIVE

PAL BASED VIDEO INTERFACE CARD FOR SUPERIMPOSING CDTV IMAGES OVER A VIDEO SIGNAL PROVIDED BY ANY STANDARD VIDEO SOURCE CDTV COMPATIBLE AND STYLED IN £69.95
MATCHING BLACK.

Many Amiga Accessories & Peripherals (e.g. Printers, Disk Drives, Software etc.) are compatible with CDTV. Please phone us for compatibility information.

HARWOODS AMIGA PRO-GEN

NEW LOWER PRICE



PROFESSIONAL QUALITY
GENLOCK FOR COMPUTER
AND VIDEO MIXING, AT A
DOWN TO EARTH PRICE!!!

Please note the above photograph shows Spectracolor which has now been replaced by Photon Paint 2.0

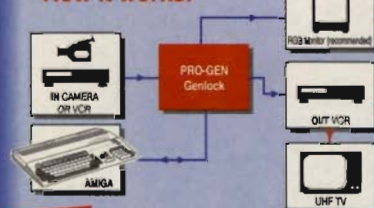
PRO-GEN Amiga Genlock

The Pro-gen AMIGA Genlock allows you to mix your Amiga display with any PAL video signal whether it is from a VCR, Laserdisk player or a Camcorder. In fact any item of video equipment which outputs a PAL composite video signal. Combined with the Amiga computer the Pro-Gen gives you the facilities of a special effects & video titling suite. Take your own films & give them a professional look by OVERLAYING TITLES or by SUPER IMPOSING YOUR OWN GRAPHICS created in packages like Photon Paint 2.0 or Deluxe Paint. Pro-Gen is supplied with micro illusions superb Photon Paint 2.0 package.

FREE Photon Paint 2.0 Software

A powerful Lo-and-Hi resolution hold and modify (HAM) paint program, with overscan (NTSC/PAL) and special effects for your Amiga Computer including all the following...
Contour Mapping: drapes a brush over a 3D "landscape". Pixel intensity values decide the peaks and valleys, while a specially developed ray-tracing algorithm maps the image precisely. Surface Mapping: around 3D objects, both geometric and free hand drawn. Luminance: sets the light source and intensity. Shadowing: automatically with control of size and offset. Brush Control: twist, tilt, resize, flip, rotate, bend, adjustable transparency, stretch etc. PLUS LOTS MORE! A great program allowing use of 4096 colours. Choice of horizontal page print, negatives, anti-aliasing, dithered print, adjustable brightness etc.

How it works:



STOP PRESS

PRO-GEN... NOW INCLUDES A VERY VERSATILE MULTI COMPONENT VIDEO TO GENLOCK CONNECTING CABLE KIT. THIS ALLOWS PRO-GEN TO BE USED STRAIGHTAWAY WITH MOST POPULAR VIDEO EQUIPMENT, WITHOUT THE NEED TO HUNT DOWN THE CORRECT CONNECTING CABLES. THIS KIT CAN ALSO BE USED TO CONNECT IN OTHER WAYS... eg. VCR to VCR etc. A KIT TO START YOU OFF RIGHT FROM THE MOMENT YOU OPEN THE BOX!!!

NEW
LOWER
PRICE

PRO-GEN with Photon Paint 2.0 **ONLY £99.95**

Mode Switch-box for Genlocks

Features Include

- Compatible With The Pro-Gen And Rendale 8802
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Cumana CAX354 3.5" External 2nd Disk Drive.

- ★ Features Include
- ★ Long connecting cable
- ★ 1Mb. (880K Formatted) Capacity
- ★ Enable/Disable Switch,
- ★ Throughport
- ★ Access Light
- ★ Compatible with Amiga500/1000 1500/2000/3000 and CDTV

NOW SUPPLIED WITH A FREE 3.5" Disk Head Cleaner to maintain your new drive in 'tip-top' condition.

£57.95



GVP 52-420Mb HARD DISK DRIVES WITH MEMORY EXPANSIONS OF UP TO 8Mb.

- ★ Capacities of 52 to 420Mb
- ★ Connects to sidecar bus on L/H side of A500/A500 Plus
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- ★ Sockets for up to 8 Mb of RAM
- ★ SCSI Port allows up to 7 other devices to be connected
- ★ Supplied with easy to use software
- ★ 2 Year Warranty ★ Dedicated PSU
- ★ Mini slot for future expansion
- ★ PC-AT Emulator planned to be available for 1992

GVP AMIGA A500 HARD DRIVES

RAM SIZE	CAPACITY		
	52Mb.	120Mb.	240Mb.
0Mb.	£349.95	£519.95	£729.95
2Mb.	£419.95	£589.95	£799.95
4Mb.	£489.95	£659.95	£869.95
8Mb.	£629.95	£799.95	£999.95

GVP AMIGA 1500/2000 HARD DRIVES

RAM SIZE	CAPACITY			
	52Mb.	120Mb.	240Mb.	420Mb.
0Mb.	£289.95	£409.95	£639.95	£1169.95
2Mb.	£359.95	£479.95	£709.95	£1239.95
4Mb.	£429.95	£549.95	£779.95	£1309.95
8Mb.	£559.95	£679.95	£899.95	£1429.95

CALL FOR MEMORY UPGRADE PRICES IF YOU ALREADY ARE A GVP OWNER!

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- MICRO MATHS - 24 easy to use programs for GCSE ('O' Level) revision or self tuition **£18.95**
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ADD MORE POWER TO YOUR AMIGA 500 PLUS WITH A FULL 1Mb. MEMORY UPGRADE!!!

- ★ 1Mb. RAM expansion for the Amiga 500 Plus
- ★ Gives a total of 2Mb. of RAM
- ★ Easily fitted without any dismantling in the trapdoor expansion slot underneath Amiga. DOESN'T invalidate your warranty!
- ★ Low power consumption ★ 2 Yr Guarantee!

A GREAT NEW OFFER FROM HARWOODS

Only... **£44.95**

0.5 Mb PRO-RAM

- ★ Compatible with Amiga A500 and 500 Plus
- ★ Gives A500 a total of 1Mb Memory + Clock
- ★ Gives 500 Plus a total of 1.5Mb Memory

Only... **£29.95**

AMIGA SOFTWARE

- Music-X:** The ultimate software for professional MIDI sequencing. The software includes a configurable librarian and a synthesiser patch editor. All you need to recreate a song can be recalled from one performance file including sequences, MIDI routing, sync setup, keyboard maps & synthesiser or drum machine patch libraries. **NEW LOW PRICES - £49.95 or just £69.95 with midi-interface!**
- MIDI INTERFACE (5 Port):** In, Out, Through plus 2 switchable thru/out. inc. 2 cables. **£24.95**
- AMOS:** AMOS allows you to access the power of the Amiga with ease. 500 different commands make AMOS a sophisticated development language. The AMOS animation language allows you to create complex animation sequences. 300 page manual and over 80 example programs **£49.95**
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- Lattice C:** An ideal tool for the C programmer whether experienced or a novice. The best way to create applications for the Amiga. Fully supports Motorola chipset. Nearly 300 functions optimised to help the user write the tightest possible code. Includes screen editor. Most Amiga C books are based around lattice. (Requires either 2 floppy drives OR a hard disk drive) **£199.95**
- Deluxe Paint IV:** Latest version of the Amigas first, and still the best, paint and animation package, now including HAM mode. (1 Mb. minimum memory or more recommended) **£79.95**
- Vidi, The Complete Colour Solution:** Vidi with RGB Splitter, Frame Grabber & Digitiser. Grabs moving colour video into 16 grey scale frames (up to 16 frames in 1Mb. Amiga) and digitises from still colour video source in up to 4096 colours in less than 1 second! Requires home VCR or video camera for grabbing. Requires video camera or VCR with perfect pause for digitising. Now comes with Photon Paint 2.0 ABSOLUTELY FREE OF CHARGE!!! **£149.95**
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BUY ALL THREE AMOS PROGRAMS FOR JUST **£89.95**

Pen Pal V.1.3

WORD PROCESSOR/DATABASE
With Pen Pal you can mix text, 4096 colour graphics & data in ways no other w/p can! "It's handling of graphics is unsurpassed: Pen Pal is the only word processor I tested that will automatically wrap text round graphics."

Amiga World, July '90



£79.95

PEN PAL complete WITH 512K Amiga RAM Expansion only...£99.95!

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Computers

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The Better we look.

THE ABOVE IS JUST A SMALL SAMPLE FROM OUR EXTENSIVE RANGE OF THOUSANDS OF SERIOUS, EDUCATION AND RECREATION TITLES. WE CAN'T LIST THEM ALL HERE SO PLEASE CALL US IF YOU CAN'T SEE THE PROGRAM YOU REQUIRE, IT'S PROBABLY IN STOCK!

PRINTERS

NEW FREE ACCESSORIES

All printers in our range include a standard Centronics/Parallel Port for direct connection to Amiga, PC's, Atari ST's, Archimedes etc.

We supply a connection cable to YOUR computer plus a Quality Dust Cover with ALL Dot Matrix Printers

When you are comparing prices to others make sure that the same essential items are included eg. Printer Lead, Dust Cover, Postage and VAT etc.

GORDON HARWOOD PRINTER STARTER PACK

ALL our Dot Matrix Printers are supplied complete with...
200 Sheets of Continuous Printer Paper
100 Useful Self Adhesive Continuous Labels
Amiga Printer Drivers Disk

CITIZEN 120D+ 9 PIN MONO - Up to 120/25 cps

Very reliable low cost printer with interchangeable interfaces for Centronics/RS232/serial type (C64 etc.) Full 2 Year manufacturers warranty

NEW FASTER STAR LC20 9 PIN MONO - Up to 150/38 cps

Replacement for our most popular Mono Dot-Matrix at a super low price

Multiple font options easily accessible from front panel Simultaneous, continuous and single sheet stationery
Excellent paper handling facilities 240 x 240 dpi Graphics

STAR LC200 9 PIN COLOUR PRINTER - 185/40 cps

This is the one in our packs!

80 Column Dot Matrix Micro paper feed, Max. paper width 11.7"
240 dpi - 9 Pin COLOUR Supplied with colour & mono ribbons
16K Buffer, 8 Resident Fonts Paper park with auto single sheet loading
Push/pull tractor & rear/bottom feeds Programmable from front panel.
Reverse paper feeds 12 month warranty

CITIZEN SWIFT 9 PIN COLOUR - 160/40cps

New super high spec 9Pin colour printer

8K Buffer 4 Fonts 240 x 240 dpi Colour Graphics
Push and pull tractor built-in Best text quality in our 9Pin range
Feed for labels/multi part stationery 2 Year Citizen warranty

STAR SJ48 INKJET PRINTER

New super high quality bubble ink jet printer

64 Nozzle ink jet Large 28K Buffer
Emulates Epson LQ and IBM 360 x 360 dpi near laser print quality
Proprietary for full compatibility Optional Ni-Cad battery for mains free operation
Complete with AC adaptor

STAR LC24/200 24 PIN MONO - 220/55 cps

Mono version of LC24/200 Colour, same spec except for a smaller 7K buffer

STAR LC24/200 24 PIN COLOUR - 220/55 cps

Colour version of the LC24-200 Mono.

80 Column Dot Matrix Paper park with auto single sheet loading
360 dpi - 24 Pin MONO Micro paper feed, Max. paper width 11.7"
30K Buffer (expandable) Supplied with mono ribbon
10 Resident Fonts Faster than the old LC24-10
Front Panel Pitch Selection Extra font cartridges available
Push/pull tractor & rear/bottom feeds Program from front panel, No DIP switches
Reverse paper feed 12 month warranty

NEW 24 Pin CITIZEN 224 COLOUR - 160/53 cps

Brand New, lowest cost colour 24 Pin printer, anywhere!

80 Column Dot Matrix with 4 Fonts Push & pull tractor feeds
360 dpi - 24 Pin COLOUR Complete paper parking facilities.
8K Buffer expandable to 32K Supplied with mono & colour ribbons
Easy to use front panel controls Full 2 Year Citizen Warranty

NEW 24 Pin CITIZEN SWIFT 24E COLOUR - 180/60 cps

Brand New, superb specification colour 24 Pin printer.

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360 dpi - 24 Pin COLOUR Complete paper parking facilities.
8K Buffer expandable to 32K Supplied with mono & colour ribbons
Easy to use LCD panel controls Full 2 Year Citizen Warranty

NEW FASTER STAR XB 24 PIN COLOUR RANGE XB24-200 & XB24-250 - 275/80 cps

These NEW top of the range Stars replace the XB24/10 & XB24/15, & offer the best possible quality dot matrix printing

Exceptional print quality Buffer: 29K(XB24/200) & 76K (XB 24/250)
4 x 48Pin super letter quality fonts 360 x 360 dpi Colour Graphics
14 x 24Pin near letter quality fonts 12mths on-site warranty (UK Mainland)

HEWLETT PACKARD PAINTJET COLOUR A4 INKJET

Our best quality full colour printer at a realistic price

Parallel/Centronics or Serial RS232 I/F (specify with order, MAC option available)
For presentation graphics/DTP, CAD and technical/scientific applications
A full page of colour graphics in 4 minutes (typical)
Non impact printing, Will print transparencies
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The latest Amiga, however, has arrived amid a great deal of confusion, leading to a lot of market speculation on the machine's role and position in the family.

The first possibility has been thoroughly trashed by Commodore, who vehemently deny rumours that the A500 is living on borrowed time. As long as one believes what Commodore say, then, the A600 cannot be viewed as a replacement for the most popular Amiga of all.

Treated as a straight addition to the range, the A600 assumes a decidedly cuckoo-ish air. It is incompatible with the vast majority of third-party peripherals, offers no more memory or basic power than an A500 Plus, and sells for the same amount.

However, as the 20Mb hard drive version will be price cut by most retailers to around £470, the A600-HD offers far greater value for money than an equivalent A500 system, so how can it fit in when it undercuts the existing mainstay of Amiga sales?

The third option – a new line of Amigas, heralded by the arrival of the A600 – is the one which causes Commodore employees to become suspiciously cagey. See this month's news column for an *Amiga Computing* exclusive on the next Amigas on the launch pad.

Putting aside the market view of the A600, it has to be admitted that the

The existing paths to hard drive ownership are strewn with the burned-out shells of wallets gasping at the spontaneous combustion of wads of tenners. In short, hard drives are more expensive than they need be, and this has restricted the Amiga's use as a low-cost serious tool.

With the imminent release of the A600-HD, that situation is set to change. Prospective owners now have the choice of going straight to a hard drive machine for £499, and more likely significantly less as the retailers begin to slash RRP's, making the equivalent A500 Plus setup redundant – it would set you back over £600.

The A600's external appearance has often been compared to the Commodore 64, though it is in fact more akin to the old Oric Atmos.

The numeric keypad has gone, resulting in dimensions of 34 x 24cm as opposed to the A500's 47 x 34cm, and the machine has an attractive wedge-like

Just about all software which is compatible with the A500 Plus will run on the A600. The only programs which will have difficulty will be those which depend on the numeric keypad, which is non-existent on the new machine.

Some games – mostly flight sims – will suffer because of this, and the odd DTP or spreadsheet package user will find certain keyboard shortcuts are no longer available, but on the whole the problem is not a major one.

One other potential problem is that the combination of Kickstart 2.04 and a hard drive will result in the usable memory on boot-up being restricted to around 700k. This means that games which require 1Mb on A500's will not load from the hard drive unless a RAM expansion has been fitted.

look to it. In fact, once the design started to sink in, I was reduced to walking up to the A600 at regular intervals for a quick cuddle. It's just tooooo cute.

Inside, Commodore have really rung the changes. Every chip save the Kickstart chip is mounted directly onto the motherboard, following Commodore's avowed intention to use surface mount technology (SMT) on all Amigas, and most components have been shrunk in size.

The result is a clean compact layout with little room for expansion but even less for breakdowns.

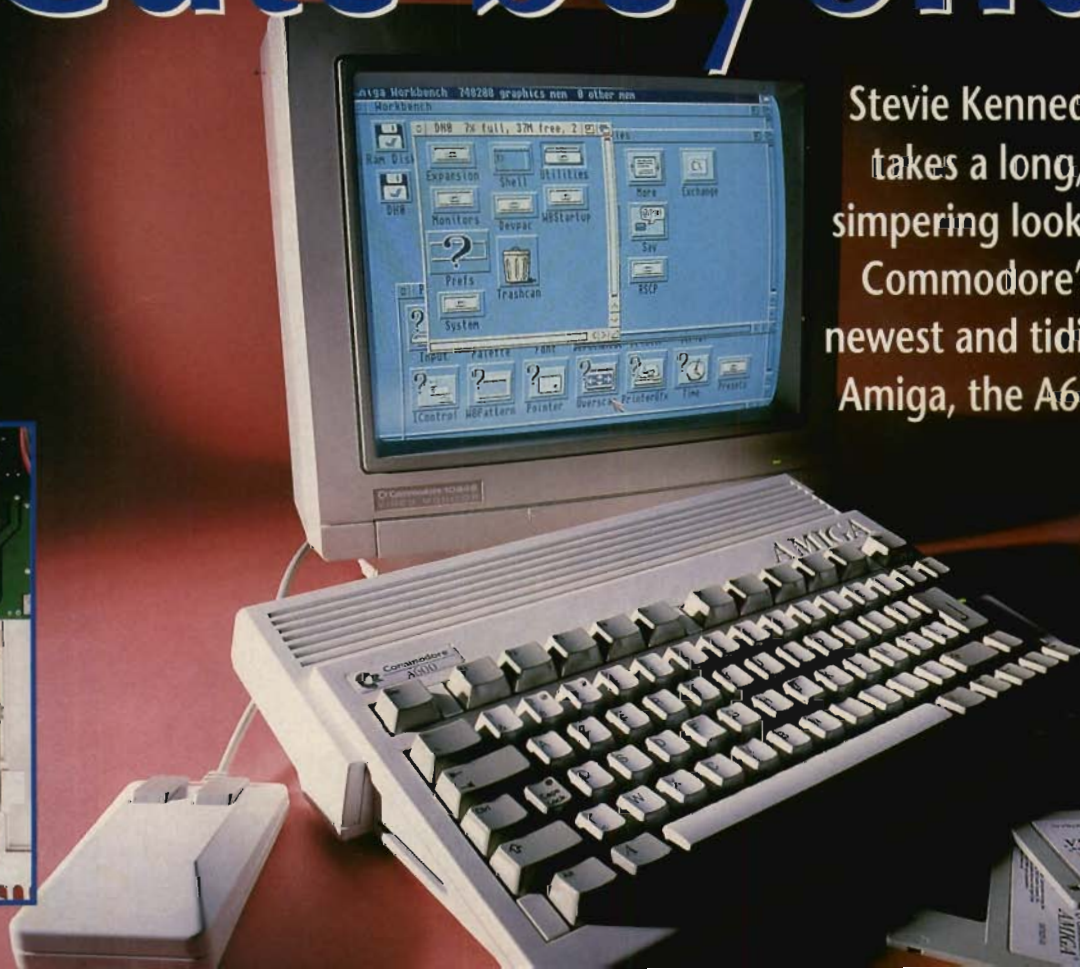
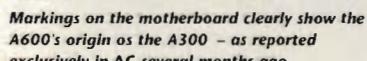
Commodore are so confident in the

reliability of SMT design that every A6000 will be shipped with on-site maintenance thrown in. This means that if a machine dies for some reason, the user need only call the Commodore national repair centre to have an engineer dispatched on an emergency mission.

The response time stipulated by Commodore is four days, a great deal faster than present repair times.

Serious faults will still result in the return of an Amiga to base for radical surgery, but the old problems of keyboard lock-up and floppy drive failure should be fixable in your own front room.

**Stevie Kennedy
takes a long,
simpering look at
Commodore's
newest and tidiest
Amiga, the A600**



The new keyboard design should help considerably in this respect, as it is now built in to the upper casing and attached to the motherboard via a much more tenacious connector than of old.

The internal floppy could be a bit of a problem, as it is secured with a single bolt and tends to sit on its own ribbon cable at a rakish angle. Given the cramped wedge design, this is unavoidable, but I would have liked to have seen a more solid mounting for the component which takes the most pounding at its owner's hands.

Mounting

What astonished me most when I pried the top off our A600 was the hard drive mounting. The internal hard drives used in all A600s (including the 40Mb version we had supplied by Power Computing) are extremely light, thanks to their origins in the weight-conscious portables market, and smaller than the average cigarette packet.

They are, however, still hard drives, and need to be mounted securely. At first sight, the A600 mounting seems inadequate, as the hard drive sits on a saddle supported only by four legs loosely inserted through holes in the mother-

board and a protruding arm designed to press against the inside of the upper casing.

In practice, however, the whole concoction is pretty safe, as after several minutes of thorough shaking it continued to auto-boot without problem.

The rear of the machine is fairly standard. All main external device ports are arranged in a similar fashion to the A500, with the addition of an RF port from the built-in TV modulator, and the mouse and joystick ports have found their way (at last) to a more sensible placing on the right-hand side of the casing.

My only niggle is with the placing of the video port, which is more centrally located than it used to be. The narrow casing means your A600 doesn't overlap any monitor which may be sitting behind it, so the monitor cable will have to run below the monitor, unless you put a fairly tight bend into it.

This aside, the layout is quite neat and the more accessible mouse/joystick ports are sure to be popular with those who switch to the A600 from other Amigas.

The built-in modulator will delight anyone who has struggled with the hideous AS20 modulator used on the A500.

The keyboard has the same typing

Hardware compatibility

From the pre-launch information we've been supplying over the past couple of months, most of our readers will be aware that the A600 has a completely redesigned trapdoor slot and no DMA port.

This raises the spectre of hardware incompatibility and, unlike in the case of the A500 Plus software scare, I can only confirm your worst fears.

No existing Amiga trapdoor peripheral will be compatible with the A600 unless some sort of adaptor can be devised, and as there is no DMA port (the large slot you find on the A500's left hand-side), no existing slot-in hard drive or digitiser will work either.

Happily, this should be less of a problem than it would have been on the A500 as the new machine accepts internal hard drives and has a 4Mb capacity memory card slot on its left-hand side.

Any attempt to accelerate the A600, however, seems doomed to failure. Surface technology means that the usual piggy-back style A500 accelerator cards will not fit, and neither will any other piggy backer, such as Avidio or the ICD flicker fixer, both of which fit in the old Denise socket.

The light at the end of the hardware tunnel seems to be the 40-pin trapdoor edge connector, which is suspiciously well-endowed with connections to be a simple memory card slot.

If DMA access is possible through the trapdoor, and Commodore have not yet released enough technical information for us to judge this, though it seems likely, you can rest assured that third-party manufacturers will find a way to shove more and more into even this supposedly unexpandable Amiga.

action as the A500 keyboard, and the designers have been inspired enough to keep the cursor cluster in its traditional inverted "T" formation, unlike the dreadful Macintosh Classic keyboard, which makes cursor control a nightmarish experience.

For the moment, most models floating around are German imports with German keyboards, but the British models should be no different.

The machine's performance is identical in most respects to the A500 Plus in terms of speed, but the A600 begins to trounce the A500 Plus when purchased in its hard drive configuration.

A built-in IDE hard drive interface coupled with – at first – 20Mb hard drive, gives the first time user more storage space and functionality than any other low-end Amiga owner has ever enjoyed.

Our review machine was fitted with a 40Mb IBM hard drive, a fairly standard piece of equipment which should be pretty close to Commodore's 20Mb version. In tests, data transfer was rated at about 443k per second – a rather average performance – but not slow enough to restrict serious use and still vastly superior to any floppy.

The A600-HD's most pleasurable advantage will be its capacity to

hold one's favourite wordprocessor, database, spreadsheet, and a few games (Microprose Golf would be my own first installation task) in one compact little box that can fit in a briefcase, schoolbag, or rucksack.

The built-in TV modulator will mean the only obstacle to completely luggable Amiga computing will be the power supply. This has been retained in its ludicrous "brick" casing, a decision I find remarkable from a company whose TV ads will purportedly concentrate on the A600's portability.

Smaller

We can only hope that a third-party manufacturer can produce a much smaller, more transportable power supply.

Although launched in the middle of the summer quiet period, the A600-HD is likely to be a huge success with enthusiasts and should steal the bulk of the hobbyist market this Christmas.

Pure games players may settle for the A500 Plus, which could see even more vicious price cutting as a result of the A600 launch, but with sales of the new machine hopefully stimulating software houses to produce more hard drive-installable games, this could be a shortsighted decision.



The A600 is a product of Commodore-Amiga Inc.

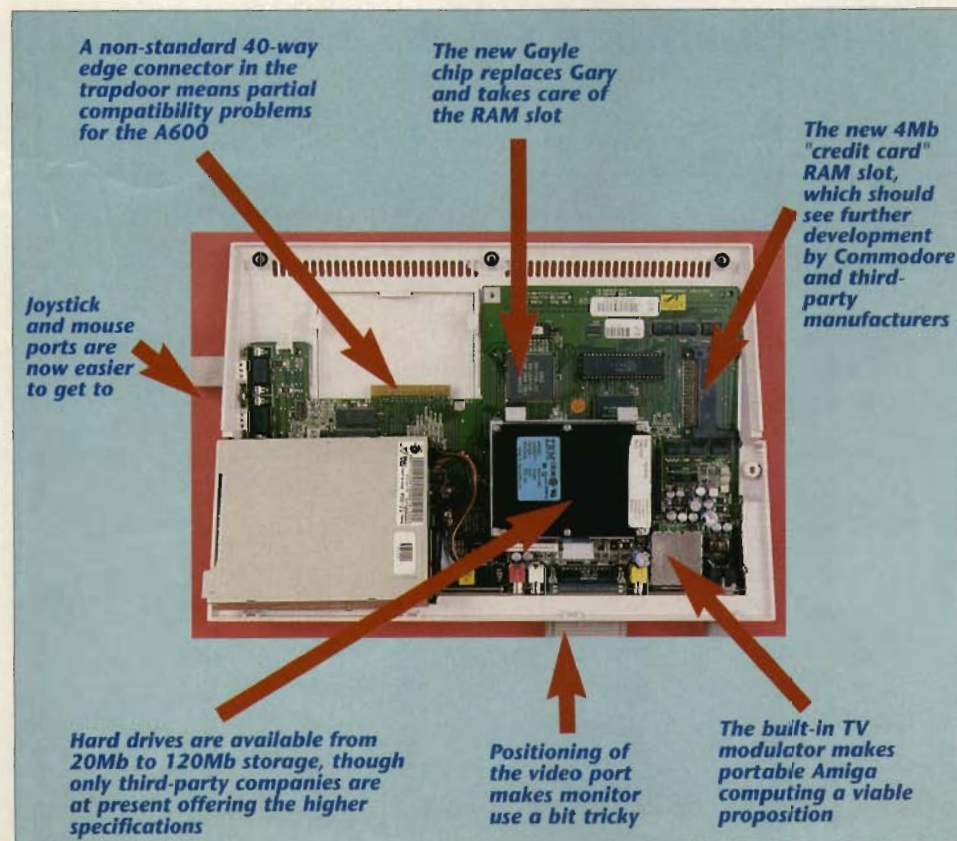
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Average Street Price	£569	£699	£699*	£699
Official RRP	£945	£1,179	£1,099	£1,195
Maximum resolution in dots per inch	300x300	300x300	300x300	400x400
Windows 3 Driver @ 400 dpi (May)	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	6ppm
Straight Paper Path	YES	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES
Full A4/300 dpi graphics with standard RAM	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	<15 secs
Document Description Language included	-	-	-	YES
Flash ROM	-	-	-	YES
Upgradable Firmware	-	-	-	YES
IC Card Slot	YES	-	-	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	8
Resident Bit-Mapped Fonts	11	14	14	14
AGFA Intellifont Scalable Font Technology	-	YES	-	YES
HP LaserJet III Emulation included	-	YES	YES	YES
EPSON FX Emulation included	YES	-	YES	YES
IBM ProPrinter Emulation included	-	-	YES	YES
Standard Tray Capacity	100	70	100	100
Protective cover on standard tray	YES	-	YES	YES
Cost per copy*	1.65p	2.00p	1.71p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-157
Able to print on OHP Film	YES	YES	YES	YES
Able to print on card (157gsm - Manual Feed)	YES	-	-	YES
Auto Sensing on Parallel and Serial ports	YES	-	-	YES
Standby - Noise Level	<40dB	31.7dB	<35dB	<38dB
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Electronic Arts – £89.95

DPaint is something of an institution, having been around since the Amiga was made, but it's not just that which makes it good. As well as being easy to use, it's also now more powerful than it's ever been.

It slipped for a while when other programs had animation and it was paint only. But DPaint came back with v3 which was not only an animation program, but one of the most powerful around.

The best thing about it was that it could work like a conventional animator would work, but it had advantages over the standard pen and paper approach – like the way you can draw something and flip back and forth through the pages to make sure it worked.

But it couldn't handle HAM, the most colourful Amiga graphics mode, which was a big minus as at least two other programs had HAM and one of those, a forerunner of Spectracolor, even had HAM animation.

So when the program was upgraded to the current revision, it had both HAM and HAM animation, ensuring its future for some time to come.

I've always used DPaint for single graphics, and for that (no matter what has come along since) nothing quite does the trick like DPaint for actually creating graphics, no matter what is used to move those graphics around.

But since it's featured animation, it's always been installed on hard disk. As well as improving the speed and adding a HAM mode. You still can't whack the interface, even in its new 3D incarnation. But the animation capability of the program has increased a skipload.

In the past, certain lesser programs had a "blueing" facility, meaning that you could see the previous screen under the current one. Alignment in animation programs is everything, as this is how you get life into your animations.

The new DPaint has the facility to put

your "cells" on a lightbox. In reality, a lightbox is a box with a translucent top and lights inside. If you put a slide or a cell on top of it you can see the detail and colour much better, and if you put a number of cells together you can see through them.

Anyway, you get the gist. DPaint has this facility, whereby you select this mode and a number of previous screens can be seen "behind" the current screen.

This adds to the increase in speed, plus the powerful graphics processing like translucency, tinting and stencilling (something that no other program does well), and you've got the biggest and best graphics origination and animation engine available.

Like the Terminator, DPaint just keeps going until it gets there.

It's odd, isn't it? Many people who bought an Amiga did so originally because of a number of classic animated demos. That's not putting the Amiga or the people who bought it down, because let's face it, those demos must have been damned good to make someone part with several hundred quid just to find out more.

It must have been quite frustrating for those first buyers to discover that although the Amiga was powerful enough to show animations with great stereo sound, the way these animations actually got into the machine in the first place was actually far from simple.

The Ami did have one big plus – a standard for graphics and animation, IFF ANIM and ILBM – but had few ways to manipulate them.

But this was soon to change, and the people who wanted so badly to create great animations could actually do so, finally. Quality animation products began to emerge about three to four years ago, and they've been growing in complexity and powerful features right up to the present day. Now anyone can produce the kind of animation which would sell Amigas.

You can produce animation which is exactly like the cartoons you see on TV, even produced in the same way in fact, or you can create totally freeform computer art.

Either way, you can make art on the Amiga which you wouldn't be able to do in any other way.

Let's dip a toe into the world of Amiga animation, and see

Ease of use	●●●●●●●●●●
Graphics handling	●●●●●●●●●●
Compatibility	●●●●●●●●●●
Value for money	●●●●●●●●●●
Overall	●●●●●●●●●●



Great movers

Amiga artist Phil South checks out the best in Amiga 2D animation programs, and asks "is there life after DPaint?"

what colour it comes out. The animation programs for Amiga have altered over the years, but some names stay there all the time, with just a slightly bigger number on the end each time.

Other programs transform themselves beyond recognition and then change their names, but it remains that some of the major players in Amiga Animation have been there since the Amiga was called Lorraine and only owned by a handful of people in California.

Disney Animation Studio

Disney Software – £79.95

Although something of a young upstart in the animation stakes, Disney have a reputation to keep up after all, so they tried very hard to bring out something a little different.

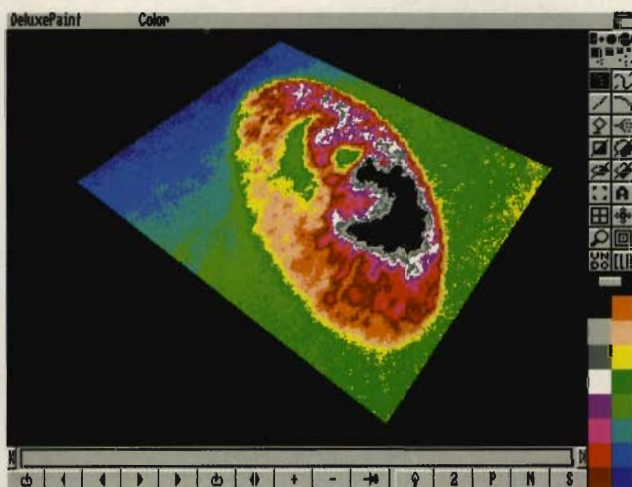
Although not as good a graphics program as DPaint, it scores very highly in the animation department, being the first such program, before even DPaint even, to feature blueing. It called it onion skin, meaning that – like the skin of an onion – it's trans-

parent. Although modelled on, and trying very hard to be better than, DPaint in its interface and layout, it had a few problems in its way.

The program is actually three programs, all run from a "supervisor program", so you draw and pencil test in one program, figure you exposure sheet, then export to another program to colour and sequence. It's all a bit cumbersome, although this doesn't detract from Animation Studio's charm.

It has two primary functions, which are different on the whole from the aims of a more broadly-based program. One is to teach animation, which it does very well.

Included in the program are a range of



The familiar face of the DPaint animation interface



An interface the old guard will know and love, showing a "dope sheet" listing all the frames in the anim

demonstration files contributed by Disney animators. They take you through all the things about animation that you really need to know, like in-betweening (sometimes called "tweening"), squash and stretch, arcs, paths of action, anticipation, bipedal walking and running cycles, and quadruped walking and running cycles.

The second use is to create animations with a soundtrack, as the exposure sheet allows you to synchronise a few sampled sounds with your animations. This would be good as a part of a demo, especially as the program has the ability to save IFF ANIM format.

Although Disney's Animation Studio isn't a great all-rounder, it's good enough at the things it does to warrant your attention, especially if you're a complete beginner and want to learn about animation in the most painless and interactive way possible.

Ease of use



Graphics handling



Compatibility



Value for money



Overall



From paper to pixels,
thanks to Take 2

Spectracolor

Oxxi Aegis - £65.99

Although not under this name, Spectracolor has been around a good long time. The writers of the program, Bazbosoft, are more famous for Photon Paint and Photon Paint 2, a very good HAM animation package of a few years back.

Spectracolor takes all the things they did for Photon Paint and expands them.

Although it can't handle normal modes as well as HAM, it has learned a lot from DPaint, and has obviously been listening to users gripes over the years. One thing they've kept which I think they ought to have lost is the menus that fly up the screen. Functional I guess, but very subtly annoying.

In spite of the fact that a lot of programs have come along which make use of similar tools to Spectracolor's features, it's still the original and best HAM animator. DPaint has the edge on speed, and fits into a smaller space in memory, but Spectracolor has some very neat features.

I particularly like the wrap on objects



DPaint style tape deck controls, now making their mark on Plus Counts Animation systems

feature, which takes a brush and maps it to one of seven predefined 3D shapes. But you can also construct your own 3D surface and wrap your brush on it.

Obviously you can animate your 3D wrapped shapes too - making for realistic flags etc, I guess - but this feature is fairly limited in what it can do for you animation in a 2D frame. Spectracolor is one of those programs which looks brilliant on the surface, and really packs in the features. But like so many programs, all that's needed from an animation program is not fluffy dice, woofers, tweeters and slimline salad dressing.

All you need is to animate, and anything that doesn't speed you to that cause is excess baggage.

Spectracolor has lots of features but it could do with only having about half of them, devoting the extra memory space for buffers to speed up HAM redraw.

It's very slow and needs more leg room, as the program and all its bits take up a lot of room. It will run for painting in 512k machines, but needs at least 1Mb for animation - that's a bare minimum, and if you intend doing any animation seriously, you'll need upwards of 2Mb.

DPaint suffers from similar restrictions, but then again DPaint has lower powered

resolution modes to fall back on.

Spectracolor is a very professional program, although I wouldn't trade up and use it myself.

Ease of use



Graphics handling



Compatibility



Value for money



Overall



Take 2

Rombo - £95

Now this is something new, and not just a new program, but a new type of program completely. Rather than being a muscular graphics package, Take 2 is rather like the best bits of Disney Animation Studio, but with a few subtle twists.

The program is supposed to be used as

Jargon buster

Anim

The IFF standard for animation, where a series of pictures are stored together as one file, compressed by only keeping note of the differences between frames.

Cell

A single picture drawn for the purposes of an animation on paper or clear plastic.

Digitiser

Device for taking the output of a video camera and storing it as a picture file in a computer.

Exposure sheet

List of shots for an animator to plan his animation down to the last frame.

Flipper

Also called Page Flipper. A program which takes a series of frames and flips through them as an animation.

Key frame

The extremes of an animation, usually drawn first, and then tweened to get the in-between frames.

Line Test

A test of an animation where the pencil sketches are animated using a video camera and a stop frame video.

Ones, Twos and Threes

Each cell is shot once, twice or thrice to alter the timing, or save film.

Peg Bar

A couple of pegs in the animator drawing board and camera setup to ensure correct registration of the cells.

RGB Splitter

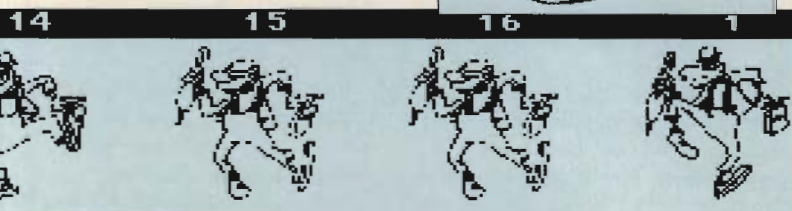
A device to separate the red, green and blue elements of a picture digitised from a video source.

Tweening

The process of drawing - or computing - the frames between key frames of an animation.

VCR Controls

On-screen buttons in an animation program which loosely correspond to the controls on a VCR.



The take 2 storyboard showing the "twens" within your would-be anim



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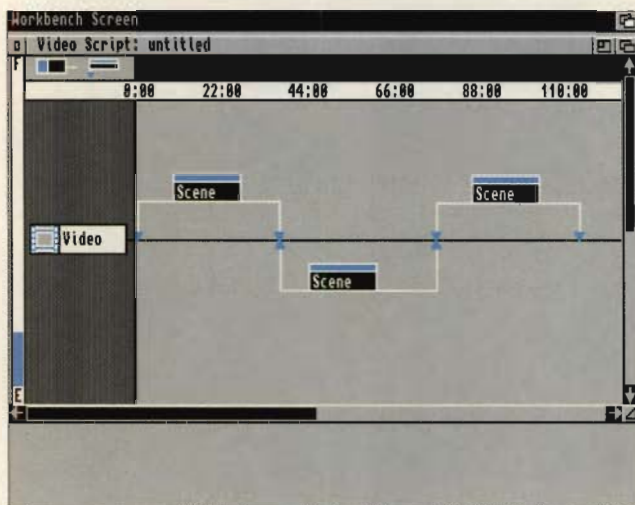
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Automatic video scripting makes the compilation process simple

a traditional animation suite, along with a camera and digitiser. The frames are drawn as cells or sheets of paper and registered on a peg board, just like real animation. Each frame is then "photographed" by the digitiser and stored onto disk.

Once on disk, the animation can be loaded into Take 2 for playback, but this isn't just a simple animation player. You can sequence the frames rather than merely play them back in a long line.

It's more random access than linear, meaning that you can build up a large animation from a very few frames, simply by running through a few frames over and over but in a number of different orders.

Say for example you have a sequence of 200 frames – possible if you have large amounts of memory. The first sequence could be the first 12 frames, with each frame being displayed for 2 x 25ths of a

second (simulating "twos"). The next series of frames is the last 25, also on twos. After that you can show the frames from 26 to 100.

Then the frames from 1 to 25 again. And again. Then the frames from 101 to 150. And then back to frames 1 to 25 again.

You don't have to be a rocket scientist to figure out that this is a very good idea, and has many professional applications. Line testers are expensive, and the fact that you can digitise and line test and re-sequence from within the very same program makes this a very competitively priced piece of kit.

Professional line testers can run into thousands of pounds. But far from being lofty pieces of kit which can only be used by dedicated professionals, Take 2 has another essential ingredient – it's fun.

But the addition of being able to use any Amiga graphics mode, including HAM, and the ability to load and use DPaint single pictures and anims puts it into a class of its own. A pro quality product which everyone can use.

a great idea, which unfortunately finds no real use outside of this program. But it is a lot of fun to play around with it. I'd file this one under "cute, but no lasting value".

impressive in what it can do in the way of manipulation. It's a computer animation system, not a traditional cell animation system.

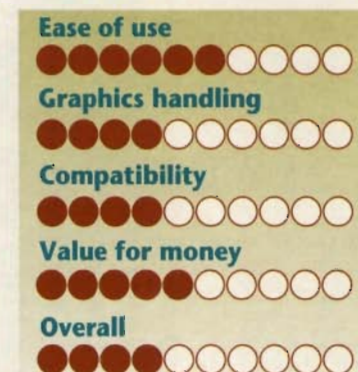
The most impressive part of the system is the way in which it sequences animations and sounds together, where the sequences aren't put together in scripts or using frames like other programs.

The scripts are formed by placing objects or icons on a time line, in much the same way as a lot of multimedia programs do today. In this respect it was way ahead of its time, like so much of the original EA software for the Amiga.

It's most remarkable for the length of animations that it can produce, as it relies on objects travelling across backgrounds, rather than whole frames.

This means that – provided you have enough room on the disk for your backgrounds and objects – your animations "videos", as they are called in the program, can be as long as you like.

The diversity of uses makes this an extraordinarily useful utility to add to your graphics program, rather than a standalone animation engine.



DeluxeVideo III

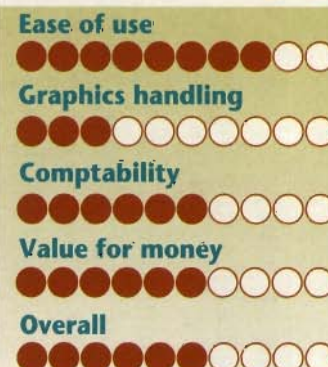
Electronic Arts – £99.99

Although getting on in years, DVideo III is still a valid contender for animation program of 1992. You might experience problems getting hold of a copy – it's not seen as a totally hot product on account of its age – but do try, as it's still one of the most flexible and complex animation systems you can buy.

If you have large quantities of RAM, your animations can be loaded from memory and be as smooth as you like.

Like Take 2 it's not a graphics creation engine but a graphics sequencer, like a Midi sequencer. You take your raw materials, the graphics, and move them around.

Unlike Take 2 however it's less traditionally based, and doesn't really lend itself to that style of animation. It is however very



Conclusion

1. DeluxePaint IV

The all-time supremo, still top of the heap after all these years.

2. Take 2

Newcomer, with superb sequencing ability, and the bonus of online digitising.

3. Disney Animation Studio

Great animation tutorials, and traditional animation methods for the die hard.

4. DeluxeVideo III

Advanced sequencer and multimedia program. More uses than a dead cat.

5. Spectracolor

HAM animation program for those with deep pockets for extra memory and hard disks.

6. Fantavision

Interesting curiosity, but no more than that.

The reason that good old DPaint got straight As is that it's always stayed on top by constantly upgrading. When the other programs on the market got more sophisticated, DPaint always came back for more.

It's interface was always the best and easiest to use, due entirely to Dan Silva's original program. Dan worked originally for Xerox at the Palo Alto Research Complex, where all the modern computer interfaces were originated, and at Lucasfilm.

So it's fitting that DPaint should be the easiest and most powerful program in the history of Amiga. When Dan got tired of upgrading DPaint, the task was taken over by Lee Taran, a Stanford AI major who lives with her husband in Palo Alto.

She did an awesome job of bringing the old favourite into the 90s. Although on occasions other programs have offered features which DPaint didn't have.

Contacts

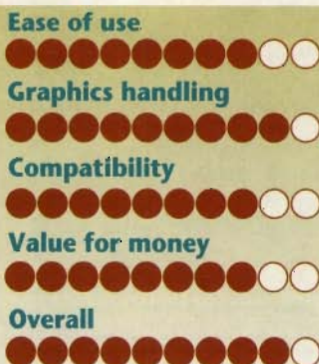
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Fantavision

Broderbund – £49.95

Although not fitting into the usual 2D animation categories very readily, this oddity is enough fun to warrant a mention at the very least.

The process used to great effect in this program, besides being able to use graphics generated in another program, is the tweening effect it uses to animate between different shapes. This is a unique effect, and



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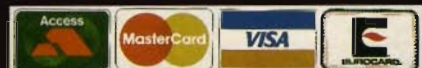
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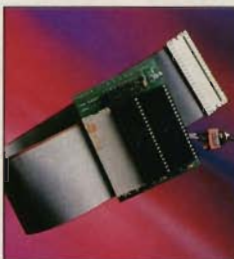
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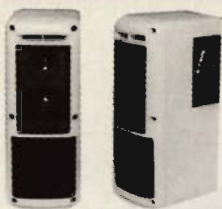
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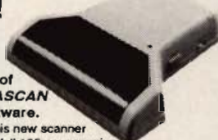
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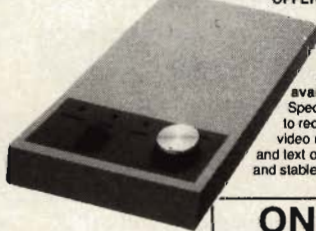
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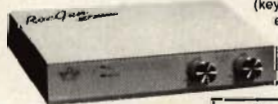
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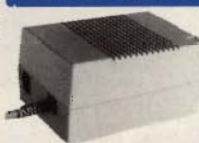
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The faces

● John Butler is a professional graphics artist working for Scope Picture productions in Glasgow, where he spends most of his time in front of a Quantel Paintbox.

In his own time, John produces video animations using Imagine v2.0, several of which have enjoyed commercial TV success.

● Henri Buijko is a founder member of Alternative Image, a leading professional Amiga graphics production company, and has the enviable job of producing renders, animations, and videotaped animations using a beefy Amiga and a copy of Real 3D. Life's hard, isn't it Henri?

Tracing tips

Imagine 2.0

Tipster: John Butler

Imagine 2.0 is an incredibly powerful program and inevitably with this power comes a fairly awesome level of complexity. I can't hope to simplify all aspects of an animation system that requires a 300-page manual, so I'll try to cover two aspects of Imagine – the Preferences page, which I consider essential in order to enjoy and exploit Imagine fully, and the morphing capabilities which set it apart from the rest of the 3D pack.

The Preferences section is important aesthetically and functionally as, straight from the box, Imagine 2.0 is one ugly program. The startup page, in particular, looks awful. However one of Imagine's greatest strengths is that so much of it can be tailored to the individual's requirements.

To rid yourself of the startup screen, simply replace the Imagine.pic in the Imagine directory with one of your own choosing. All you have to ensure is that the picture is in 16-colour, hi-res, interlaced 640 x 512 format and that it is named "imagine.pic" – otherwise your program won't boot.

If disk space or startup time is at a premium, then simply choose a blank white screen in this format. On actually entering

the program, you are presented with an eye-wateringly ill-chosen combination of garish colours and drop-shadow fonts that will have you reaching for the aspirins in no time.

Thankfully, the Prefs editor is there to save your sight and you should make an early stop there.

This editor allows you, among many other options, to configure your workscreen colours to your liking. Each option is determined by a hexadecimal number (this is a system where the double digit numbers 10 to 15 are replaced by the letters A to F) but if you find this a little abstract to work with you can change values by using the colour swatch at the bottom of the screen.

As each screen colour is used for several tasks, the trick is to find the right combinations. The screens I use are a particularly soothing selection of greys, white and turquoise and while they may not suit every user, I think they provide a pretty fair starting



John's interpretation

point. Once you've changed these values, make sure to get used to the new Select and Pick mode colours in the various editors, as they can be a little disorientating at first.

The next feature of Imagine's Prefs page is its ability to set up the ten function keys as hot keys and the creation of "user gadgets" which are Unix-style screen buttons.

These allow you to access menu com-

mands at a key stroke or mouse click. The best way to build up a work environment is to do so gradually, as you begin to realise which menu functions you use frequently.

These will be the ones that will benefit most from assignment to a user gadget or function key. Make a note of the menu bar number, the menu option number and the submenu option number.

Thus for the Detail editor's Transformation function you will see that it is in the third menu bar, tenth menu option, no submenu option. This trans-

Two leading Amiga ray tracing experts offer the benefits of their accumulated experience in the Amiga's top two graphics packages, Imagine 2.0 and Real 3D 1.4

lates as 3A0 in the Preferences editor's hex format.

Enter the Prefs page, click on the User Gadgets button in the top right-hand corner, click on the "new" line and then enter "trans" and the hex number 3A0 in the slots provided.

Save the changes, re-enter the detail editor and, lo, a button will have appeared at the bottom of the screen, embossed with the legend "trans". Click on this and the all-important Transformation requester will appear.

Again, I suggest adding these slowly, perhaps one or two a session, getting used to them before adding more. Once you have developed a comfortable set of function keys and user gadgets you will find yourself flying round the program.

Once you have set up your screens and so on you might wish to explore Imagine's talent for "morphing". This is the trademark of 3D graphics and when performed smoothly it's a very impressive trick indeed.

Imagine, in common with every 3D program, has plenty of ways of jerking your animation around and thereby ruining the effect. To help you round these obstacles,



From cube to sphere, Imagine's morphing in action

take a look at the box in which I have outlined some ground rules for morphing and some tips to get around these rules if you have to.

Armed with this information and a working knowledge of the manual, you should be able to follow this demonstration tutorial of some morphing techniques.

Enter the Project editor. Make new Project "morphtest". Enter Detail editor. Add a primitive polygonal sphere – accept Imagine defaults throughout unless indicated. Make it active (picked) and access the Attributes requester. Colour it red and save attributes as "sphere.attribute".

Exit Attributes and save model as "sphere". Set grid size to 40. Enter Pick Points mode, pick all points (Amiga-A) and then access the Snap To grid option from the functions menu.

Go back to Pick Object mode and enter Attributes, change colour to yellow, save as block.attribute. Exit Attributes and save model as "block1".

Clear the workspace and add a primitive plane, values: 80, 80, 1, 1. Clicking OK will provide you with an 80 x 80, 2-polygon plane. Enter pick points and select all, access the Transformation requester and translate these points – 40 in the y direction.

Enter Object mode and access the Mold (sic) requester (Amiga-E), choose the Extrude option and extrude it for 80 units.

You now have an 80-unit cube. Enter Attributes and load the block.attribute you prepared earlier. Exit Attributes and access transformations, click on the Transform Axes Only button and set the size to 50, 50, 50.

Save model as "block2". Enter Drag Points mode and drag the top four points to the centre of their plane to form a pyramid.

Enter Point mode and reselect these points and Snap To grid to perfect the pyramid peak. Colour this pyramid green and save as "pyramid".

Enter the Stage editor. Load the sphere (make sure you can see it in Camera View mode), save changes and enter the Action editor. Set highest frame number to 25. Go into Add mode and find the slot marked "sphere". Click on the actor time-

Morphing made easy

Rules

- 1 – Morphing objects must have the same structure. This means that the two models you are morphing between must be made up of the same number of objects with the same number of points.
So a model made of two spheres of 100 points each couldn't morph into a model made of two spheres, one an 80-point and the other a 120-point one, but it could morph into a model consisting of a 100-point cube and a 100-point tube.
- 2 – Brush maps cannot be morphed. Imagine has no way of interpolating bitmap information so any morph between two objects with different maps will result in an unpredictable jump from one to another somewhere in your animation.
- 3 – On-off attributes do not morph. This refers to attributes such as Phong Shading and Brightness. Like bitmaps, these will also provide you with an unpleasant jerk from state to state in your animation.
- 4 – Different textures cannot be morphed. Textures in Imagine are algorithms which alter object surfaces but different ones cannot, despite the manual's claims, morph smoothly.
- 5 – Work "backwards". Always make the more complex model first and then manipulate it in the detail editor into the simpler one. A good example of this is an animation of a cube changing into a sphere – to fashion a sphere from a cube is not impossible, but it is so laborious as to be practically so.

Tips

- 1 – To get around Rule 1, you can employ the "backwards" method to transform between two dissimilar objects by "sleight of hand". This done by creating a common, simple shape from each model.
Thus you could make a 100-point letter A transform into a 100-point cube and then substitute it in the middle of the animation for a 200-point cube (of the same size and attributes) fashioned "backwards" from, say, the letter Z.
One thing to be sure of is that the axis is the same size and position in all the models.
- 2 – To morph brushmaps, prepare a 2D animation in DPaint4, save the pictures in the format "name.0001" etc and then index these in the Attributes section of the detail editor.
- 3 – Take care to save attributes as you go along so that you can recall materials for different objects and avoid the "jumps" you can get with on-off attributes.
- 4 – To morph textures, crossfade between two sets, one going from zero to significant values and the other moving in the other direction. The in-text tutorial demonstrates some techniques.

line at frames 2 and 12, load the block1" object and enter 10 in the Transition Frames slot. Click OK and then click twice on frame 13, load "block2", click on frames 14 and 25, load "pyramid", transition frames 8.

Save changes and enter the Stage editor. Add a light and drag it somewhere behind the camera. Save changes and make a wire frame test.

Hopefully you should see a sphere change into a cube which changes into a pyramid. To see the colour changes, return to the Project editor and make an animation.

While not the most exciting of projects, this tutorial demonstrates the basics of successful morphing in Imagine. The main thing is for you to go on and experiment with this technique!

Real 3D v1.4

Tipster: Henri Bujko

Because Real 3D seemed to offer only solid modelling, many people felt daunted by having to construct objects purely by bolting together primitives and using lathes. Well the good news is that "freeform" modelling is available in both the Beginners and Turbo/Pro versions of the program.

It can seem a little daunting at first because there are no primitives to access and no direct way to build up vertices or faces from scratch. But what there is adds up to a powerful feature. In this particular example I will show you how to make a spiral hollow tube.

First set the grid to units of ten – this helps to locate the centre point of the triview more quickly (0, 0, 0) and makes manipulation of objects more accurate and intuitive.

From the Freeform menu option select Create curve – Spiral, click in the bottom left window (this represents the top view of the scene) at zero co-ordinates, and pull out a circle of a 100 units radius.

Accept the defaults in the requester and a spiral curve will appear in the windows. Next, make a loop by using the command Create Curve – Circular Loop. Define the object's centre point in the top left window (the front view) at 0, 0, 0, just like the spiral curve. Drag out a circle of ten units.

Next, make sure that Loop is selected in the file hierarchy table and use the Move

command to place it at the bottom of the spiral curve at the start of the line – do this move in the top right window (side view).

By selecting Settings Display Autofocus from the menu, the Loop object will be automatically centred and sized in all windows.

In the bottom left window, use the command Modify Hierarchy Rotate and select

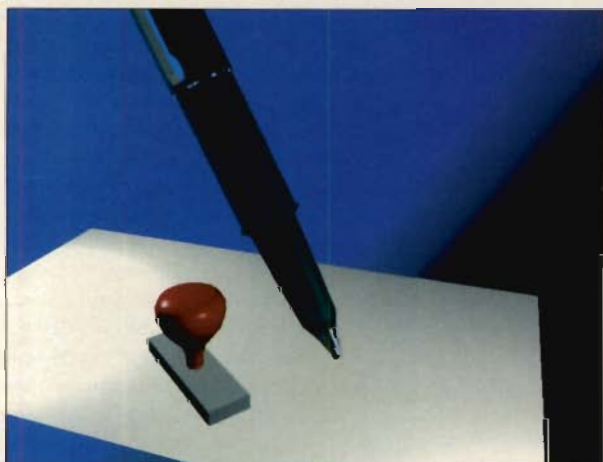
Transparency effects

Contrary to popular belief, transparent objects casting images onto surfaces are easy to produce and take relatively little time to render.

Apply these settings to your mapped image (again just a DPaint picture) and results similar to the picture shown can be achieved:

Brilliance – 100
Transparency – 100
Speed of Light – 100
Colour and Clip – highlighted
Both Gradient buttons – highlighted
Unshaded – highlighted

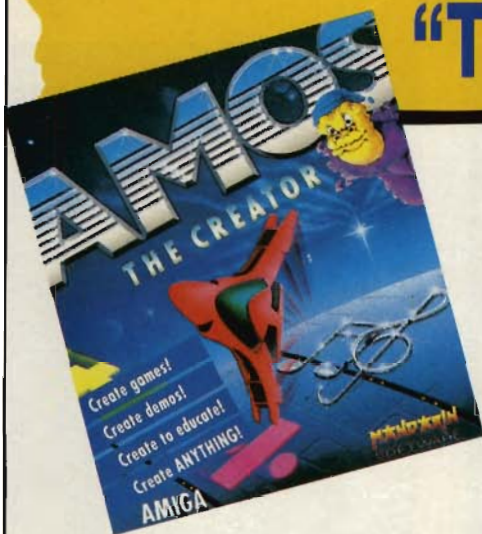
In this way, classic effects like stained-glass windows can be produced easily. The Unshaded option stops any shading being applied to the object or shape.



Good objects and decent lighting make for the best Imagine 2.0 results

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Transparency is capable of producing stained glass window effects

► the centre of the loop as being 0, 0, -100. This should be the case as soon as you click in that window at the centre of the loop.

Rotate the loop 90 degrees by mouse control, or on clicking the centre point immediately press the colon/semicolon key on your keyboard. This brings up a requester which will already have 90 degrees as default.

Say OK to this and the loop will be rotated accurately. By using the same key-press with other actions such as sizing and so on, the requester will allow you to type in exact figures.

Now this is the crucial bit. Select from the menu Freeform Build Orthogonal Sweep. At this point press the asterisk key – the one to the far right of the keyboard in the numeric keypad.

A message on the menu bar will appear saying "Select Object for Point Definition".

Assuming that Loop is still highlighted, click on OK in the requester.

A message will appear in the menu bar saying "Define Sweeping Curve" – again press the asterisk key. This will bring up another message in the menu bar, "Define Sweeping Curve". Select Curve Object in the hierarchy and click on OK.

The programme will then automatically extrude the loop along the spiral path and produce a hollow, perfect spiral tube. You will notice that in the hierarchy table a new object appears called mesh.

You can delete the loop object, as it's not needed. Now the mesh can be made smoother and more detailed by using the Freeform Modify Remap option from the menu. By doubling the figures in the requester, a very smooth object can be produced automatically.

Unless you have an accelerator or lots of memory, be careful with any kind of mesh

Rendering options

There is no need to always render your images full screen size in order to check characteristics. Just type in smaller units in the Width and Height parameters.

For example, 320 x 256 could be 160 x 128 or even 80 x 64. Animations can be rendered and saved in this size far quicker and previewed faster before committing yourself to the final render. The same applies with rendering to a 24-bit graphics card.

When using anti-aliasing for standard Amiga modes, never use more than four levels – level two is, in most cases, quite adequate, and affects the rendering time slightly.

Also, when rendering in 24-bit the same applies – level four is quite fine, and applying any more considerably increases rendering time for little image improvement.

Likewise with the recursion depth. Level three is fine for most imaging, maybe increasing to five or six if overlapping glass objects are used or a more detailed reflective surface is required.

Use anti-aliasing and recursion depth with extreme caution. A 68030/68882 combination can be made to look like a bog standard 68000 setup with indiscrete use of these parameters.

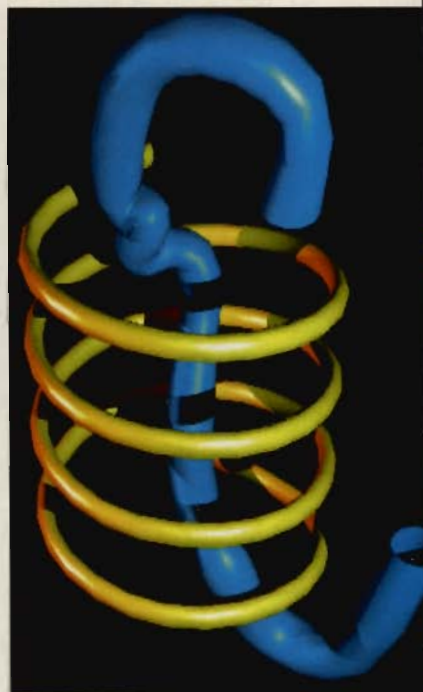
object as the Real3D program is optimised for solid geometry (see "Reflectance" box). The curve which is left can now be used as an orbit or movement path down the tube. Parallel curves can be used to make wavy

flags and – by using the point editing tools – reshaped or bent. Thus you can use the morphing facility within the program to create animations of rippling flags.

Meshes can be made by using the Freeform Build Orthogonal Sweep, and points pulled and shaped with the variety of bending options available.

An even quicker way to produce Terrain is in DPaint. Use the Airbrush tool to spray an area in different shades of grey (make sure the area is small and use lo-res, 16 colours), save this as a brush and use the Pixel2 tool in Real. Select the brush from the menu and define the size required.

The program will look at colour values and the number of pixels and make a



Real 3D's Sweep and Exude functions in action

mesh that can look just like a mountain range.

Careful use of this function is required if you have a small amount of memory. The Freeform Modify Remap/Smoothen options allow you to produce mesh objects that will be suitable to use by increasing or decreasing the number of points and polygons.

It is possible to make effective land masses with meshes and texture mapping and fly the observer around without exacting large memory overheads.

Essentially, by using curves and loops, almost any kind of organic object can be created.



Colour grading and clip mapping

Real has a very easy and fast method of producing smooth colour grades, by using the Material Requester.

Again, use DPaint to make a brush of two different coloured pixels, or one pixel and a background colour – lo-res is quite adequate, as only the colour information is looked at. Make this into a material in Real, and highlight both Gradient buttons.

By using different combinations of Mapping and Tiling and applying the resultant texture to your objects, very smooth colour gradations will be produced which are fantastic in 24-bit.

This technique can, for instance, be used to make a graded sky backdrop by mapping a spread of two blues onto a rectangle or completely around a large sphere.

Probably one of the most powerful and unusual texture mapping methods Real offers is called Clip Mapping. This takes the colour information or picture area and removes any of the object's surface that the image is mapped onto that is not represented by the area of the image.

If you clip-mapped a small square image onto a

sphere, then all that you would see is the square image in space, but with a curvature that is representative of the curvature of the sphere.

Also, by specifying the No-Colour Zero parameter, any part of the image that has the background colour will also be removed.

Take a picture of a weathercock. All the image need consist of is a series of rectangles with brushes of "text" produced in DPaint and clip-mapped with No-Colour Zero selected.

This method is great to make seemingly complex images that require little memory and are generally quick to render. They also exhibit any properties you define for your material like shininess, specularities and even the shapes will cast shadows.

The possibilities here are tremendous in that you can make animations similar to the type you might make in DPaint but with the true "3D – Dimensionality" that Real offers. The only drawback is that 24-bit images will not clip-map with No-Colour Zero.

Reflectance

By making a large hollow sphere and applying a texture to the surface, a very convincing Environment Map can be achieved. Use the Info menu option to set the spheres attributes to Scene and Hollow, and place a reflective object in the centre of the sphere.

The sphere's texture will only be seen in the surface of the object and nowhere else in the background.

A final point here, Real3D was really optimised to handle its own kind of solid modelling and the mesh objects included due to demand. Because of this, Real does not render particularly fast when using mesh-type objects or surfaces.

However, when v2 finally reaches these shores (and this could be sometime this year), the proper implementation of solid modelling and mesh-type objects among other innovations should promise a program equal to, if not better than, anything that exists for the Amiga for 3D animation purposes.



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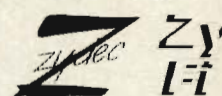
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First of all an apology to anyone feeling miffed or confused by the last couple of columns. My first mistake was to neglect to tell you about icon.library, without which your auto-booting disks wouldn't auto-boot.

This was rectified last month but, sadly, senility struck again and in telling you all to:

```
COPY LIBS:ICON.LIBRARY TO MYDISK:LIBS
```

I left out the all-important fact that there was, as yet, no LIBS directory on MyDisk. This just goes to prove that even someone charged with putting CoverDisks together and writing beginners' columns for over a year can fall foul of the complexities of AmigaDOS and make basic mistakes.

You should, of course, have typed the command:

```
MAKEDIR MYDISK:LIBS
```

before trying to copy icon.library to your disk.

On with the show. This month we'll be taking a look at the Workbench printer device and how to set it up so that we can send text files to the printer without having to use a text editor or wordprocessor.

As usual, AmigaDOS's structure means that there are several files you will need in order to set up the device, so here's a list of them:

- C:TYPE
- DEVS:PRINTER.DEVICE
- DEVS:PARALLEL.DEVICE
- DEVS:SERIAL.DEVICE
- DEVS:PRINTERS/GENERIC
- L:PORT-HANDLER

Type is just the C: command used to send a file to the screen or printer, printer.device controls all access to the printer, and parallel.device and serial.device control the parallel and serial ports at the rear of the Amiga into one of which your printer will be plugged.

Port-handler takes care of the interface for the PRT:, PAR: and SER: devices, which is what AmigaDOS calls the printer device, parallel and serial ports.

The other file we've included in our list is

the printer driver, generic. As its name suggests, this is a very simple printer driver designed to work with more or less any printer attached to your machine, and should always be present for the printer.device to work.

You can add as many custom printer drivers as you like at a later date, but generic should always be in there too.

So what's a printer driver? These small programs are found in the printers subdirectory of the DEVS: drawer and have contained in their code all the information necessary for AmigaDOS to recognise a specific printer and cater for its idiosyncrasies or special features.

Individual printer drivers are available for most popular printers and the correct driver for your printer should always be copied to the printers subdirectory.

As usual, the instructions in this column will assume that you're working with a single floppy Amiga, necessitating a lot of copying to RAM: and disk swapping. The steps taken to set up a printer.device are identical whether you own Workbench 1.3 or 2.04, so it doesn't matter whether or not you're using a Plus model.

To begin, boot from Workbench and open Shell. Now type the following commands to chuck everything into RAM:

```
COPY COPY TO RAM:
COPY CD TO RAM: (WB1.3 USERS ONLY!)
COPY MAKEDIR TO RAM:
COPY DEVS:PRINTERS/GENERIC TO RAM:
COPY C:TYPE TO RAM:
COPY DEVS:PRINTER.DEVICE TO RAM:
COPY DEVS:PARALLEL.DEVICE TO RAM:
COPY DEVS:SERIAL.DEVICE TO RAM:
COPY L:PORT-HANDLER TO RAM:
```

Phew! Now CD RAM: and put MyDisk in the internal drive. If you have a second drive, just pop MyDisk in there, then everyone should type the commands:

```
MAKEDIR MYDISK:DEVS/PRINTERS
COPY GENERIC TO MYDISK:DEVS/PRINTERS
COPY TYPE TO MYDISK:C
COPY PORT-HANDLER TO MYDISK:L
COPY PRINTER.DEVICE TO MYDISK:DEVS
COPY PARALLEL.DEVICE TO MYDISK:DEVS
COPY SERIAL.DEVICE TO MYDISK:DEVS
```

You now have almost all the files necessary to enable printing from MyDisk, and we could test this by using the Type command.

If we did, however, we would more than likely fall foul of one of the banes of beginners with printers – the printer driver nightmare.

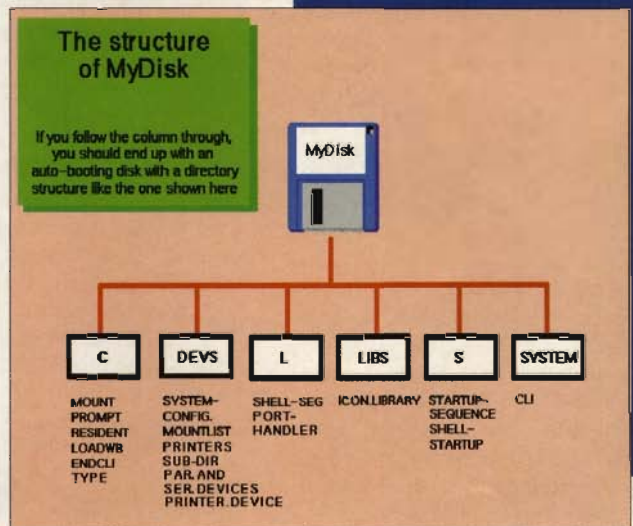
Cast your mind back a couple of columns when we were first giving birth to MyDisk. The first file we copied to MyDisk:DEVS was called system-configuration, and it is this file which contains the information about which printer driver is currently selected. The printer

ABSOLUTE

beginners

PART 5

Stevie Kennedy
sorts out printing
and printer drivers



Beginning to
get crowded in
there, isn't it?

driver which was selected on your original Workbench disk – from where we copied system-configuration in the first place – is the driver MyDisk, will look for when asked to print something, and if it was anything other than generic we'll have problems.

To check your printer driver, put Workbench back in the internal drive and open the Prefs drawer by double clicking on it. Workbench 1.3 owners should now double click on the Preferences program and then the Change Printer gadget.

Workbench 2.04 users (everyone with a Plus model) will have to double click on the Printer icon.

For all users, the selected printer driver will be the one which is highlighted, so make a note of its name and quit out of Preferences. Now open Shell again and – let's say the selected driver was EpsonX – type:

```
COPY DEVS:PRINTERS/EPSONX TO
MYDISK:DEVS/PRINTERS
```

If your selected driver was other than EpsonX, just substitute its name in place of EpsonX in the above command line.

Once the copy is complete, MyDisk should have the correct printer driver

installed and should be ready to do some printing. It's time to boot from MyDisk to test this, so insert it in the internal drive and carry out a warm reboot (Ctrl-Amiga-Amiga).

If you followed the last two columns, and survived my wee mistakes – which I almost didn't! – then MyDisk should boot up with a Shell ready to be opened and used. Once the disk has booted, double click on its icon to reveal the Shell icon, then double click on that.

If you have a printer attached, type the following command:

```
TYPE TO PRT: S:SHELL-STARTUP
```

and if you don't yet have a printer, just type:

```
TYPE S:SHELL-STARTUP
```

As long as the printer is online and has paper in it, printer owners should see the shell-startup (remember this from last month?) printed on paper, and non-printer owners will see it listed in the Shell window.

Congratulations! You have successfully created an auto-booting disk and enabled our first practical project. You have already advanced much further into the Amiga's

This month's jargon

Console

This is the name given to the Amiga screen in which you are issuing commands and receiving the output. In other words, the console can be thought of as another name for the Shell window.

Escape codes

Used in printing to control printer effects, escape codes are a bit of an anachronism, though still useful. In conjunction with the Echo command, escape codes can produce text effects to brighten up anything from a full letter to a simple disk intro as you'll find in the boot sequence of every Amiga Computing CoverDisk.



practical side than the vast majority of owners, and there's a lot more to come.

To experiment further with the Type command, try for a second time the command line we just typed in, adding the word Hex at the end so that the line looks like this:

```
Type TO PRT: S:SHELL-STARTUP HEX
```

Notice the difference? The file is printed out, but this time the text part has been squeezed into a single column on the right of the screen and the left hand two-thirds are filled with numbers. This is a hexadecimal (hex for short) listing of the file and contains the Ascii codes for each letter or character in the text.

This won't mean much to you at present, but it is a good example of how much flexibility you will find in the simplest AmigaDOS operations if you delve a bit.

You can examine the hex contents of any file on MyDisk by using the Type command in this way, but unless you intend to become a machine code programmer you'll probably never have to do this.

One practical use of the Hex option is when you suspect you have a virus but can't be sure. If a file on your disk seems somewhat suspicious (it wasn't there before or has a strange name such as "****") you can use Type with the Hex option to carry out a very crude test on the file's contents.

Certain viruses leave files on your disk containing Ascii text within the code which can be read using Type. If a file is troubling you, Type it to the screen using the Hex option and check for insolent or smug messages from the virus author inside the code.

Usually, you won't find them, but in the case of new viruses which are undetectable with existing virus checkers, it is this sort of basic detective work which sometimes saves the day.

A more common use for Type is its numbering ability. Suppose you have an example Basic or C program on disk that you'd like to get to grips with as you begin to learn the language.

Most modern programming languages don't use line numbers, so any listing you printed out could be quite difficult to follow.

If used with the Number option, Type will add a line number to every line in the file, making life a lot easier. Try typing the

following command:

```
TYPE TO PRT: S:SHELL-STARTUP NUMBER
```

The output you'll get will be identical to the original listing of this file except that every line is now numbered.

So much for Type. What if you want to use a PD program for viewing and printing text files? What if the file has been crunched (compressed so that it uses less disk space) so that when you try to Type it to the printer you get a lot of garbage on paper?

In these cases, you need a program such as MuchMore_PP (MMPP) which we use on every CoverDisk to view and print text files. All you have to do, assuming you have this month's CoverDisk, is copy it to MyDisk using the command:

```
COPY COVERDISK33:C/MMPP TO MYDISK:C
```

and, after a couple of disk swaps, the 11k program will be copied across to your disk.

Now, before we attempt to use MMPP, a couple of things have to be added. This program is really quite complex, as it will load and de-crunch powerpacked (crunched) files, so it needs to have access to the powerpacker.library.

Luckily, this can be found on every CoverDisk. Also, as it uses a file requester to choose the file to be viewed, it needs to be able to find arp.library, which contains the file requester.

To copy these files from this month's CoverDisk across to MyDisk, type the commands:

```
COPY COVERDISK33:LIBS/POWERPACKER.LIBRARY TO MYDISK:LIBS
COPY COVERDISK33:LIBS/ARP.LIBRARY TO MYDISK:LIBS
```

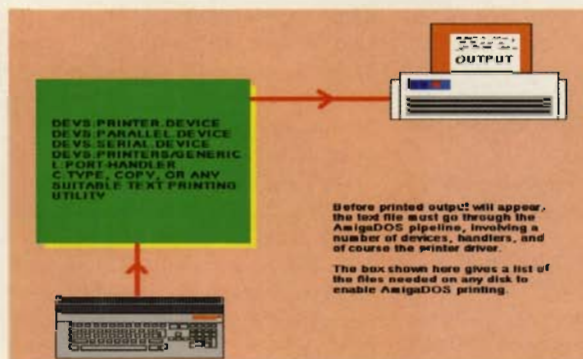
If you have an external floppy, put the CoverDisk in there to save disk swaps.

If you now want to view and then print a document you would first type MMPP to summon the file requester, then select your file, scroll through it in MMPP, and finally print it by holding down the Alt-Shift-O (the letter, not the number) combination.

Fine, you may be thinking, but what if I want something other than a straightforward Ascii file listing? You'll have noticed that using Type and MMPP in the way we have, the text files as printed are fairly bland. However, there are a couple of ways,

even using basic Workbench commands, that you can spruce up a text file.

Let's reboot with our Workbench disk and take another look at the Preferences program. As before, Workbench 1.3 owners should double click on the Prefs drawer, then the Prefs icon, and Workbench 2.04 users should open the Prefs drawer and



There are many files sitting between your keyboard and your printer

double click on the Printer icon. In the Preferences program it is possible to set the length of the page your text will print on, the left and right margins, pitch in characters per inch (the higher the number the smaller the characters will appear), spacing in lines per inch (the lower the number the more space there will be between lines), print quality (draft or letter), and the paper type (single sheet or continuous feed).

While these controls don't give you anywhere near as much control over the text as a wordprocessor would, they at least make it possible for the user to tweak his or her preferences until they best suit their printer and personal taste.

There are no controls for underline, italics, and so on, but these too, you may be surprised to learn, are available when you first write your text.

On this page, you'll see a box containing a list of the text effects available under AmigaDOS. These are all turned on by first pressing the Escape key then a few control characters, and turned off after use using the null code (see box).

To try these out, you can't actually use the ED text editor supplied with Workbench because whenever you press the Escape key ED goes into extended mode and expects a command to be issued.

To create a file containing Escape codes for text effects, therefore, you'll have to use a shareware text editor, such as QED from the Amiga Computing WorkStation and GraphicStation disks, or type directly to the printer using redirection.

Redirection takes place when the output from a command is forced to a device other than the default device, which is normally the console (another name for the Shell window). For example, if you typed:

```
ECHO "Esc[1M Hello!"
```

you'd see the word "Hello!" appear in bold type in your Shell window. Remember! When you see the word "Esc", I mean you to press the Escape key rather than type the word out. Now try this:

```
ECHO >PRT: "Esc[1M Hello!"
```

Surprised? The word "Hello!" appears not in your Shell window but on paper. The redirection arrow has forced the Amiga to send the word, complete with the escape code for bold type, to your printer where, as long as the printer is online and fed with paper, it will

be printed. We'll be taking another, more in-depth, look at redirection as the series continues, but for now owners of printers can have fun printing stuff to paper from the Shell window.

The rest of us can try this interesting experiment. Type the commands:

```
ECHO >RAM:MYFILE "WHAT'S THIS DOING IN HERE?"
ED RAM:MYFILE
```

Next month we'll start to fill up the C: directory with the most useful AmigaDOS commands and take a long hard look at what they do.



Text effects

The following is a list of all the text effects available through the use of escape codes, any of which can be used for script files which appear in the Shell window or for output directed to the printer.

Please note that where you see the word Esc, you should press the Escape key on your keyboard rather than type in the whole word.

Esc[0m	Turn off all effects
Esc[1m	Bold text
Esc[2m	Make text colour 2
Esc[3m	Italicised text
Esc[30m	Make text colour 0
Esc[31m	Make text colour 1
Esc[32m	Make text colour 2
Esc[33m	Make text colour 3
Esc[4m	Underlined text
Esc[40m	Make background colour 0
Esc[41m	Make background colour 1
Esc[42m	Make background colour 2
Esc[43m	Make background colour 3
Esc[7m	Inverted text
Esc[8m	Make text invisible
Esc[nu	Make text window n characters wide
Esc[nt	Make text window n lines high
Esc[nx	Set left border of window to n pixels
Esc[nr	Set distance to top of window as nr pixels

NB: Workbench 1.3 colours are: 0 - blue, 1 - black, 2 - white, 3 - orange. Workbench 2.04 colours are: 0 - grey, 1 - white, 2 - black, 3 - blue.

This month's commands

Just one this month. The Type command is used to output the contents of a file for inspection by the user. By default, it sends the output to your Shell window, but can be made to send it to the printer for printing if so desired. Syntax is of the form:

```
TYPE (Filename) [TO] [DEVICE]
```

Its parameter is the filename and its options are Hex or Number, the former printing a hexadecimal representation along with any text, the second printing the text along with line numbers.

CITIZEN

DOT MATRIX INK JET AND NOTEBOOK

PRINTERS

AC

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- 192 CPS** **136 COLUMN**
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GRAPHICSTATION

SUPPORT

If you read last month's GraphicStation you should have the basics of PrintStudio in hand. This month we'll finish our look at this excellent utility with an in-depth guide to getting your prose in print.

The first task is to ensure that the files you wish to print have been saved in the Ascii file format. If you attempt to print files which have been written and saved in a wordprocessor, using its own proprietary format, PrintStudio will print nothing more than good, old-fashioned gobbledygook.

To employ PrintStudio the text to be printed must be Ascii. All major processors and text editors are capable of saving in this format so there shouldn't be any difficulty providing the necessary files for the program.

As mentioned last month you can employ the GraphicStation's own text editor – alias QED – which you'll find on pull-downs within the main GraphicStation screen. All the files created with the aforementioned software are automatically saved in the Ascii file format, so it's ideal, and of course very convenient, being only a couple of mouse clicks away.

Assuming you have the file in the necessary format, it's time to activate the GraphicStation's text icon and get down to business. The first job is to load the file you require. Thanks to a standard click select requester, this literally couldn't be simpler.

Once loaded, a new interface displays the imported text which can be scrolled through via the slider at the top of the screen – but it's the lower portion that holds the real power...

Some of the options on offer are self explanatory so we'll concentrate on the slightly more mysterious options, starting

with the Select box icon. Once activated yet another control panel appears. From here you can define the start and end point of a specific section ready for printing.

There are several methods of selection, the most direct being typing the relevant line numbers directly into the Beg and End requesters on the left of the control panel.

To see your selection simply click on Show and the program will automatically update the display with your selection.

Alternatively, you can use the central collection of icons to adjust and select line by line. Using this option you must first select the start line by using the arrow keys to scroll the cursor through the available text.

Arrow icons

Once you've located the start line, the next task is to click on the mark icon and then once again employ the talents of the arrow icons to expand your selection – in either direction.

Once you've reached the last line in your selection, simply click on the Show icon and your selection will be complete. The screen should update with your new box. Click OK, and you'll be returned to the main Text-Print screen.

If you now select Print, the final print requester will appear. As you'll see, this requester allows you to define the finishing touches which anyone who has employed Workbench as a print-

ing environment will be familiar with.

If you are unsure of exactly what these options mean you'll find a full description in your Workbench manual.

On the lower section of the requester you'll see the print commands themselves. The print option actually starts the printing process but you also have the option to write the print file to disk.

Using this option it's possible to save various sections of text from assorted files and then print these in the desired order later via the CLI.

To print saved files from disk, first open a Shell window and change the directory to the one containing the files you wish to print. Then list the contents using the Dir command.

Now type in either of the commands listed below, replacing the "{Filename}" with that of the file you wish to print:

COPY {FILENAME} TO PRT:

or:

TYPE TO PRT: {FILENAME}

Of course you could take the slightly easier route and load the printed disk file directly back into PrintStudio, reprinting from there.

For the time being, let's return to the main Print Text menu and look at some of the other options on offer. To do this simply click on cancel and you'll be back where we started. This time, select the Options icon to reveal yet another requester.

Here you can add those essential extras to finish styling the file prior to printing. In the first section of the requester you'll find the headline and date options.

If you require a headline, simply type the text into the requester and make sure you click on the headline push button to activate the option.

Next, select its print position, and finally define if it is to appear once or on every page of the printout. Lastly, click on the word Headline itself to activate the headline styling requester.

Next move to the Time and Date options – again don't forget to activate the push



Add those essential finishing touches before you go to print...

button beside the options. If you now click on Date and Time, the requester will be updated from the machine's internal clock. If you require an alternative date simply type it in manually.

If you do plan to use a time or date other than the actual time, make sure you activate the Buf option which instructs PrintStudio to employ the time and date you have defined.

If the Act option is active the program will default to the internal time and date defined by the built-in clock.

The next set of options are again rather self-explanatory, but if you click on Page Number it will reveal yet another styling requester in a similar vein to that of Headline, but this time all the options refer to line spacing between various elements within the page layout. Armed with the above you should now be able to take full advantage of the power that PrintStudio has to offer.



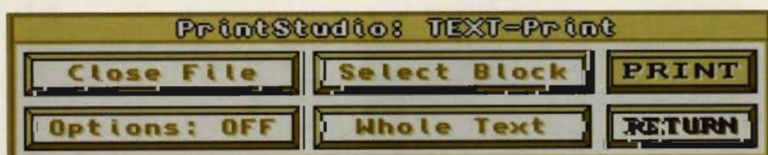
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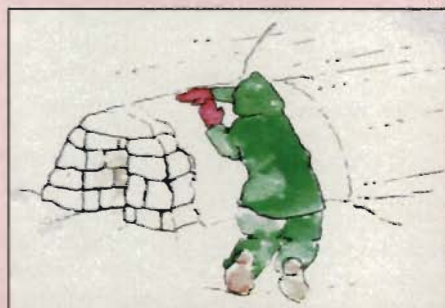
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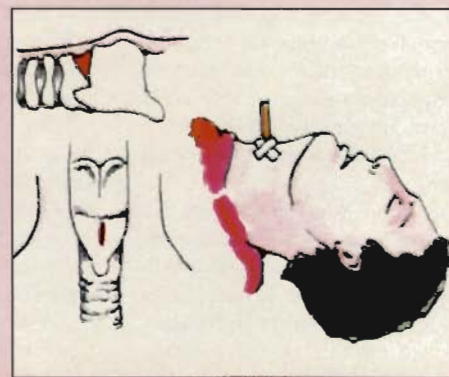
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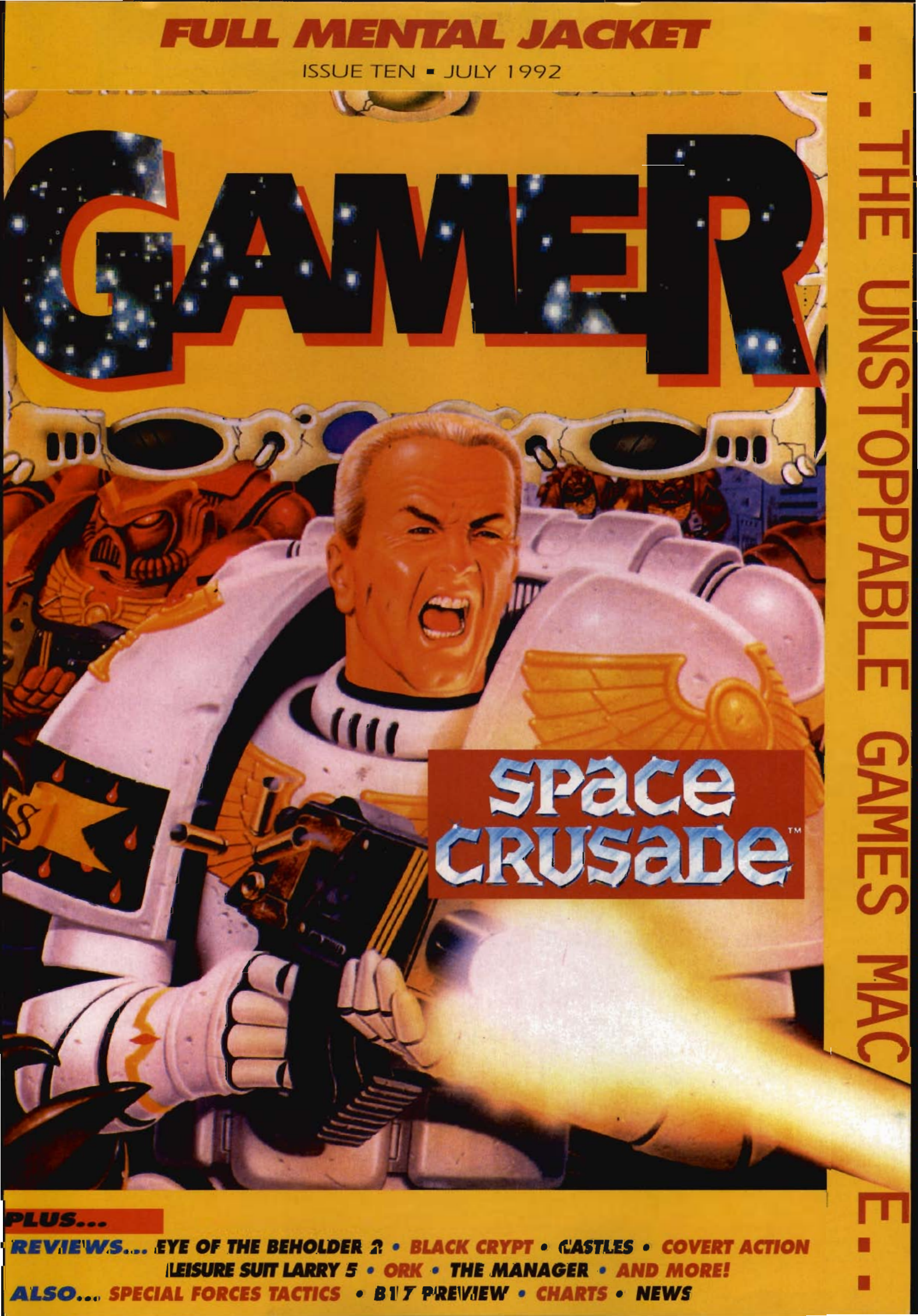
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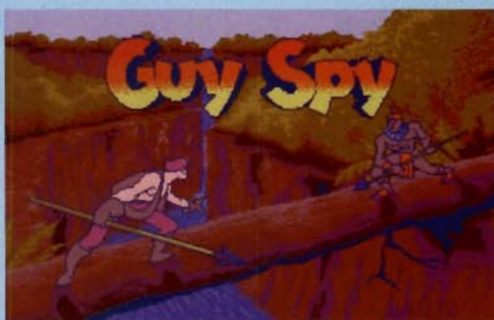
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With my little eye...

Currently sweating away for the coveted title of "Busiest Software House in Basil-don" are Empire. As we speak they've got three new releases tumbling down the pipeline towards the dusty shelves of software-ville.

Guy Spy is the latest from the people responsible, if not downright guilty, for Space Ace and Dragons Lair. It tells the tale of, strangely enough, a spy called Guy, and from what we've seen it actually looks a lot more playable than it's ill-fated ancestors.



Also waiting in the wings is the cutesy platform romperama, Cool Croc Twins. Playing in a Mario platform-style, it sees Funk and Punk Croc trying to catch up with their mutual girlfriend, Crocette.



Quite how this randy twosome think they can get away with sharing a girlfriend is beyond me. Crocodiles, eh? Nice, crisp cartoony graphics and oodles of cool should be ready even before you finish this sentence...



Not a Euro Disney competition

No, I'm afraid it's not, although by the number of Euro Disney compos currently doing the rounds, you'll probably win a visit there just for existing. What we do have, however, is a peep at the latest from Infogrames Disney licence.

The Rocketeer is the game of the film of the man with a sparkler up his bum. Zoom around the place beating up Nazis and generally being rocket-like. It promises some sizzling animation and digitised graphics, so it should look a treat.

Oh, and if you're interested, the film should be in your local video shop round about now. Light the touchpaper and stand well back...



Name that toon

Following on from last month's teeny peak at Jim Power, Loricel have unveiled yet another new game. It's called The Cartoons and promises to be, gasp, a bit like Lemmings.

You've got a little bloke who wanders about the place being a bit dim and dying a lot. You control a superhero fella who has to keep his wee pal alive by blocking holes, killing nasties and generally looking out for his mates best interests. Or if you like, you can beat the little pillock up yourself.

To be honest, it's not that much like Lemmings, but it is a really good fun game. As the name suggests, it all looks very cartoony and it should be ready for us ungrateful Brits in September.



The prat with the beard is back

If our Cheat Mode on Nightmare a few months ago has whet your whistle, then dry it off and read on for more enthralling news.

The all round smarty-pants responsible for Nightmare (the game, not the rather sad TV prog), Tony Crowther, has put pen to paper and come up with a complete hint book.

It won't give you the answers straight out, 'cos in true Nightmare style everything's in riddles and cryptic clues.

So if you're still floundering about in the dark with a bucket on your head, cough up a mere £5.99 at your nearest (or indeed, furthest away) software shop for a copy. Failing that, give Mindscape a tinkle on 0444 246333 to buy one with a credit card.

What thoroughly nice people.

Hudson! We are leaving!

Yup, coming soon to a cinema near you is the third instalment in the ongoing battle between Warrant Officer Ellen Ripley and numerous slimy monsters.

Alien 3 is currently being trailed in cinemas up and down the country,

and also at the beginning of the rather gnarly Aliens - Special Edition video.

Rumours have been buzzing around for yonks about the film. It's cost too much, say some. It's crap say others. Whatever it's like, you'll be able to join

in the fun on your Amiga thanks to those gorgeous fun-bundles at Accolade.

We can't wait to get a peek at it, so you're guaranteed to hear all about it soon.

You! Love! Us!

Indeed you do! Thanks to everyone who took the time to fill in and return the Gamer survey - it's nice to know we're getting it right!

It seems that the majority of you think that Gamer isn't big enough, and that the reviews should be just the way they are. It also seems that most of you buy the mag yourself, with ten per cent of you reading a parent's copy.

You want us to review all types of games, and pretty much everybody reads every single last juicy scrap of Gamer. It seems that most of you are aged between 13 and 25, although we have readers as young as six-year-old Greig Muir going right up to Mrs A Cruttenden, a grandmother from Basingstoke (who said chivalry was dead? We'd never give away a lady's age!).

A fair majority also suggested that Gamer's page size could become the same as the rest of Amiga Computing, and we're looking into it right now.

The lucky winner of the Gamer Bundle of games 'n' stuff is Alan Ben Lampard from Weymouth. Quite a few of you pleaded poverty for the games, but none so eloquently as Alan. The bundle's on it's way.

Oh no! It can't be!

Yes it is! It's another pointless Gamer compo. The game up for the proverbial grabs this month is none other than Electronic Arts' throbbing big hit, John Madden American Football. Zoiks, eh?

And as usual, we're going to ask you to do something really trivial and stupid to win it (along with a veritable plethora of other goodies).

Obviously, we've tied the compo in to American Football, and so you're going to have to dig out the A to Z for this one. We want you to make up your own American Football team, and it has to be from a real town in Great Britain.

So you could for instance have the Pratts Bottom Bombers. Except you can't, 'cos that'd be a bit easy.

If you're feeling particularly creative, then design the helmet logo and strip. Name all the players.



Go out, form the team and win a trophy. But it's the name that counts. All we ask is that it's from a real town. We will be checking, so no cheating.

The more bizarre and embarrassing the name, then the better your chances of winning. Good luck, and keep your defence around the endzone.



THE DREAM TEAM

hulk hogan - richard "WWF" williams
 lettuce etching - daniel "swirly bits" whitehead
 Jimmy Hill's mate - jonathan "clearly" maddock
 nothing at all - darren "too busy" evans
 rave animal - phil "get sorted" morse
 arty blokes - terry "rowlf" thiele
 tyne "dr teeth" lecky
 mike "gonzo" hardman
 gets rid of fatty stains
 at low temperatures

ad sales - ruth priestley
 jane conway
 0625 878888

Six beefy bouncers breathing
 on your toast

climax

next month: is Elvis really Sonic the Hedgehog, and just who are the Bee Gees?

GAMER

INNER VISION

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Brats entertainment...

WILLY BEAMISH

DYNAMIX ■ £34.99 ■ Hard drive recommended ■ Mouse ■ Out now

Kids eh? What lovable little tykes they are. As soon as they can walk, they learn the basic skills of writing on wallpaper in crayon, spilling things just to see what yoghurt looks like out of the pot, helping themselves at the Woolies pic 'n' mix counter and saying "poo" just to annoy Great Aunt Matilda.

Actually, now you think about it, kids can be pretty unlovable most of the time. And they get worse as they get older.

Our Willy is one such tearaway. A typical American pre-pubescent school-room terrorist, he's addicted to Nintari video games (now there's a subtle play on words, eh?), eats pizza and, to be brutally frank, I'd very probably hate his guts if I ever met him. And yet the game is appealing in a perverse sort of way.

You start the game in school. It's the last day before the summer holidays, sorry, summer vacation and Willy has landed himself in detention. The long, and really quite dull, intro' sequence shows Willy's pet frog, Horny (arf arf arf), leaping about in assembly, or roll call, or whatever the Americans call it.

He lands on the headmast... sorry,



The much fabled Nintari Championships, but can Willy get there?

principal's head and nicks his wig. So, detention for Willy. Can you figure out how to sneak around? If so then you get to wander around your house, investigating all the rooms and basically just getting a feel for the place before dinner arrives, when you'll have to sit through several hours of dialogue in which you don't have any input.

This is one of Willy Beamish's biggest problems. There are a lot of semi-animated scene setters in which you don't

do anything. You can't even hurry them along, so you just have to put up with them. In fact, it's best to save the game after each one, so you won't have to plough through it all again if you fail.

The whole game gives quite a good impression of things just cruising along as normal in Willy's life. You know, you have meals with the family, you meet your gang for pizza, and so on. Every now and again the story will prod you further along the game line, and you move onto the next problem.

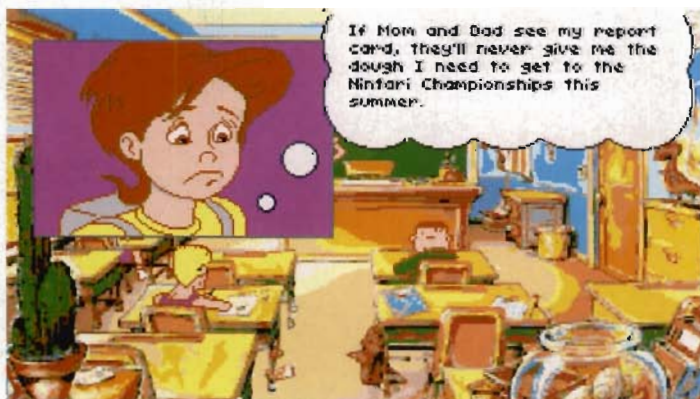
The main aim of the game is to get Willy to the Nintari Championships, but he's a bit strapped for cash and Dad's lost his job. Cash can be raised by getting Horny to win the frog jumping contest. However, Horny is up against Turbofrog and he'll need some extra stimulus to get him into a winning mood.

Along the way you'll have to solve other little puzzles to continue along the right track. For instance, can you bluff your way out of a beating from the local hard man? Can you figure out how to get out of school in time to intercept your report card? Also lurking

in the background is the mysterious Tootsweet company, who are plotting to do fiendish things in the town sewer system. Quite how this will affect you I've no idea, but the whole thing will probably come together in some exciting big finale-type thing.

Well, it's probably no surprise to find out that Willy Beamish is by the self same bloke who wrote the rather wonderful Heart of China (Gamer Gold last month, fact fans). This does indeed promise great things, but to my dismay things weren't quite as hot as I'd hoped.

As I've already said, there are too many instances where you just sit back and watch static screens, and then there are times where you seem to just wander around waiting for inspiration. At first glance it looks very interactive, a game to rival Monkey Island even, but closer scrutiny and repeated play reveals that your responses are very conditioned. Sometimes it may seem



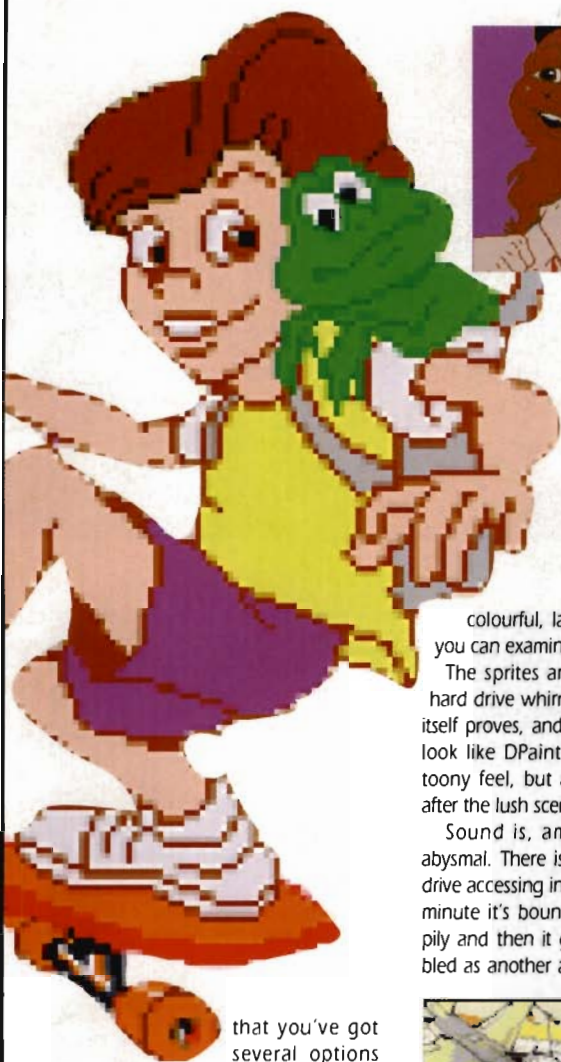
Always a big problem for The Kids - how can you get more cash from Mum and Dad?



Ber-limey! The school nurse was never like this when I was a nipper!



The Beamish home. Not exactly poverty stricken are they?



colourful, laden with objects that you can examine, if not use.

The sprites are a bit stilted, as the hard drive whirring away frantically to itself proves, and a lot of the close-ups look like DPaint pictures. A nice cartoony feel, but a bit of a comedown after the lush scenery of Heart of China.

Sound is, amazingly, absolutely abysmal. There is a tune, but the hard drive accessing interferes with it. So one minute it's bouncing along quite happily and then it goes all slow and garbled as another animation is loaded in.



This is Willy's room. In case you didn't guess



Whenever he's feeling low, Willy's dad nips up into the attic to play with his train set. Sad...

It's just like when the batteries start to wear down in your Walkman, y'know?

All in all, Willy Beamish isn't a bad little game. It's just not as good as I so desperately wanted it to be. It's a con-

fused little product, not quite sure what it wants to be. For a start, it's too expensive for kids. Some of the Americanisms will confound them, and the twelve (count 'em, twelve!) disks that need to be installed will bore them rigid. As for adults, there's just not enough interaction to warrant this kind of money.

It's charming and cute for a while, but once you've finished it – as you undoubtedly will, as it gives you so many prompts in the right direction – there's no incentive to try another route. Mainly because there is no other route. A brilliant idea, but a slightly less than brilliant game. Ho hum.

Daniel

that you've got several options open to you, but they all push you in the same direction. This may or may not bother you, but I couldn't help but feel a bit cheated by it.

There's humour, as you'd expect, but it's hard to tell just who it's aimed at. Sometimes there are clever little satirical digs at American society which will go way over kids' heads, and next you're being presented with a fart joke, which will have kids in stitches at the exclusion of us more refined adults.

On to technical things, and the graphics are quite nice. The backgrounds are often very detailed and



This is where Willy and his non-sexist, non-racist pals come to "hang out"

VISION
GGGGG
A pleasant cartoon feel, but at times a bit rough around the edges.

AUDIO
GGGGG
The tune is distorted horribly, and there are about five FX in the whole game.

PLAYABILITY
GGGGG
For the first few goes you'll be enthralled by the nostalgia of it all.

ADDICTION
GGGGG
Ultimately, trial and error will get you through. Too expensive for what there is.

78%

If you go down to the dungeon today...

BLACK CRYPT

ELECTRONIC ARTS ■ £25.99 ■ 1 meg ■ Mouse ■ Out now

Oh good golly Miss Molly, would you Adam and Eve it? It's another one of those damn role-playing games.

Now for me, Dungeon Master was and still is one of the best RPGs of all time, and because of the popularity of that game several companies are trying to cash in.

So these days you get loads of RPGs, all trying to knock Dungeon Master off its throne. It has to be said that today's technology is tons better and it shows – take a look at Eye of the Beholder 2 as an example. Unfortunately poor old Dungeon Master gets wiped off the face off the earth.

So, it's no surprise that yet another RPG is available for you to buy. Brace yourselves, because here comes Black Crypt. Electronic Arts' newbie promises to be the best RPG yet, but then again promises are made to be broken, so we shall see.

Unlike most RPGs, this hasn't got an epic novel to go along with it, but it does have a short story, and when I say short I mean short, as in Ronnie Corbett size. Well, I'll tell it anyway.

Years ago he was banished from the world. Now the dark lord Estoroth is back with a legion of Hell's unholy fiends. Their mission – blood revenge!

Your brave band must recover the lost relics that alone can seal Estoroth and his infernal terrors in the Black Crypt (hence the title). So there you have it, short story time over.

As usual you start the game with four team members. These must be selected at the beginning. You have a

choice of fighters, druids, wizards and milkmen. Well OK no milkmen, but I had you going for a second there.

The whole game is played in dungeons – 12 of them to be precise. Each member of your dungeon posse already has several items upon his/her person – one of these items is normally a weapon.

Obviously fighters will have much better weapons than, say, druids, but then again don't choose all fighters because who's going to mix the drugs and do spells – or is it do the drugs and mix spells? Sorry, I'm getting away from the point here.

Black Crypt plays rather like Dungeon Master in the way that you move about and the way that you fight.

I have to hold my hands up and admit that I found it very hard. Not hard to play, but hard to get anywhere.

The beasts are very nasty indeed. They have this disagreeable habit of creeping up behind you, and before you know what's going on, you've lost two of your brave adventurers.

Despite this annoying factor, I found Black Crypt quite fun to play. I don't know why – maybe because it is so well presented. That's one of the best things about Black Crypt – the graphics are amazing, all drawn beautifully in 64 colours.

The animation is top notch – even the doors are wonderfully animated. Dan spent about ten minutes just open-

Oh no, it's the old shield in the stone wall trick. Well don't think I'm falling for that one...

ing and closing a door – he was mesmerised.

It says on the box that the game's got digitised sound effects, but all I heard were a few grunts and the sound of doors opening and closing (thanks to Dan). Maybe there are some fantastic sound effects in the later levels.

Overall, Black Crypt is basically Dungeon Master with knobs on. The level of difficulty might put a few of the less experienced RPG fans off, but for the conquerors of Dungeon Master and its ilk, this is definitely the game for you.

The graphics make it instantly likeable, and playability-wise you can't go far wrong. It's not a classic, but it's much better than some of the other rubbish on the market.

I'm off back down the dungeons now, not to play Black Crypt, but because that's where Amiga Computing put me when I'm not reviewing games.

I don't know why, but I don't half fancy some fava beans and a nice Chianti.

Jonathan



VISION
GGGGGG
Corr, well sexy, know what I mean guv?

AUDIO
GGGG
Average intro tune, sound FX aren't up to much, though.

PLAYABILITY
GGGGG
Nice easy control system, but it's not for the beginner.

ADDICTION
GGGG
Fairly addictive, but difficulty level might put you off.

85%

Cor what a fantastic line up, and doesn't Geoff Capes look well 'ard?



A big disgusting salivating two-headed monster. It's just like Paul Austin first thing in the morning...

Eye, eye what do we have here... Excuse me while I faint, thank you





Is that a key I see before me? It is ya know, well it must be my lucky day...



Oh schoob, it's a, a, err, well whatever it is, it's flippin' scary. I'm off...

Well it's not lemmings, so what is it?

ORK

PSYGNOSIS ■ £25.99 ■ 1/2 meg ■ Joystick ■ Out now

Ork, – what a name! What you don't know is that the word "ork" doesn't actually mean anything and – more surprising – that it isn't related to the game in any shape or form.

The main character isn't called Ork, there isn't a planet in the game called Ork, the evil baddie isn't called Ork, so why call a game Ork?

Why not, I say! It's better than Mabel or Edith, after all. Ork is one of those words that you can put almost any letter in front of it and make a new word from – fork, pork, cork, dork, mork, yolk and errr gork – well that's quite a few, anyway.

I'm sorry, I'm definitely losing it – it's just that when I see a game with a totally pointless name I crack up and can't control myself.

Ahem. Anyway, you play the part of Ku-Kabul, a Heyadahl (that's his race, not a foreign swear word), and you're training to be captain of a star cruiser.

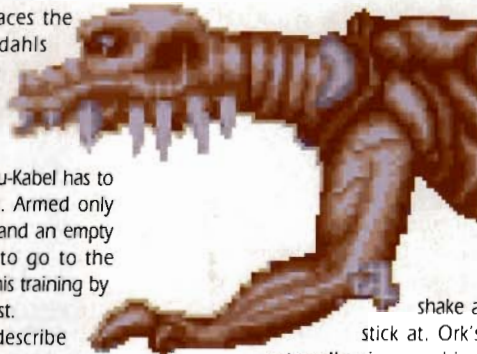
Ku-Kabul has reached the end of his

training and he now faces the final test. Other Heyadahls have taken the test, some have passed while most have never been seen again.

No-one knows what Ku-Kabel has to do except his examiners. Armed only with basic twin cannons and an empty jet-pack, Ku-Kabel has to go to the planet Ixion to complete his training by passing the feared final test.

The best way I can describe Ork is to say that it's a cross between The Killing Game Show and Shadow of the Beast. Now Psygnosis are famous for producing games with brilliant graphics and sound, but they always seemed to forget one thing – playability.

In the case of Ork, they seem to have rectified the problem because there's more playability than you can



shake a

stick at. Ork's

got really nice graphics, even if it looks as though most of them were ripped from Shadow of the Beast.

On the sound front there's a lovely little intro tune, but in-game there isn't a lot to shout and scream about. The sound FX are a little boring and don't really do anything for the game.

I think why Ork has succeeded and other Psygnosis games have failed is because Ork has the puzzle factor to it. Shadow of the Beast was just a fancy beat-'em-up after all and all there was to do was hit things and run around.

Ork, on the other hand, is a whole different kettle of fishies. The puzzle element means that you actually have to work out what to do, rather than just blasting baddies.

There isn't a lot that you can really complain about – it's one of those games that looks nice and plays well. However, it's lacking that certain something, if you know what I mean.

It doesn't really stand out from the rest. I mean, Lemmings had loads of little cute green-haired creatures that tried to commit suicide, but all you've got in Ork is a thing that shoots other things. I mean the main character looks



like a mutant chicken!

Ork is one of Psygnosis' better games, but it's just not Gamer Gold material. I don't think the public will be rushing out to buy this one – they'll probably go for one of the big licensed games that's a load of rubbish, like they usually do.

Never mind, Psygnosis – there's always Lemmings 2!

Jonathan



Hello there, if I give you this gold will you let me through the toll? Yes? Oh thank you. What a nice man, a very nice man.

Err excuse me, it's no time to be playing on computers, there's a big three-pronged beastie about to kill you...

VISION

GGGGG

Nice graphics with more than a hint of Shadow of the Beast in them.

AUDIO

GGGG

A nice little intro tune, but the sound FX do nothing for the game.

PLAYABILITY

GGGGG

A Psygnosis game that's playable? Don't make me laugh. No it's true, so there.

ADDICTION

GGGG

You'll probably come back to it – it's one of those games to play on a rainy day.

80%

If you're not familiar with names like Orks, Gretchins, Dreadnoughts, Blips and Genestealers, then chances are you haven't been living for the past few years.

As any decent role-playing games fan will know, these names are all to do with Games Workshop Ltd. Now if you cast your minds back a year or so ago, you will remember that Gremlin converted Heroquest – The Board Game into Heroquest – The Computer Game (fanfare please!).

This obviously delighted thousands of RPG fans who owned Amigas. Now they've converted Space Crusade – a much loved RPG – to our computer screens too (hurrah!).

Anyone who's not a fan of RPGs will probably think that they're a little boring and involve lots of old, hairy heavy metal fans who move painted metal figures around a board while throwing a 75-sided dice.

Well you're wrong! I've played a few RPGs in my time, I can tell you, and they are actually quite fun. The only thing that bothered me were the hundreds and



Now I don't think red suits me, but I quite fancy that blue chapter



Look there's my posse, don't they look 'ard and well organised?

hundreds of rules that came with the game as standard.

You know the sort: "You can only kill an Ork if its kill points are below seven and its defence factor is above two, but if you own a Heavy Bolter you must throw three times to see if any shrimps have eaten your fridge."

Well it's sort of like that. Whatever it was, it was very confusing. So if you

didn't know all the rules you consequently got beaten to a pulp by all your chums.

Well, now Space Crusade is on your home computer and things are a little easier. I'll tell you why shortly – first it's time for a bit of a story.

More than 25 millenia ago, mankind took his first tentative steps to the stars. The discovery of the warp drive was a major advancement for space travel. What was once a journey of several centuries became a journey of several days.

Warp space is the parallel universe through which starships may jump, but unfortunately it's also the domain of Chaos. In warp space nothing may be taken for granted. It is a universe filled with all manner of evil powers.

Ships have disappeared without reason and emerged from the warp centuries after they entered it, millions of light years from their

destinations. These derelict starships, distorted beyond all recognition, are known as space hulks.

By entering warp space, man had awoken an ancient evil – the minions of Chaos had escaped from the warp. The first great war, known as the Age of Strife, had begun.

For over five thousand years, warfare wrecked mankind – nation battled nation, planet battled planet, race destroyed race. Colonies died out, while aliens plundered and grew fat on the wreck of humanity.

Then came a saviour, the man who would be known as the Emperor of Human Space. A shrewd diplomat, he gathered what was left of human society and formed it into the Empire.

A brilliant soldier, he conquered and reclaimed the planets lost to Chaos. For this task



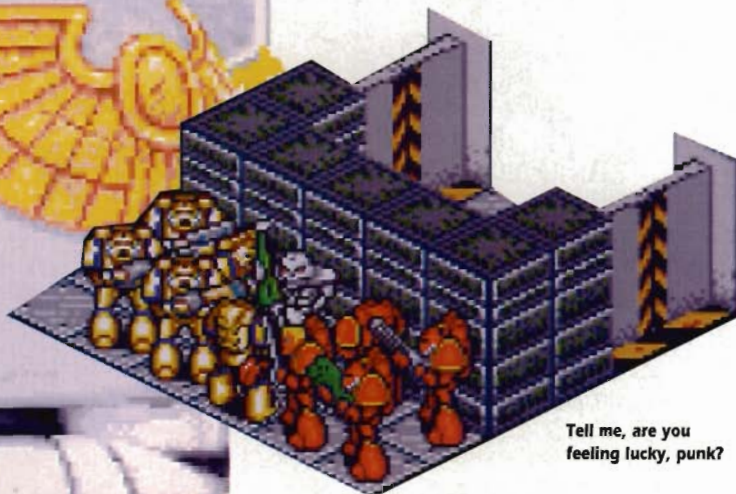
Crusading in, err space, you've guessed it, here's...



He's behind you!

SPACE

GREMLIN ■ £25.99 ■ 1/2 meg ■ Joystick/mouse ■ Out now



Tell me, are you feeling lucky, punk?

he crested the Space Marines, the greatest warriors of all.

Its members are acknowledged as the most powerful and feared fighting men in the Imperium. Space Marines are organised into chapters, each with its own fleet. The fleets roam through the galaxy in pursuit of Chaos. End of story...

Now this is where you come in. You get to control a squad of space marines – one commander and four marines – and you have to rid the space hulks of Chaos. The computer version allows for three players, each commanding one marine chapter – either the Blood Angels, the Imperial Fists or the Ultramarines. Chaos is played by the computer.

At the start of a game, the marine players choose the marine chapter they wish to represent. They then choose weapons for their marine teams.

There are plenty to choose from – assault cannons, missile launchers, plasma guns and heavy bolters are just some of those available.

The marines must then choose which mission they wish to undertake. This can



Take that you blighter!

range from blowing a hole in the side of a space hulk to taking on one of the deadly dreadnoughts. There are 12 missions to choose from, so it'll keep you busy for a while, plus there will be mission disks on the way soon. Once you've



done all of this, it's time to start the game. The marine players take their turn first. After the marine team(s) have had their turn(s), it's time for the computer to strike back.

The marine players must attempt to accomplish the mission they have selected from the mission list. During their turn the marines may move, fire or fight using hand-to-hand combat.

As the marines explore the game map, they will encounter loads of the deadly members of Chaos. Marine players score points for eliminating their opponents and the player who scores the most points wins the game.

That's basically how you play Space Crusade – move in, kill the aliens, achieve mission objectives, move out and be home in time for tea.

Space Crusade is one of those games where the reviewer tells you to buy the game and read the manual because there are so many little things to talk about that he/she hasn't got enough space to write them all down.

Guess what? "What?" I hear you all cry. "Go and buy the game and read the manual because there isn't enough space to explain all the twiddly bits."

There you have it. I've hardly got

enough space to tell you about the fantastic graphics and how you can switch views from 2D to 3D, or about the fab sound FX and how, errr, fab it sounds.

See, there just isn't enough space to tell you about the playability and how it's so easy to play because it uses a really good icon system and there are no hard rules to learn.

I can't believe I won't be able to tell you about how you'll be addicted to it for months and months on end. I don't know, computer game mags these days, tut tut.

Space Crusade is one hell of a game. RPG fan or not, you'll love it to bits. Go out and buy it today. You will not regret it, I promise.

Jonathan

VISION
GGGGG
Really fabbo graphics that look good in 2D or 3D.

AUDIO
GGGGG
OK tune and plenty of sound FX in game.

PLAYABILITY
GGGGG
Five out of five, it must be good.

ADDICTION
GGGGG
Highly addictive, plus the data disks are on the way.

91%



Cor look, it's a Chaos Marine with a, a very large g-g-gun...

CRUSADE



Maybe if I just stand here no-one will notice me...



Hey, weren't you in Jason and the Argonauts?

It's been a fairly quiet year for sporty games so far. There's been not so much as a peep or a whistle from the joystick-wagging fraternity, except for John Madden's Football. But fear not waggle fans, for spooky continental software blokes Microids are here to make your day with the release of SuperSki 2.

And before you ask, no I don't remember SuperSki 1 either. But by using some incredible powers of deduction I can guess that it probably had something to do with skiing, and it was presumably fairly super into the bargain. And, lo and behold, SuperSki 2 follows along similar lines.

You get to compete in six cold and frosty sporting japes, such as special and giant slalom, hot dog, ski jumping, downhill racing and bobsleigh. Quite how bobsleigh fits into a game about skiing I don't know, but who cares?

Especially when the bobsleigh is the best event of the lot. In fact, it's one of the most groovy little things I've ever played. Add a few more bobsleigh runs, and maybe an editor, and you've got an above-average game in its own right.

You see your bobsleigh from behind as it thunders down a twisting and turning track which should induce nausea in even the most strong-stomached among you.

As the scenery swings from side to

side, and your sled goes flying round the bends, you're guaranteed to start swaying from side to side in your seat. Just like on Voyage to the Bottom of the Sea when the submarine gets hit by something. Wow.

And that's just one of the events. The downhill skiing bits are pretty much the same in design, but each requires different skills. The slalom, for instance, requires nifty steering to get through all the flags. On the downhill run you've

got to go as fast as possible without flying off the course and straight into a tree. Each of these skiing sections plays very much like a driving game, but with the car replaced with some planks of wood nailed to your shoes.

The only events that don't quite work are the hot dog and the ski jump. The hot dog is the only simultaneous two-player event and requires you to ski down the screen, performing little jumps and fancy bits as you leap over

piles of snow. More often than not, you'll just end up face first in the snow after an unsuccessful waggle. Too tricky for it's own good really.

And that's also the trouble with the ski jump. It's too fiddly, and you don't get enough time to make any adjustments. You shoot down the slope, and then have about half a nanosecond to keep your skier balanced in mid-air, otherwise he goes splat all over the ground. And this happened every single time I tried it. Ho hum.

Well, how does it all come together? Quite nicely as it happens. The graphics are just short of excellent, and the sound is quite stomping as well. Obviously a game of this sort is best enjoyed when you play against some mates, and even then you'll all get beaten by the computer players.

It leaves you feeling all humbled and small. And then you kick your monitor in, and feel much better about yourself.

In conclusion, the bobsleigh bit is ace, the skiing bits are a bit samey but still fun and the remaining two events are too tricky and stick out like the proverbial sore thumb.

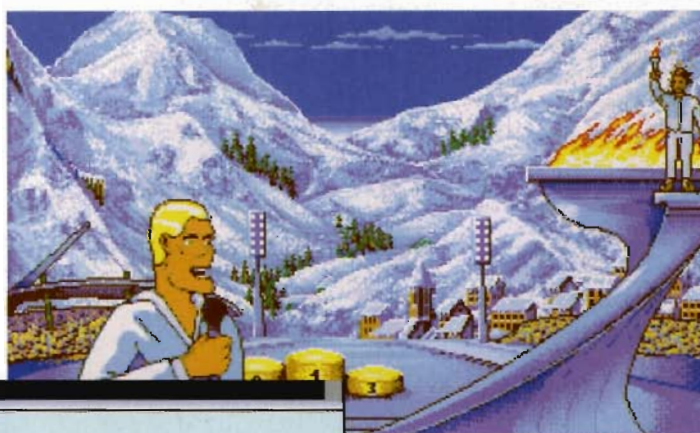
There is a practice option, so you can try and get the hang of them, but I recommend that you just challenge your friends to a bobsleigh competition and scare yourself to death from the comfort of your own home.

Daniel

Snow business like snow business...

SUPERSKI 2

MICROIDS ■ £24.99 ■ ½ meg ■ Joystick ■ Out now



No. No. Anything but that.
It's Jimmy Hill! Aaaaargh!



Keep that tummy trim with Jane Fonda's Sub Zero Workout



Half-way down the slope and already everyone's sucking a boiled sweet to stop themselves feeling sick



Hey! You can see my house from up here

VISION

GGGGG

Very slick. The bobsleigh is especially effective.

AUDIO

GGGG

Nice tunes, but the FX are thin on the ground and very quiet.

PLAYABILITY

GGGGG

Most of the events are immediately playable and stonking good fun.

ADDICTION

GGGGG

A welcome change, which deserves to do well.

81%

HAGAR



THE HORRIBLE

The world's favourite Viking is ready to storm your computer screen ... Help Hagar eat, fight and drink his way around the globe in search of loot – oh, and don't forget to make sure he brings back enough souvenirs for his wife, Helga, or he won't get his supper! Join Hagar and his friends in this action-packed platform adventure, you're guaranteed to have fun!

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Please check availability before ordering. Screenshots shown from Amiga version.

> DMI

KINGSOFT

American tourists ahoy, it's...

CASTLES

INTERPLAY ■ £29.99 ■ 1 meg ■ Mouse ■ Out now



The castle is surely one of the most stupid housing ideas in the world. They're cold, draughty, unhygienic and take years to build.

And then hundreds of years later, they fall to pieces and American tourists come and trample them to the ground in their loud Hawaiian shirts and take pictures of all the rubble because it's "quaint".

No, castles are not high on my list of great places to live. But here comes a

joys of laboriously dragging huge chunks of stone across the country to construct a big, smelly castle.

In fact, I think the only reason people lived in castles was because they took so long to build that they had to live in them, or they'd have wasted half their lives building very big and heavy garden sheds.

So, can you make an exciting game out of such a dubiously entertaining subject? Well, almost. Naturally the

rather sedate pace of such a task is going to startle the hardcore shoot-'em-up junkie, so if you feel that applies to you then go and paint your toenails or something.

On the other hand, if you're a more laid back kinda person who likes to ponder over problems and stroke your chin in a thoughtful, Jimmy Hill-type way, then stick around and we'll get stuck into Castles.

Well, to state the obvious, you've got to build castles. Rather easy, right? Well, in theory, yes it is. A bit of a drawn out process, but easy.

You just design the castle, making sure you stick loads of walls in for no good reason all over the place and silly towers just for a laugh, hire some peasants to actually build the thing for you, tell them which bit to start work on and leave them to it.

When they've finished, tell them to start work on another bit. And if you don't build the walls at the same rate, they become unstable and the whole thing crumbles to the ground. Not particularly tricky, and to be honest, it's too long-winded to be any fun either.

So, just to keep your regal mouse button a-clicking, there are a profusion of other kingly tasks for you to turn your attention to.

Recruiting and maintaining an army in case of attack is always important.

Keeping a close eye on your spend-

ing should prevent you running out of readies, and if by some stupidity you do run low (ahem, like I did) then just up the tax rate and take it from the little people.

And every now and then, you'll be approached by one of your subjects asking for some divine advice from your good self.

So Ethelred the Obscene has been bothering livestock again, has he? Will you let him off? Will you send some knights round to give him a kicking? Or will you have some of his more tender organs removed with a large axe? Decisions, eh?

Everyone knows that a good medieval king just chopped everyone up, and it's pretty good fun bellowing "off with his doodahs!" at the monitor.

You don't just make decisions concerning the private functions of your more dubious peasants, either. You could become embroiled in a scrap between two feuding dukes or something and have to prevent Civil War. Or you may be approached by a rival king who offers a truce. Do you trust him, or do you chop his head off? Exactly! You're getting the hang of it already.

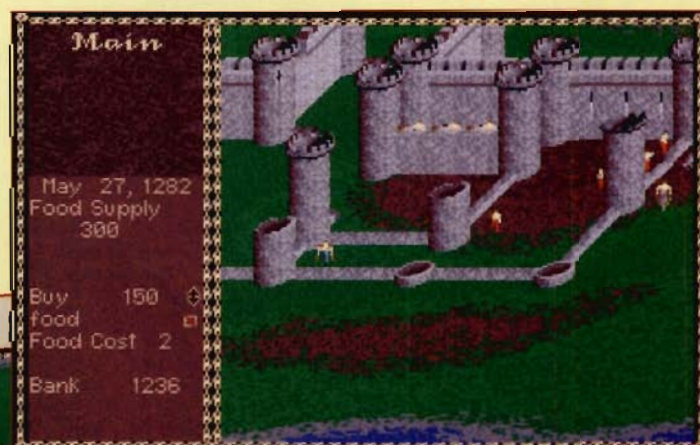
All the while, just keep an eye on how the castle's coming along. Give the little fellas a holiday now and again, make sure their pay is just enough for a scabby loaf of bread and some dead pig, and they'll be as happy as Larry. Whoever Larry is.

Inevitably, you'll come under attack and be forced to defend your half-built homestead. This is where the army comes in. Strangely enough.

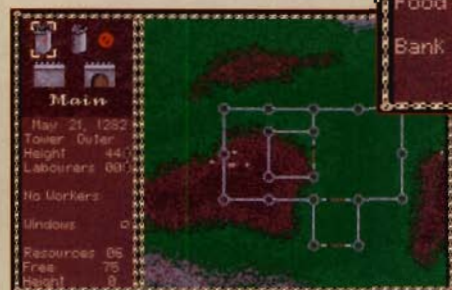
You'll be given ample warning of where the enemy are attacking from, and then you get to arrange your archers in the towers of the castle, and along the walls, and set your infantry



Brian Blessed looks on in a disinterested way, while the tall one from the Bee Gees has a whinge



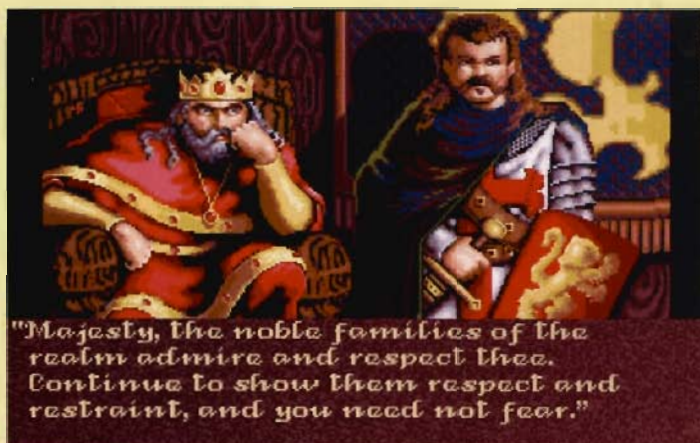
I suppose I'd better buy some food for the workers or they'll probably start moaning again, just like when I introduced the 24-hour working day



Here's my original castle design (note the stupid little wall at the top)



And here's my castle a few millennia later. Now watch some scumbag knock it down



The people trust me! Suckers! Double taxes all round, methinks!



Now, here's the perfect example of how not to build a castle. No walls, and some very short towers. Brilliant.

facing the enemy. When they're in sight, click on the infantry and watch them scuttle off to get beaten up while the archers do all the work and kill the enemy from afar.

If the enemy get close enough, they'll start to topple the walls and undo all your hard work.

The enemy also have another rather fiendish contraption. It's like a big tent on wheels full of dead pigs and stuff. They wheel it up to a part of your castle, usually one of the supporting towers, and then all the gas that builds up inside the pigs as they rot explodes and the wall collapses covered in bits of pig.

Very tasty. Who said chivalry was dead, eh?

After the battle, providing it wasn't a complete massacre, you start to repair the damage and mutter under your breath about what those dastardly Celts can do with their battleaxes.

And so it goes on until you've finished your castle, at which point you get to go to bed with a nice mug of Old Rumble's Gut Rot Real Ale and have a snooze in your new house. Probably (I couldn't actually finish my castle without running out of money).

Time to change into my Criticism Hat now, for a bit of nit-picking. First of all, it's slow. Not slow in a "badly programmed" sort of way, but slow in a "sit watching for 15 minutes while some stick men slowly build a wall" sort of way.

This means that it takes absolutely ages to build a proper castle, as they're

usually made up of about 50 or so sections. Plus, and this really annoyed me, the manual doesn't actually contain instructions as such.

It tells you what to do in the form of a waffly tutorial all about some king or other being told how to play Castles by one of his chums. Very funny (not!) and very useful (double not!). This meant that for ages I was watching absolutely nothing happen and I had no idea why.

A simple step-by-step list of instructions would have made it so much clearer, but instead you have to wade through endless crap medieval puns to find out where you're going wrong.

Other niggles are the jerky scrolling, which makes the combat a real drag to watch and control, and the fact that it's sometimes hard to tell whether or not you actually did click on the options.

Some nice clear icons wouldn't have gone amiss. Still, even after these

gripes, I quite enjoyed playing Castles. But it took a while. Let's just say that if you're looking for an instantly appealing game then you should run away from this screaming.

But if you like a bit of strategy with some building site-type bits bolted on, and you can ignore the sloth-like pace of it all, then this may suit you.

All in all, a nice idea that just doesn't work in the long run.

Daniel



Phew! The sweat and blood of all-out war splatters the screen as the stick men put the boot in



Huzzah! My little stick men march proudly into battle



And despite the considerable handicap of being stick men, my lot win the battle! Amazing!

VISION

GGGG

Very nice stills, but jerky scrolling and dismal sprites.

AUDIO

GGGG

Limited. An uninspired period tune warbles throughout.

PLAYABILITY

GGGG

Highly impenetrable at first, second and third glances...

ADDICTION

GGGG

...but stick at it and you may find something rewarding.

63%

cheat mode

The Gamer gu SPECIAL FO

Before you go diving head first into the warzone, you need to know what your enemies are up to, so it's a short trip to the Missions menu.

The missions can be performed in any order, although if they are played in order a story will unfold and your actions during a mission will affect the next mission and so on and so on.

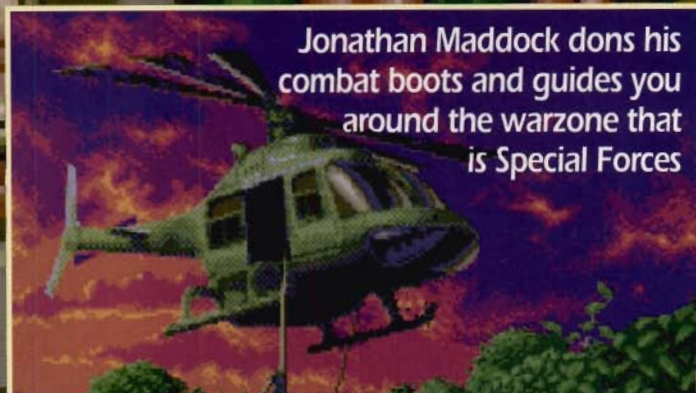
Once you've chosen your mission, read all the subsequent information. If you miss even one bit, you will undoubtedly mess up the mission.

Obviously it's better to start off at Conscript level because you will

find that the enemy won't be as aggressive and there won't be as many of them. I don't really need to tell you that, but this is the ultimate guide, so I have to. Editor's orders, you see.

Weapons are next and they're very important indeed. If you are just practising then you need to take a wide range of weapons with you, so you know how they perform in the heat of the battle.

When the actual mission comes around, you will need to be very careful in choosing weapons. For example, if the mission requires you to blow up some fuel dumps, you will need some explosives -



Jonathan Maddock dons his combat boots and guides you around the warzone that is Special Forces



fairly obvious, but remember not to give just one man all of them.

Try if possible to share them out between the team - then, if one member of the squad gets captured or killed, you will still be

able to complete the mission. If you select a stealth mission, remember to take weapons which are light, so you can move faster, and which don't make too much noise, because you wouldn't be

Five general playing tips by Norman Schwarzkopf

Stealth missions require extreme, err stealth, so a handy feature in Special Forces is the camouflage option. Depending on what level you are playing the game at, the enemy will find it very hard to spot you, but they will eventually find you.

It's best to use the peek-a-boo tactic which is to hide, wait for the guards to pass, run to another hiding place and so on and so on. Remember a team member can only camouflage himself if the surrounding terrain is suitable.

Another tip is to use the camouflage option while undertaking an attack mission. This time, camouflage your men, wait for the enemy to pass you by, then pop up and shoot them in the back. A bit underhand I know, but hey, that's Special Forces for you.

Diversions are very handy while doing any kind of rescue mission. By planting the remote controlled explosives a little way from the enemy guards then letting them off, the guards will move away from the prisoner leaving him more or less on his own. This gives you plenty of time to get the hostage and then the helicopter.

The most effective way to destroy enemy patrols and guards is to use trees, buildings and so on as a line-of-sight cover for your men.

You now have the element of surprise and it makes life so much easier because you can shoot the enemy before he can shoot you. It also saves on bullets because you're not firing all over the place.

One of the best tips I can possibly give you is the Blow the Bridges to Hell tactic. In some of the missions there are only one or two bridges. Set a remote explosive right where you start off, then make your way to the bridges, hide in camouflage mode and set the explosive off.

The enemy will run to see what the explosion was. Now plant explosives on the bridges, run across the bridge towards your mission objective and blow it up, leaving loads of enemy soldiers on the other side of the river and you with a much easier job to do.

In general, always keep your wits about you. Keep those eyes skinned for the enemy. Always check on how much ammunition you've got left and most important of all, keep checking where your men are if they get split up. Remember kids, it's war out there.

ide to RCES

Mel Gibson's guide to weapons



1 Browning pistol

This is the stealthiest of all the guns, but unfortunately it has a slow rate of fire, so it's not very good when you're surrounded by the enemy.

Not bad to have as a secondary gun because it won't gain much enemy attention, it's light and you can carry up to a maximum of six magazines.

2 Grenades

Grenades will only destroy buildings, machine gun posts and enemy soldiers. They will attract a lot of attention. Ideal for making good distractions, but always use a soldier who's almost dead because once you've let them go, the enemy will be upon you in a matter of seconds.

3 LAW rockets

LAW Rockets will destroy all targets except for bridges. They must be used over a long distance as they need the distance to arm. They will attract the same amount of attention, so get ready to get out of there quick once you've let them go.

4 Sterling machine pistol

This is a rapid fire, high power, automatic weapon. It can fire 34 rounds every magazine, it's fairly light, but it makes loads of noise.

It's best used for an attack mission, but sometimes it's handy to have one on a stealth mission, because if you get found out and it's time to kick some butt, this is the ideal weapon for handling lots of enemy soldiers.

5 Lee-Enfield rifle

This is the best for sniping. It has a slow rate of fire, but is extremely accurate. Ideal for stealth missions, especially the assassination missions because you can pick your target off from long range.

6 Laser Target Designator (LTDs)

Essential for some of the later missions. It's a handy little device to designate targets for later airstrikes. It's entirely computer operated – all you have to do is leave it in the right place.

At a set time it will emit a laser beam which will allow any airstrike to be accurately pinpointed. Fairly light to carry – each member of the squad can carry a maximum of nine LTDs, which is more than enough.

7 Explosives

One of the best weapons in the whole game. You run into an enemy camp, set five or six or maybe 16, run out again to safety, hit the keyboard and Boom!

All the explosives are remote controlled, ideal for stealth missions because you can set them off at the end of the mission without attracting attention to your squad.

8 Engager machine rifle

The heaviest weapon of them all, thus making your men very slow. It's a high power automatic rifle, just like a big brother to the Sterling machine pistol. It's more accurate than the Sterling, but just as loud. This gun should only be used on attack missions.

very stealthy if you started chucking grenades all over the place. Special Forces is one of those games that is easy to play as long as you use your common sense.

Once more, crush your mate's ego with...

INDY HEAT

STORM ■ £24.99 ■ 1/2 meg ■ Joystick ■ Out now

There's nothing quite like beating your friends to a pulp, is there? Not in the real sense, of course. Not in the "getting a big stick and hitting your friends repeatedly about the head with it" sense. That isn't clever at all. In fact, it's illegal.

What is fun is beating your friends to a pulp in the "being really, really good at computer games and embarrassing everyone by winning every time" sense. Now that is fun.

And, lo, the Software Houses did recognise this need to triumph over one's peers in the course of digitised entertainment. And, yea, they did create the Multi Player Option and it was good, and it did allow all and sundry to gloat and jeer at their friends who could not get the hang of the controls.

And, verily, everyone had a really good laugh with the exception of the kid that nobody really liked who had been lumbered with the dodgy joystick with the Fire button that didn't work.

And so we find yet another multi-player extravaganza plopping into our collective laps. It's Indy Heat, in case you make a point of never reading the title at the top of the page, and it's quite good indeed.

But, and this is the big question that hangs over every multi-player game, is it any fun on your own? What if you've got no friends, or you live in the Australian outback? Is it worth shelling out for a game that's really only worth playing with other people?

Thankfully, in the case of Indy Heat, this problem doesn't occur. Even on your own, it's a rollicking little fella.

The basic idea is fairly simple. You take part in a series of races against three other cars, of which two can be controlled by other players. So, you've got four little cars hurtling round various tracks, each with its own torturous bends and niggly bits. And the idea is to complete a set



Don't forget to purchase a green strip for your windscreen that says "Trevor and Beryl" - it could be the difference between first and second place

number of laps before the others. Obviously really.

Mind you, you'll have to take into account the technical specifications of your car. If you don't keep improving it by spending your prize money, then you'll find yourself running out of fuel or breaking down every two laps while everyone else keeps zooming past you.

And those aren't the only tactics you'll have to employ. If you really want to win, you'll have to play dirty. Smashing your opponents off the track isn't just fun, it's downright essential.

Another clever trick is to ram them up the bum while they're in the pits and send them flying back into the race with

hardly any fuel. Arf arf arf. There's also the added bonus that you might kill a few members of the pit crew.

And while we're on the subject of silly little features, you can make it that bit more challenging by reversing all your controls. For masochists only...

The graphics are tiny, but this gives them a bit of extra zip, and means that the tracks can be more fiendishly designed due to the smaller sprites.

There are some nice "touches", as we say in the trade. For one thing, you can choose what your driver looks like, and you also get to see the little men in the pits running about and getting run over. Not graphically brilliant, but they do their job and look "groovy", as advertising person Simon Lees put it.

The sound's actually quite "groovy" too. As well as the little vroom noises, you also get some speech telling

A well-deserved victory for the unbearably sexy racing driver in red

VISION
GGG●●●

Small, but cute and they do their job.

AUDIO
GGG●●●

Reasonable. The speech is a handy addition though.

PLAYABILITY
GGGG●●

Get a few mates to join in, and it's great. Alone, it's still good fun.

ADDICTION
GGG●●●

Not really enough tracks, but you'll pop back to while away a few minutes.

81%

you when to pit for more fuel. Just when you're in the lead, you're guaranteed to hear a little voice say "Red Pit". Typical. There's also a fairly rockin' tune with guitars and stuff. Very pleasant on the shelf-likes.

All in all, Indy Heat is a "nice" little game. Not outstanding by any means, but the sort of game that you'll come back to.

"Oh, I'm a bit bored. I know, I'll have a quick game of Indy Heat." That sort of thing. With only 11 tracks to get used to, it might not have much of a long term challenge, but it's a laugh all the same. Worth having, methinks.

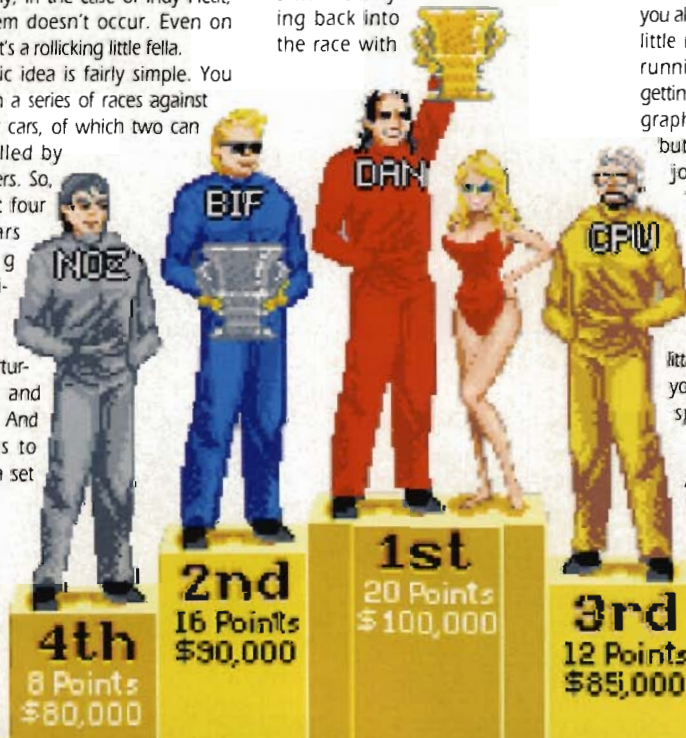
Daniel



Oooh, a bit of good-natured jostling by the pits there

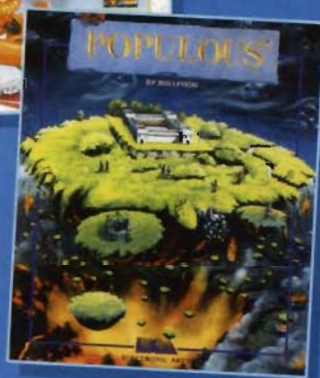


You can never find a parking spot when you want one, can you?



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VIDEOKID THE SHORT & FAT Gamer compo (not)

Yes indeedy, it's another Gamer compo and this time it's a long thin one. A new improved oblong shaped compo, in fact. And it's not just a compo either!

If you can't be bothered to post it to us, just cut it out and use it to teach youngsters the basic rules of geometry. You'll have to supply your own rulers and protractors though. A hundred uses, guaranteed!

On the other hand, if you fancy snaffling yourself a free copy of Gremlin's robust and fruity VideoKid, then simply fill in the form below, answer the almost illegally easy question, cut around the dotted line (kids, get some scissors to help you with this) stick in an envelope, and bung it our way addressed to the Short Fat Gamer Compo (Not) at our usual abode.

We've got 15 copies of said software sauciness to give away - that's about £300 worth - so you're in with a good chance of winning (providing only 14 other people enter).

Get your entries into our clutches by July 31 or we'll post them right back to you with a sarcastic sneer.

The editor's decision is final, and anyone who argues can step under the fighting tree. Employees of Gremlin or Europress can't enter, and neither can Noel Edmonds. Ha ha ha!

ENTRY FORM

**Q. What video features little green
monsters going bonkers at Christmas?**

- a) Brief Encounter ☐
- b) Gremlins ☐
- c) The Hip and Thigh Diet ☐
- d) Revenge of the Bonkers Christmas Monsters ☐

Name

Address

Telephone

Send your entry to: The Short and Fat Gamer Compo, Amiga Computing,
Europa House, Adlington Park, Macclesfield SK10 4NP

So just what is

EYE OF THE

US GOLD ■ £35.99 ■ 1 meg



My team, played here by the Banana Splits, prepare to enter Darkmoon

What a clichéd world we live in. Everything comes and goes in such a predictable way. Take music for instance.

One minute everyone's wearing flares and listening to those Happy Monday fellas, and the next thing you know, it's all bleeping techno music, B&Q dust masks and Vicks vapo-rub (and you call that predictable? - Ed).

And what about computer games, eh? That is, after all, what we're here to talk about. Trends come and go in this cosy little world as well.

There was, for instance, a time when Ultimate were the grooviest company on the planet and any game worth its salt was an isometric 3D arcade adventure. Unfortunately, people eventually cottoned on to the fact that all the Ultimate games were the same, but with different graphics. Bye bye Ultimate.

And then there are shoot-'em-ups. They never really went away, but I'm sure we're all familiar with the 'lone spaceship against several billion enemy craft and a big end-of-level baddie'-type scenario.

Or how about the kidnapped girlie who sparked off a zillion beat-'em-ups? Or the ubiquitous cross country car race? Oh no! Total cynicism attack! Are there any new ideas left?

Probably not. And so we come to the very latest computer trend - the role-playing game. There are two distinct types. You've got the strategy-ish

3D version, like Space Crusade, Shadowlands, and Legend. And then you've got the "blimey, it looks like I'm actually there" type, like Dungeon Master, Eye of the Beholder, Elvira 2, Abandoned Places, Black Crypt, Knightmare et al.

And, well blow me down, just as the RPG bandwagon is picking up speed and all and sundry are leaping aboard, along comes the sequel to one of those original dungeony faves.

The trouble with the current overkill on RPGs is that there's very little imagination being used. Every single time, it's the same old story. Four adventurers battling it out deep in some dungeon or other, trying to vanquish some unpronounceable evil that's woken up



Disaster! Fleeble's dead! But can this spooky thing help?

with a bad attitude. It's nearly always the same story, it's always the same control method, and even the graphics look the same. It is, to be perfectly frank, getting a bit tedious.

However, each game is rather good, and that's the annoying thing. The same goes for Eye of the Beholder 2. It's chronically unoriginal, but it's also a splendid game in its own right. Let me explain...

EotB2 (as it shall be known hence-

forth to save my poor fingers) has all the RPG clichés you know and love. You select your characters, you name your characters, you fiddle with their attributes (ahem) and then you click on the direction arrows to move them around and on their weapons to attack. You cast spells, you find keys, you solve puzzles, and it's all very slick indeed.

The quest starts in a forest, and you must find your way to the Temple of Darkmoon and defeat the spookiness within. On your way to the temple you can hone your battle skills by beating up some wolves, and if you're lucky you'll find some hidden rooms with goodies in them.

Enter the temple, kill the religious nutters guarding the entrance and get adventuring. No surprises there really, although the forest section is quite a nice scene-setter and it does ease you into the game.

There's just not a lot you can say about EotB2 that hasn't already been said about any other RPG. Yes, it's got really good graphics and plenty of variety, from the forest to the swanky temple to the dingy dungeons, which add plenty of moodiness. The baddie sprites

Look out, it's Roxette with their deadly "rawk" singles! Or is it?



Just one of the many spooky and puzzling dead ends in Darkmoon



Oh no! The beard! It's a PC owner!

Making good use of the things that we find, things that the everyday folks leave behind...



a bee holder?

BEHOLDER 2

GAMER
GOLD

■ Mouse ■ Out now

are well drawn, but not very well animated and they tend to lurch towards you. A pity, but not terribly important as the overall "feel" of the graphics is very atmospheric and spooksome.

The sound is good too, if a little sparse, and complements the mood generated by the graphics. The ominous "it's behind yoo-oo" footsteps are particularly worrying and they genuinely make you feel uneasy as you prowl the corridors under the temple.

Some grinding noises for doors and levers, and some grunts and moans for combat just about make up the rest of the FX, but they do their job in a vaguely inoffensive way.

The playability is the tricky bit. There are so many similar games around at the moment that you've really got to judge them against each other to find the best. And I've done that, and on reflection I think that EotB2 is probably the best RPG so far.

All the others are certainly worthy of Gamer Golds on their own merits, but while this one just does the same old things as the rest, it does them with a

style and atmosphere that actually makes it an exciting game to play.

There are problems though, not least of which is the way that combat becomes very stilted with more than two baddies on-screen. Selecting spells and swapping members of the party takes up too much time and you often get beaten to death as a result.

It's also a fairly linear game, at least as far as I can get. You solve this puzzle which reveals a key which opens a door that reveals a baddie who leaves behind another key when killed which opens a door that leads into another puzzle. That sort of thing. This means that while you get a good feeling a progress, you also start to wish for a bit more freedom to explore by yourself.

On balance, Eye of the Beholder 2 is the best RPG around. If you've already got an RPG then think twice about whether you want another just yet, but if you're still pondering over which one to buy then I'd recommend this one. Hardly original, but there's life in the old dog yet. Just.

Daniel

You don't fool me. You're Jimmy Hill with a comedy moustache



Oh no! It's the PC owner again!



Always ready to welcome a small, scantly-clad dwarf into the party. Welcome aboard, you chirpy wee fella

VISION
GGGGGG

As usual with RPGs, you get slick and atmospheric presentation.

AUDIO
GGGGGG

What there is very good, but there's really not enough of it.

PLAYABILITY
GGGGGG

Not really suitable for beginners, but easy enough to get to grips with.

ADDICTION
GGGGGG

If you're not already plodding through another RPG, this'll keep you off the streets for a while.

93%



the source

B17 Flying Fortress

Microprose are changing their style radically for their next big release. It's a flight sim. Blimey. Daniel Whitehead says "What ho..."

In their seemingly endless quest to simulate every conceivable form of transport on the planet, Microprose are currently beaver away down in rural Tetbury to bring you high flying Hun-bashing with the B17 Flying Fortress. So what's it all about, eh? Let's find out...

Well, for starters let's discover exactly what the B17 is. A quick peek through the Eye Spy book of Aeroplanes (and the Microprose press release) tells us the following handy facts about the big cuddly ball of fun that is the B17 Flying Fortress.

The B17 is the great big chunky bomber that the Americans used in the Second World War. You've seen the film Memphis Belle? That was a B17.

And did you see that Steven Spielberg's Amazing Stories on BBC1 about a bomber with Kevin Costner in it? That was a B17 as well. The bomber that is, not

Kevin Costner. They're very similar but a B17 would've been more convincing as Robin Hood (a little bit of satire for you there).

Getting back to the matter in hand. For defence the B17 is covered in little gun turrets that spun around and shot the nasty Nazi planes down (and more often than not, they shot their own wings off and other stupid things like that).

Rather astonishingly, these gun turrets only held enough ammunition to fire for two minutes. Considering the missions went on for slightly longer than that, the gunner's job was not an enviable one.

The B17 is also quite a large plane. Hence its nickname, Flying Fortress. They flew in squadrons from American airfields down in East England, chugged across the skies to Germany, dropped lots of bombs willy-nilly, and then flew back in time for a cup of coffee, the rock 'n' roll barn dance and a



bit of snogging with the local lasses while their husbands were getting blown up in France. What a life.

Of course, things weren't quite as easy as that. I may have skimmed a bit on the flying bits. The idea of chundering through the skies in a wobbly sardine can, while smaller and faster enemy fighters zoomed all around you going "akka akka akka" and "die Engländer scweinhunden" isn't a lot of fun, really.

Even less fun was hanging in a

see-through bubble on the bottom of the plane and being expected to shoot the enemy with a gun that ran out of ammo or jammed as soon as you touched the trigger. Mind you, there was always the snogging to look forward to, I suppose.

So, Microprose have taken it upon themselves to scrunch one



the source



of these great, hulking war machines onto some floppy disks and let us experience the leather-clad thrill of flying one ourselves. And how have they done it? Here's how...

B17 will have all the usual flight sim trimmings that you'd expect from the 'Prose. There's a campaign framework to the missions, of which there are 25. After completing them, and providing the crew don't have any extra holes in their bodies, then you're allowed to retire and set up your own software house to make flight sims. Possibly.

The game also features some cute little touches that you won't find elsewhere. For starters, you get to choose which design you put on the nose of your bomber. You know, those sexy dolly birds who drape themselves all over the name of the plane. Like Bomber Bessie or, er, Edna.

Another quite groovy feature is that you can leap around the plane. Not in the physical sense of course, but you can jump from one crew member to another. So, if you get bored of just flying the plane, you can nip back and be

the tail gunner for a bit. Or the bomber. Or the navigator.

And while you're doing this, the computer takes over the rest of the crew so you don't plummet to the ground just for taking pot shots from the belly gun for a laugh or get shot to pieces 'cos your gunners are all asleep.

This means that you can play the game in loads of different ways. You can spend the whole mission locked in one of the gun turrets, or you could be in charge of the actual bombing. You can be responsible for navigating the plane, or you can be a traditional old boffin and fly it.

Or if you reckon you're really really hard, you can nip from one crew member to another and do absolutely everything.

I managed to wangle a go on an early demo of the PC version and the air battles are quite apocalyptic. Each plane that gets hit starts to belch thick black smoke from its engines. You can then follow it down until it crashes into the fields miles below.

Thankfully, Microprose haven't gone for the "total realism" option, so the guns have infinite

ammo. A game where you ran out of bullets after two minutes might be realistic, but it wouldn't exactly scream "playability" at you.

The sound effects were particularly beefy, with the thunder of the engines competing with the booming guns and explosions. Whether or not they'll be the same on the Amiga remains to be

seen, but the overall effect is astonishing.

And the moment you've all been waiting for, when will it be in the shops? Well, the B17 will roll out of the Microprose hangar in June for the PC, and us Amiga fly-boys will only have to wait until August to get our hands on it. Remember, patience is a virtue.



3D frolics down in the dungeon

LEGEND

MINDSCAPE ■ £25.99 ■ 1/2 meg ■ Mouse ■ Out now



Aha! I wondered where he went

So that's what a Berserker rage looks like...



Warrior goes into Incredible Hulk mode and, er, well he kills everyone, really

"Hey, it's a Dungeons and Dragons ride". So began that stupid cartoon where five American brats and a poney unicorn wandered around a vast land filled with dragons and monsters, and somehow never got killed.

And every episode they almost went home, but couldn't because they didn't want to leave the unicorn behind. Soft fools.

And did you know that the voice of that one with the shield was Ralph from Happy Days? Bizarre but true. He really went up in the world, didn't he?

I mean, trust the Americans to do a spin-off cartoon from a board game, of all things. Snakes and Ladders - The Movie, anyone?

In fact, they didn't just do a cartoon spin-off. No, we also got Dungeons and Dragons action figures (I know, I had one), D&D lunch boxes, and if you looked hard enough, you could probably find D&D yoghurt. And we also got the official D&D computer games. And by jiminy, they were boring.

No wonder everyone and their dog began trying to write a decent RPG for the home computer. And just our luck -

they succeeded. Now we get a new one every month. In fact, this very issue contains no less than four games with a distinct RPG tang. And this is one of them.

Legend shies away from the traditional first-person perspective, and plumps for the isometric 3D approach, not unlike Shadowlands.

Oops, that's given the game away a bit. Legend is, it must be said, very similar to Shadowlands. But it's also better in some ways, and worse in others. Let me explain.

The plot is the usual dribble about four adventurers ridding the land of evil, so we'll skip that and go straight to the game itself. You start by defining your characters, as per normal, by changing their names and, hem hem, their sex if you wish.

Then it's onto a map where you move your party, as an icon, to different towns. Enter buildings, chat to locals, get clues and buy weapons. Simple. Eventually, the clues should lead you to an adventurers' guild where you must prove your worth in the cellar.

And thus we go into the RPG bit. Simply get your team through the cel-

lar, and find a permit that will prove that you're a bunch of well 'ard warriors.

Along the way you'll have to master the art of reading and casting runes, pulling levers to open doors and, of course, killing loads of monsters.

So, what sets this game apart from the several million other RPGs on the market? Well, the spell casting is pretty in-depth. Rather than just finding spells and using them, you've got to use your magician to find scrolls, mix ingredients and read runes.

And it ain't easy. The manual helps you out plenty, but the whole magic bit is too daunting really and will put all but the most dedicated off. At least it's got spells in it, though.

The only really original option is the special powers that each adventurer has. Pressing F10 while selecting the appropriate bod will make them start doing whatever their particular forte is.

So for the magician it brings up the magic menu, while for the bard it brings up a list of magical tunes to play which will affect your team's attributes. The assassin becomes invisible and - this is my favourite - the warrior goes into a Berserker rage.

Which brings us quite nicely to the battles. Rather than just fighting one foe at a time, combat occurs when you stumble across a roving band of monsters. There can often be as many as five or six in a band, and all you have to do is press Enter and your team will get stuck in.

With all the special powers going it turns into a right big scrap and is really quite entertaining to watch.

Just put your feet up and chuckle as the warrior goes bonkers and squashes the enemy with a single blow. Arf arf

arf. The only trouble with Legend is that it constantly reminds you of other games.

The map section is identical to the outdoors section of Abandoned Places, the indoors bit is Shadowlands, the AutoMapping appears in Black Crypt and the spell mixing also appeared in the first Elvira game.

It's not quite as good as any of those games, but an enjoyable little chestnut for all its shortcomings. If you want a slightly more accessible RPG than Shadowlands, then this could be the one for you.

Daniel



Oh god. Ramblers at three o'clock. Thermos at the ready..



Where to next? Pub! Pub! Pub! Pub!

VISION

Clean, colourful sprites with plenty of detail which lend a good atmosphere.

AUDIO

The bard will play any of eight tunes, and some nice FX crop up too.

PLAYABILITY

Easy point and click interface, although magic can be a bit tricky.

ADDICTION

Like any good RPG, it'll keep your attention, but do we need another one?

86%

Mad about the boy!

(...and the NES...and the SNES)

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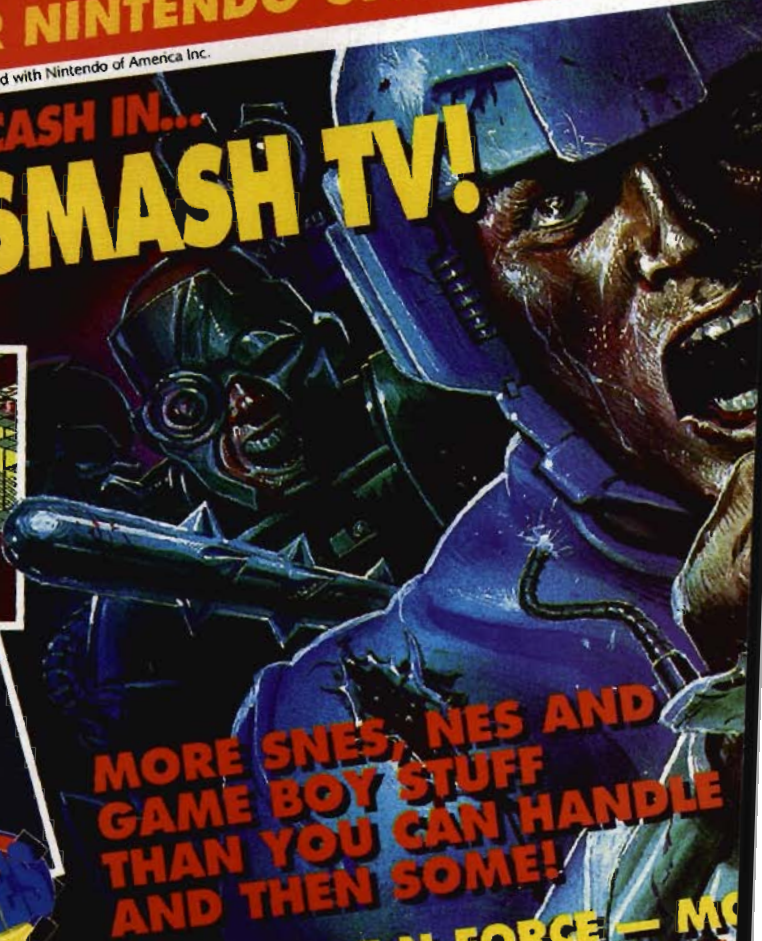
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Warning – parental

LEISURE SUIT

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Yes that poncing pervo is back! Larry Laffer hits your computer screens for a fourth time. Eh a fourth time, how can it be a fourth time when this is Leisure Suit Larry 5? Well my little pervsters, all will be explained... soon. First a little bit of history behind the man in the white polyester suit.

What can be said about Larry Laffer that is suitable to print? Oops, before this review gets too risky I'll have to do something.



Warning – as per usual this Larry game contains adult subject matter and parental guidance while playing the game is advised, so all you kids out there turn the page quickly and ignore the screenshots. Right, I'm now dealing with a mature adult audience.

Larry first appeared on the Amiga games scene a couple of years ago in Land of the Lounge Lizards which involved Larry trying, err, well, to put it bluntly, to sow his wild oats.

Larry 2 was titled Looking for Love in Several Wrong Places which had Larry trying to escape a spy-infested tropical jungle and trying to thwart the plans of the evil Dr Nonookie as well as sowing his wild oats (again!).

The third game in the series starred not only Larry, but a certain woman who features heavily in Larry 5 – Passionate Patti. Subtitled Passionate Patti in Pursuit of the Pulsating Pectorals, Larry again had to sow his wild oats while Patti had to rescue him from man-eating cannibal Amazon women.

Now to be honest, the Larry games aren't really that dirty. The first game was

fairly smutty, but the sex scenes were fairly naff and you didn't see anything that you wouldn't see on page three of the Sun.

However, lots of people objected and the game designers made Larry 2 a lot less smutty, but – and this is a big but – everyone who bought and loved the first game complained to the game designers saying it wasn't smutty enough.

So lo and behold, the game designers made Larry 3 the smuttiest. The graphics and sound in the first three games were fairly rubbish, but now in Larry 5, Sierra have found a way to convert graphics from the PC, and it has wonderful graphics and mega sound.

Larry 5, which is subtitled Passionate Patti Does a Little Undercover Work, features Patti as a super-secret agent spy working undercover (and under the covers!) for the FBI.

Meanwhile, Larry is working a low-level job for a porno prime-time TV show, America's Sexiest Home Videos, and the mob is out to get pornography out of the living room and back onto the profit sheet.

Together, Larry and Patti must take on the mob, the FBI, the music industry and the United States Congress in a mix of sex, thuggery and rock 'n' roll.

What the hell happened to Larry 4, you might well be asking. Well the Gamer team still haven't completed Larry 5, but Larry keeps on remembering things throughout the game and wondering himself where Larry 4 has gone, so maybe all will be revealed at the end of this one!

The game can be controlled by mouse or joystick, but to be honest the mouse is the best option. It uses a new "click and grope" interface which makes the game easy to control – it also means that there's no typing to do. It's so easy – you click

on the walk icon and then click on screen where you want to go and – voilà – Larry/Patti walks to the place you clicked on.

It's quite clever. Say you aren't doing very well – the computer will shout at you for being rubbish, but it might also give you a hint or clue on how to complete the part that you are stuck on or give you a friendly shove in the right direction.

The graphics in Larry 5 are fantastic. Sierra must have had a whole load of professional animators working on them.

In fact there were no less than 13 animators and seven background artists working on Larry 5, so we are talking Disney-type quality here. Soundwise?



It's the casino, time to win big money and go see the female mud wrestlers. I love this game...

Well put it this way – a guy called Craig Safan composed the music for the game. Wow, I can hear you all cry. Well, Craig's work has included composing for the Cheers TV show.

He also composed movie scores for films like The Last Starfighter and A Nightmare on Elm Street 4 and many others, and has been an Emmy nominee.

So there you have it – a stonking



I quote: "I like the look of your hardware and with my software maybe I could download onto your hard drive." I didn't write it

Here we are in the arcade, perfectly normal apart from the naked women holding balloons, that is



guidance advised, it's...

GAMER
GOLD

LARRY 5

recommended ■ Mouse ■ Out now



That's an oddly shaped ice cream sundae, better take a photograph and send it in to That's Life...



Here we are in Patti's limo, but what on earth can she do with that fish?

soundtrack. In fact Larry 5 had over 60 people working for it, but hey!, the Americans always do things bigger and better.

Larry 5 isn't crude. Well OK it is crude, but not crude as in explicit sex scenes and bad language. It's crude as in sexual innuendo and double entendres. You don't actually see anything, but the implication is there. For

instance when Larry is, erm, well let's put it this way, when Larry is getting a bit randy with a young lady under a table, all you see is the expressions on Larry's face. A lot of the humour is fairly childish, but it's not for children, if you know what I mean.

There's not really a lot else I can say about the infamous Larry Laffer and his white polyester suit, so I think it's time

to end this review before I get into trouble from Mary Whitehouse. If you are a fan of Larry then this is the game that you've been waiting for. Even if you're not a fan, I'd strongly recommend buying Larry 5 anyway, because that's the kind of guy I am.

The graphics – as I've said before – are fantabulous, and the sound is brilliant, so I can't whinge on that front. What

you do need is a hard drive. You can play it using two floppy drives, but it's really a waste of time and energy.

Even if you've got a hard drive, you still have to wait in-between "scenes" and at points the animation slows down to a snail's pace.

Forgetting all that though, Larry is still a damn fine adventure game and I would say the best yet out of the Larry series. If you want a smutty, sexy, outrageous adventure then Larry 5 is for you.

Right you lot, you can bring your kids back in now – we wouldn't want them to miss the rest of Gamer, would we?

Jonathan



Hurrah, this is what we want – schoolboy humour...



Here's Larry's boss Mr Scrueball, arf arf



Outside the airport and there's no sexual imagery anywhere. Drat



Oh look it's the mob, and just check out those comedy eyebrows



VISION

GGGGGG

Sexy, and I really do mean sexy graphics – quite astounding

AUDIO

GGGGGG

Brilliant sound and there's even some speech dotted here and there.

PLAYABILITY

GGGGGG

The animation slows down at points, but it's still pretty mega.

ADDICTION

GGGGGG

Just the will to complete the game will bring you back for more.

91%

This month

Last month

1	▲	NE	John Madden American Football 	Electronic Arts	£29.99
2	▼	1	First Division Manager	Code Masters	£7.99
3	▲	5	Project X 	Team 17	£25.99
4	▼	2	Rainbow Islands	Hit Squad	£7.99
5	▲	8	Space Crusade 	Gremlin	£25.99
6	▲	NE	The Manager	US Gold	£30.99
7	▼	3	Formula One Grand Prix 	Microprose	£34.99
8	▼	6	Scooby Doo and Scrappy Doo	Hitec Software	£7.99
9	▲	14	Lotus Turbo Challenge	GBH Gold	£9.99
10	▼	4	F16 Combat Pilot 	Action 16	£9.99
11	▲	NE	Manchester United	GBH Gold	£9.99
12	▲	NE	Eye of the Beholder 2 	US Gold	£35.99
13	▲	30	Golden Axe	Tronix	£9.99
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15	▲	19	Fantasy World Dizzy	Code Masters	£6.99
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17	▼	16	New Zealand Story	Hit Squad	£7.99
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20	▼	17	Jimmy White's Whirlwind Snooker	Virgin	£29.99
21	▼	12	Operation Thunderbolt	Hit Squad	£7.99
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28	▲	NE	Pacific Islands 	Empire	£29.99
29	▲	NE	Little Puff	Code Masters	£6.99
30	▼	11	Toyota Celica Rally	GBH	£7.99

Eight new entries this month, nine going up and fourteen going down. Touchdown! There is a new number one, and it's John Madden American Football by Electronic Arts.

Dan's tip for the top - Project X - continued to improve it's position by shooting up a couple of places and now finds itself at number three. Other notable new entries this month include The Manager by US Gold and Eye of the Beholder 2 by US Gold (again!). Pinball Dreams by 21st Century Entertainment makes the chart at long last.

Those bothersome budgets still plague the chart with 19 games compared to the full prices' eleven. Quite a few games disappeared from the chart this month. It's goodbye to A320 Airbus which will break quite a few hearts including our stewardess-loving news editor John "Come up and see my afterburners, girls" Butters.

It's also bye-bye to Harlequin which was my prediction for the top last month, but hey I'm only human after all (I beg to differ - Ed). It's tatty-bye to Shadowlands, that great RPG from Domark - I'm surprised that didn't do well.

Well it's time for those predictions. Dan the Ed has thought long and hard about his prediction and has chosen John Madden American Football to stay at number one for another month.

Well that's not very exciting is it readers, so I've chosen Eye of the Beholder 2 to rise up out of the dungeons and claim the number one spot, although I still think Project X might be in there with a shout.

Well I wonder whether I've got enough space this month (remember I ran out of space last month) to tell you about the chicken and the celery incident? Wow I've still got a few words left. Well the chicken goes into the barn and what does it see, but a wet stick of celery. The chicken starts clucking and grabs the celery and...damn I've done it again.

Jonathan



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Explosive action, shaken not stirred

COVERT ACTION

MICROPROSE ■ £34.99 ■ 1 meg ■ Joystick/keyboard ■ Out now



How hard are you? Put in a bit of training to make it easy on yourself

I gripped my Uzi tighter. My palms were sweating and my gloves felt sticky. I glanced over my shoulder. The motion detector was showing nothing, but I could have sworn something moved. The stun grenade booby trap was still intact. I went back to work.

The safe-cracking equipment did its job and I began to search through the papers. A name, a photo, a meeting place. I photographed them all for later use.

Carefully closing the safe, I moved across to the picture on the wall. I removed it from its resting

guards were behind him.

As they charged into the room, I rose from behind the desk and raked my Uzi from left to right. The guards fired back, and a bullet thudded into my body armour.

Seconds later, and the guards' bodies were hidden out of sight and I was continuing my work, the alarm bells shrieking out a warning. Hard to believe that only one hour before I'd been soaking up the sun in Rio.

Blimey! It could almost be Anneka Rice on the Holiday programme, couldn't it? But it's not. No, surprisingly enough, that is exactly what you'll be doing when you play Covert Action.

Yep, it's Microprose's long-awaited spy simulator.

Well OK, it's not really a spy simulator. It's actually billed as a "techno thriller", but there's no sign of drugged-up ravers in dust masks, you'll be glad to hear.

In fact, it's quite



Hang about! Who's the boss around here?

hard to compare Covert Action to anything at all. It's actually, gasp, An Original Ideal!

OK, so what do you do? Well, you take on the role of Max Remington, ace secret agent and inventor of that thing that shaves jumpers. And by the way, Max can stand for either Maximillian or Maxine, so there's none of this sexism nonsense here.

You'll be given your tasks by the CIA bossman (who looks alarmingly like ol' Gorby) and you've got to do them. But it's not that easy.

Rather than telling you what to do, the bossman just tells you that some terrorist organisation or other is getting a bit suspicious and you've got to find out what they're up to. How you do this is, more or less, entirely up to you.

You can tap into the phones of suspect organisations, and gain the info that way. You can follow enemy agents and find out who else is involved.

Or you can go for the obvious option and break into their buildings and have a rummage around to see what you can find. Slowly but surely

you'll build up a case file on all the people involved in the operation. You'll now have to find out all you can about these agents. Who they are, who they work for, what their role in the whole affair is.

You'll also need to steal incriminating documents and decipher them to discover what they're up to, and also what their relation is to one another. Keep this up and you should be able to figure out what they're planning to do, and stop it.

To arrest an enemy agent you need to first find out where they are, and then break in. Search the building and you'll eventually find them sitting around.

If you're sure you know exactly how they're tied up in all the dirty dealings, then you can arrest them - otherwise they'll just walk away from the charges.

Work your way through the organisation and hopefully capture the Mastermind behind it all. Capture all the Masterminds from all the enemy organisations and you get to put your feet up at the taxpayers' expense. Phew!

So, let's look at the four main sections in turn, shall we? First of all, there's Phone Tapping. This takes the form of a puzzly bit in which you have to cut off the flow of electricity to the phones without tripping alarms. And it's supernaturally hard. Luckily, it's not essential to progress.

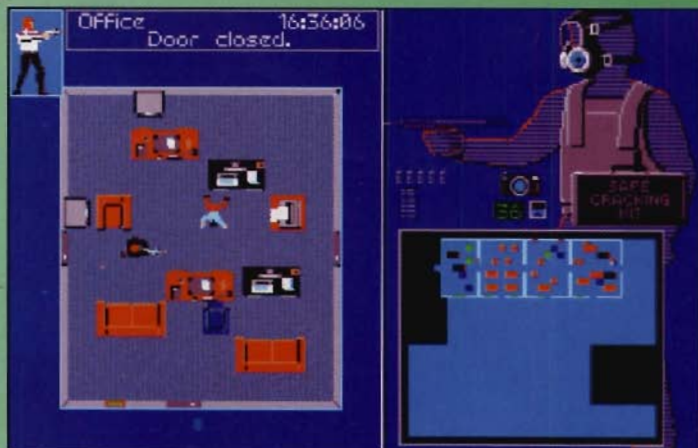
Then there's the Car

place and stuck the bug to the frame.

My informant had assured me that this was the building from which the Colombian Cartel were working. We knew they were up to something, but what? Telegrams had been traced, cash transactions were taking place, but what was it leading to?

My motion tracker showed a guard approaching from the south. I replaced the picture and took cover behind a desk. As the guard opened the door, my booby trap exploded.

The guard was hurled backwards in a cloud of smoke and flame. More



OK, hold everything. This is the Furniture Police! Look at the state of this room!



You see Sheriff, she was dressing up as the ghost to scare everyone away from the treasure...

Chase section. This is, unfortunately, utter crap. It looks terrible and it's very hard to work up any excitement at all about it. Just watching some little blobby sprites chug round an unconvincing city map. Ho hum.

Now we come to Code Breaking. This bit is good fun, actually. Each letter in the coded message actually stands for a different letter, so A could really be F, for instance. Work out what each letter really is, and the message starts to take shape. Simple, but fun and rewarding.

And finally, the Combat/Break In section. This is the best bit of all. Pick your tools carefully from the inventory and then start to move through the building. Shoot guards, rifle through desks, crack safes, use gas grenades, set up traps – it's great.

The control system does seem a little strange at first, but it soon becomes second nature and you'll be leaping over furniture and dodging bullets with no trouble at all.

On top of all this, there's always the question of who's involved, and can you trust the local information? Should you arrest the enemies con-

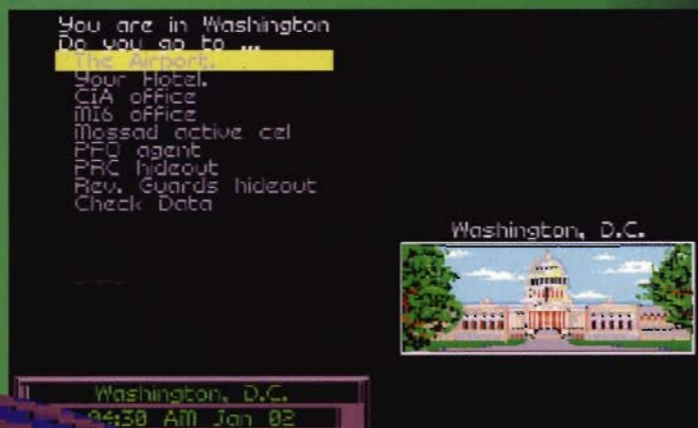
tact now, or later on? One wrong move and the rest of the operation goes into hiding and then you're really scuppered.

In short, Covert Action is massive. All the missions are interlinked, with all the enemy in cahoots and working towards some fiendish conclusion. Solve one mission, and you'll find that it leads on to the next. The whole thing slots together perfectly to create probably the first ever truly intriguing spy game.

There are a few moans. The graphics are a bit on the dull side, and the fact that you have to photograph a file to see if there's anything of use in it is a pain. This means that you waste precious film just looking in empty desks and stuff.

But what the hell? Covert Action is by no means a perfect game, it's not even brilliant. But it is an interesting and novel change from the currently creaking RPG bandwagon. You'll know already whether or not it sounds like your thang. If so, investigate it!

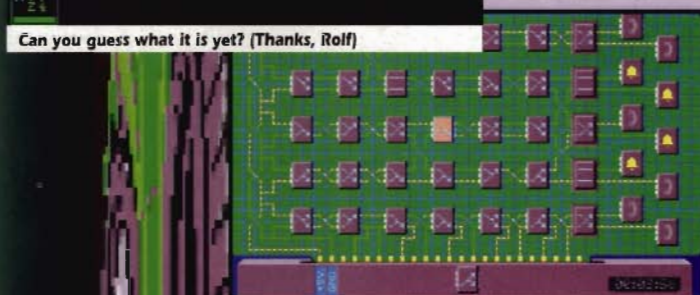
Daniel



Ah, so much to see. I don't suppose there's a tour guide, is there?



Can you guess what it is yet? (Thanks, Rolf)



That "oh-so-easy" wire-tapping section. Whaaat?!

VISION
Average in-game stuff, but some nice static screens.

AUDIO
OK tune, and suitable FX add that tense atmosphere.

PLAYABILITY
Initially it's a monster, but practice pays off.

ADDICTION
As one mission leads to another, you'll be drawn in!

87%

Always look on the bright side of life...

THE MANAGER

US GOLD ■ £30.99 ■ 1/2 meg ■ Mouse ■ Out now



Look at all these icons, I can't decide which one to click on next...



Oh decisions, decisions. Will Whelan be fit? Will Barnes demand more money? Will Burrows play as bad as last time? No wonder Mr Souness had heart trouble...

Yes, this is a joyous day for every football fan in the whole world. At last, a decent football management game.

Hurrah, thank God! Somebody, somewhere has got some brains left. This is the footy game computers have been waiting for.

Do you remember Football Manager on the Spectrum? What a footy game that was. Since then we've had rubbish football management game after rubbish football management game – well, apart from Player Manager, and even that was only an extension of Kick Off.

But now it's US Gold to the rescue with Software 2000's The Manager. The Manager is controlled via the mouse and an icon system, thus making it really easy to play, especially for the beginner or the non-football fan.

What is a bit unique about it is that four players can take part, which is a bit of a first for a football management game. There are three types of game – the one-year game, the three-year game or the unlimited time game.

The one-year option starts you off in Division One, giving you the chance to

reach the top of the league by the end of the season.

On the other hand (or should that be foot?) there is the unlimited game which starts you off in Division Three, and first of all it's your duty to survive the dreaded drop, because if you don't it's game over, man.

Your team will start off being fairly rubbish, but as the seasons pass you will gain experience and slowly get better. As well as the FA Cup there are, of course, the European competitions, where you could find yourself battling against the giants of Europe like Juventus, Marseille and Inter Milan.

To be honest, I don't think one page is enough to describe all the options in The Manager, because there are literally hundreds of 'em. Well there probably aren't hundreds, but there's enough to give you a slight headache.

To give you a bit of an idea, I'll go over a few of them. Take the Training option, for example. You have to decide how intense you want the training and whether you want to train on tactics, shooting and so on.

You have to decide which training camp you want, which sponsors you want, what stadium improvements you require, whether you wish to raise ticket prices and all the time, not forgetting the cut-throat world of transfer deals and the important task of choosing the team.

Blimey, that's only about ten per cent of the game, so as you can see, The Manager is one hell

of a huge experience. I haven't even got to the good bit yet – match day!

When Saturday finally comes round and it's time to get the lads out on the pitch to parade their skills (ooo-er) then it's time to admire the impressive 3D animation sequences.

This is what makes The Manager stand out from the other so-called "exciting" football management games. You actually get to watch the highlights from the match, you see all the goals, the near misses and even the complete "donkey" shots.

It gets quite intense at certain points and you find yourself in a football world of your own. Imagine – you need a win to go top of the league, there are ten minutes left... you find yourself screaming foul language at your players and it can get quite embarrassing!

The graphics are quite fantastic – they're very small, but because they are so detailed you can easily work out what's going on.

The atmosphere that this part of the game creates is unbelievable – if you're a true football fan then this is definitely for you.

I can't really think off anything bad to say about The Manager, other than that it might not appeal to a lot of people because off the time that you have to spend playing it.

Remember, it's a management game not an arcade game – if you want an arcade game then I suggest you



Yes, it's there. Liverpool put one in the old onion bag and I bet the other team are as sick as parrots

Newsexpress Sport

LIVERPOOL IN SUPER MATCH
2:0 AGAINST BOLTON WANDERERS



VISION
GGGGG
Good graphics that give the game that polished feel.

AUDIO
GGGGG
Not much apart from crowd cheers while watching the game.

PLAYABILITY
GGGGG
Nice easy icon system makes it great fun to play.

ADDICTION
GGGGG
Football fanatics may never put their Amigas down again.

89%

buy Kick Off 2. The Manager is the ultimate football management game for the ultimate football fan – I loved it to bits.

On a sad final note, commiserations to Manchester United fans for their team losing the championship in such terrific fashion, and I'm not just saying that because I'm a Liverpool fan, arf arf arf.

Jonathan



"THE BEST RPG/ADVENTURE GAME OF THE YEAR,* JUST GOT BETTER...!!"

300,000 years ago, the Ancients ruled the galaxy, and then destroyed themselves in a suicidal war, leaving only ruined cities and devastated planets. Even today, the ruins of the Ancients are puzzling, mysterious and

dazzling artifacts are still unearthed at various ancient sites

throughout the Spinward Marches.

Now one of the ancient sites has

mysteriously sprung to life, running amok and threatening to destroy an entire world. Millions will perish if the ancient site isn't stopped. Ancient sites spread across a dozen worlds, hold clues, and even ancient artifacts that may neutralise the destructive site.

But ultimately, you'll need to find the legendary Ancient leader who has been reportedly dead for 300,000 years!

Only you can discover if the legend of the Ancient one is true as you play Traveller like you've never played it before in Megatraveller 2: Quest for the Ancients.



For years, Traveller was the undisputed champion of science fiction role playing. A game of unprecedented magnitude, there was no aspect of spacefaring adventure that Traveller didn't handle, and handle exquisitely. Then along came Megatraveller, a complete redesign of the original Traveller that stands as one of the most remarkable gaming achievements of the last decade.

Superbly designed, Megatraveller was quoted as the pinnacle of science fiction role-playing.



Now, the best RPG/Adventure game of the year just got better!!

The game begins as you and your party set out to stop the slime producing Ancient sites on Rhyllanor. There are 127 detailed worlds to explore with hundreds of cities and millions of square miles.

You can travel from planet to planet aboard commercial starships, or one of your characters may own his own ship. Explore hundreds of locations including cities, data terminals, starships with deck plans, gambling casinos, stores and shops, taverns, trade and commerce outlets, vehicle rental locations, character recruitment centres, crashed and abandoned ships and Ancient sites.

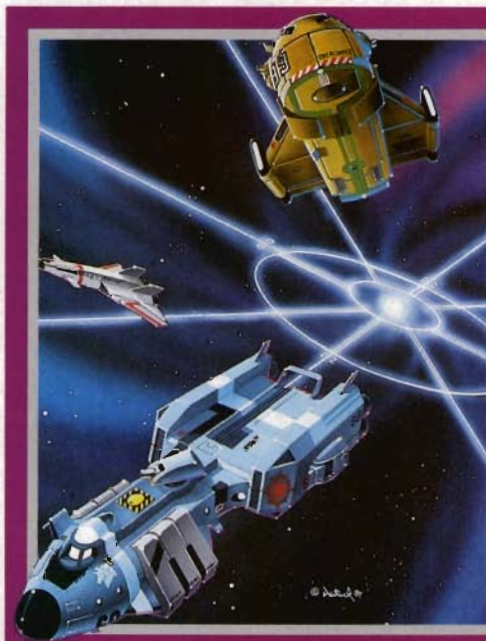
At each of the Ancient sites, you can discover artifacts and relics that can help the crisis situation on Rhyllanor. By helping the situation, you will receive very significant rewards, which will help you to buy passage, or even acquire your own ship so that you can continue your quest.

Throughout your adventure, you will be pursued by agents of the secret organisation.

As well as a main plot, there are dozens of sub-plots on the various worlds, and even aboard starships, to keep you and your party busy.

You will be confronted with interesting adventures filled with mystery, danger and intrigue.

Megatraveller 2: Quest for the Ancients is a unique and innovative role-playing adventure that goes leaps and bounds beyond Megatraveller 1.



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MEGATRAVELLER 2 QUEST FOR THE ANCIENTS

The game features the most advanced and comprehensive character generation system ever developed as well as the most intuitive combat system for ground and space conflicts. The overhead perspective is equally unique, showing your entire party from a perspective that realistically represents a large, modern city.

Megatraveller 2 features a much more graphic-intensive presentation than Megatraveller 1. An enhanced trade and commerce system is implemented in Megatraveller 2. The new economic system is much more realistic and benefits from the substantial increase in worlds.

Megatraveller 2 uses the PAL system: you are the leader of the party, and the others act as your friends. You can give orders, but acting intelligently based on the skills and the characteristics they possess, they may not follow your instructions if they believe that

different actions on their parts will ultimately help you in a more effective way.

There are hundreds of NPC's to meet, converse and trade with during your adventure.

Overall, Megatraveller 2: Quest for the Ancients is an all new game with exciting advanced features.

The sheer size and scope of the game with over 127 different worlds to explore will keep you playing time and time again. This together with the superb graphics and animated sequences and the revolutionary PAL role-playing system, make for the most exciting adventure yet seen on a Home Computer.





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AC in conjunction with Alternative Image is offering three copies of Real3D – one of the premier ray tracing packages on the Amiga.

Two of our copies work with a standard unaccelerated Amiga. The third is designed for the power players who work on machines equipped with accelerators boasting maths co-processors.

That's not all, folks!

As well as the amazing Real3D giveaway, AC and Alternative Image are offering three copies of The Big Alternative Scroller to the runners up. TBAS will literally transform your home-based DTV from the amateur look of static credits to stylish scrolls and amazing intros, thanks to the program's own selection of colour schemes and designer fonts.

COMPETITION

Amiga Computing and Alternative Image do it yet again with another amazing software giveaway, including Real3D and Alternative's very own Big Alternative Scroller

ENTRY FORM

Please tick the box appropriate to your particular machine:

Standard Amiga

☐

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Questions

1. Will reflective objects within a rendered or scanline image reflect:

The entire world around them including other objects

☐

Just the sky and the ground

☐

Only the lights

☐

2. What type of ray tracing package is Real 3D?

A solid modeller

☐

An organic modeller

☐

An Airfix modeller

☐

3. Is Henri Bujko:

The creator of Real3D

☐

A maniacal disciple of chaos

☐

One of the founding fathers of Alternative Image

☐

All three...

☐

Send your entry to: The Alternative Image Competition, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP

Don't forget to supply your name and address, plus a daytime phone number if available.

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- 1875 Boot X 4.47 the latest version
- 1874 Teckno music by Cubik (score city)
- 1873 Powerbench 1.0 (good WB disk)
- 1872 Pogo (brill arcade game)
- 1871 Aixix Unknown territory demo
- 1870 Ball Lightning (game)
- 1869 Down Hill challenge (game)
- 1868 Tetrix (the best ever version of Tetris)
- 1867 Sid 2
- 1866 A+B Star Trek Slideshow (2 disks)
- 1865 Wiggle dis music disk
- 1864 Dynamite fonts 1
- 1863 Rave tracks (hardcore music disks)
- 1862 Bug Blaster (very good game)
- 1861 Jack mix 2 (remix)
- 1860 Cybordine Anim (1 meg)
- 1859 Altern 8, Evaporate remix
- 1858 Boot block compilation disk
- 1857 Icons galore WB2 only (By g Henderson)
- 1856 WB2 Utilities (gary Henderson)
- 1855 Font Farm
- 1854 A+B Erasure (Breath of life) 2 disks
- 1853 ABC as above but different mix (3 disks)
- 1852 Army of lovers (Bite the bullet)
- 1851 *Tubular Bells
- 1850 Rummy (Card game)
- 1849 Plus Issue 8 (+ owners utils and games)
- 1848 Radbench for + owners (Ram Res WB)
- 1847 Spellcheck 1.3 (excellent spell checker)
- 1846 China Shop (Game)
- 1845 Lemmingoids (great game)
- 1844 * Frustration (brilliant text adventure)
- 1843 Plus Issue 7 (more stuff for + owners)
- 1842 Plus Issue 6 (great utils and games)
- 1841 Bach concertos 5+6
- 1840 Bach concertos 3+4
- 1839 Bach concertos 1+2
- 1838 Virus Killers (lots of em)
- 1837 * Super Invaders (game)
- 1836 Jackie chan slideshow
- 1835 Perm Checker 1.2 (Pools predictor)
- 1834 Wormhole (game)
- 1833 Growth (game)
- 1832 Fortran Compiler
- 1831 Intro's Compilation
- 1830 Rainbow slideshow (Hello Bungle)
- 1829 Animated Pointers
- 1828 Forms really unlimited
- 1827 ABCD Manic Raves 2 on four disks
- 1826 A+B Kefrens Megamix 1 (good music disk)
- 1825 Bass subliminal vision
- 1824 Walt Disney clipart
- 1823 Simpsons shoot-em-up
- 1822 Electro cad 1.4 (Design your own chips)
- 1821 Serene 3 (shoot-em-up)
- 1820 Serene 2 (shoot-em-up)
- 1819 Serene 1 (shoot-em-up)
- 1818 Astronomy Slideshow
- 1817 HD click v2.0 (hard drive menu)
- 1816 Bouncer remix (yer not comin in)
- 1815 Rave generator music disk
- 1814 Mike Archers Basso Music (brill)
- 1813 200 Utils on one disk (megatastic)
- 1812 A+B Blues Brothers remix (2 disks)
- 1811 Ed keys (keymap editor)
- 1810 ANATT (good text adventure)
- 1809 Alchemy mega demo
- 1808 Plus Issue 5 (more mega utils for the +)

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- 1908 Challenger, Super Quiz
- 1907 Copper, Mega Arkanoid Clone
- 1906 PCQ Pascal, New Version
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- 1904 Digital, Magnetic Dreams
- 1903 Battlements, Hunchback
- 1902 Fireland Demo, Stunning
- 1901 Purity Test, Test yourself
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- 861 A+B Light cycles, 902 Robocop, 903 Peg Anim, 904 Raiders Of The Lost Ark,
- 906 Bust Anim, 910 Basketball, 909 Porky Pig, 911 Applecuss, 912 Batman,
- 975 Juggler 2 (2 meg), 976 At The Movies (2 meg), 998 Asteroid Field,
- 999 Trackball Anim, 1022* Amy v Walker, 1032 Juggette 2, 1091 Mr Potato Head,
- 1092 Mars Flight, 1093 The Boings, 1094 Coyotte 2, 1095 Radio Anims,
- 1096 Conga Anims, 1122 Miss Mamsell (2 meg), 1144 Helicopter, 1190 Pinball,
- 1191 Tea Cup, 1208+1209 Anti Lemmin (2 meg), 1246+1247 Rodent Anim,
- 1253+1254 Dating Game (2 meg), 1312 Potato Head 2, 1337 Shuttlecock,
- 1403 Madonna, 1411 Cruise for a Corpse, 1519 Bruce Lee, 1533 Vietnam Conflict,
- 1535 ATF Agility, 1675 Rocking Robot, 1676 James Whale Anim,
- 1677 Canyon Flight, 1736 Easter Island, 1636 ABCD The Landing (4 meg),
- 1637 ABC Buzzed (3 meg), 1653A+B Circus Act, 1534 Vtol Anim,
- 1592 ABCD At the Movies 2 (1 or 3 meg 4 disks)

All of the above are great to show off your machines capabilities.
Please note price is per disk not per title (ABCD = £4.40). Thank You

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It would be easier to list
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SS15 - Kids Karaoke

SS16 - Freak Scene (Rave disk)

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- 1807 *Intro's compilation
- 1806 Electronic Knights
- 1805 *Hawk earths sorrows (demo)
- 1804 Slideshow generator (superb)
- 1803 Tanks (very good game)
- 1802 Music mania (startrecker, soundtracker)
- 1801 *Garloween the movie
- 1800 *Disk 1 of above
- 1799 + 1798 Scream 2 disk mega demo
- 1796 A+B A64 emulator v2.0
- 1795 Image Utils (Genloc stuff etc)
- 1794 Amos Update 1.32
- 1793 Transformer v3.3 (very popular)
- 1792 Opti comms 2 (the very best comms disk)
- 1791 Arsenal slideshow (come on you reds)
- 1790 Disk menu v1.0
- 1789 Dead beat vol. 1
- 1788 Contact
- 1784 Software failure demo
- 1782 A+ Swimwear models (very nice)
- 1781 Cat demo (very nice demo)
- 1780 Kefrens mega mix 2
- 1779 Brian Badland comic artwork
- 1777 Viking Saga (animation)
- 1775 Edword (Text editor)
- 1774 LSD adventure cheats
- 1773 *Angels mega demo
- 1772 A+B trekkies mag on 2 disks
- 1771 Samples volume 1
- 1770 Icon nightmare (over 50 icons)
- 1769 Classic Utilities
- 1768 Plus Issue 4 (+ owners disk)
- 1767 Fractal Generator (very fast)
- 1766 *Tornado slideshow (top ho Charlie)
- 1765 Game tamer 2.3 by g Henderson
- 1764 Skoda challenge (race game)
- 1763 TV Graphics (Genloc stuff etc)
- 1761 Video Applications
- 1760 Video Applications
- 1750 Protraker v2.0 (with does)
- 1749 Microbes (superb game)
- 1747 *Demolition Mission (good game)

FISH EXTRAVAGANZA

- | | | | |
|------|----------------|------|-----------------|
| F60i | Apipe | F512 | Reversi |
| F602 | Plt Lib | F513 | DKB trace |
| F603 | Dynacal | F514 | Gear Calc |
| F604 | Midi Stuff | F515 | Cheque book |
| F606 | Auto Graph | F516 | Loom emulator |
| F607 | Dos Control | F519 | Text Sort |
| F617 | Revenge (game) | F521 | Landscape |
| F618 | Voice CLI | F522 | Mandelbrot |
| F619 | Amigazer | F526 | Data easy |
| F620 | Track Dos | F527 | Zoo |
| F621 | Icon Editor | F530 | Turbo Title |
| F622 | U-edit | F531 | Filesearch |
| F623 | Make Icon | F532 | Boot pic |
| F625 | Sys-Info 2.62 | F533 | Boot gen |
| F626 | Bowling League | F535 | Biz Calc |
| F627 | Free Paint | F536 | Chemesthetics |
| F628 | Adventure | F537 | Bootgames |
| F629 | Boulderdash | F539 | Disk drive test |
| F501 | Admenu | F541 | Mine clear |
| F502 | Strategy game | F542 | Powersnap |
| F503 | PCQ pascal | F544 | Lander |
| F506 | Star Trek Triv | F548 | Label Maker |
| F506 | MultiPlayer | F551 | Tool manager |
| F511 | Connect 4 | F582 | Diplomacy |



We are one of the few libraries who take Switch

Basic Tutor

Ground Zero PD •

Disk No UI52

Basic is by far the most commonly used programming language around and AmigaBasic will probably be the first programming language that a newcomer will have experience of, being included in the package when you buy the machine.

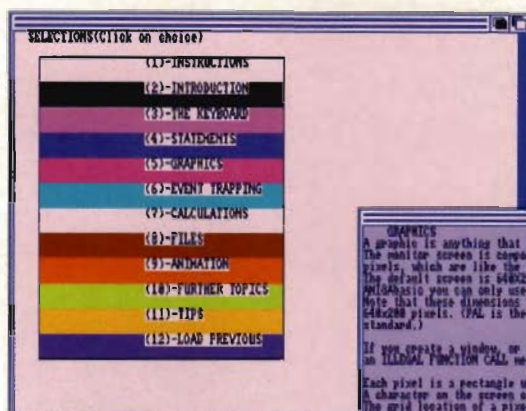
This PD package sets out to provide absolute beginners (good title for a film there, eh?) with a tutorial on the concepts of Basic.

The structure of the tutorial consists of descriptive text with occasional short pieces of code, along with a quiz section to tortify what you have just learned.

It does not attempt to be as comprehensive as some of the books available on the subject, but it is still a good way to get to grips with the intricacies of programming.

Topics covered include graphics, files, the keyboard and many other aspects of Basic.

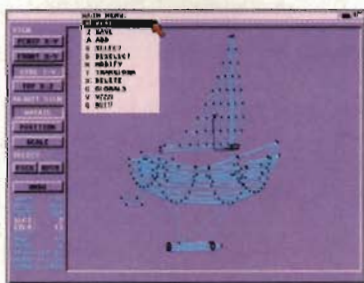
If you are interested in Basic programming then this disk is for you.



The main menu showing the various topics covered in the tutorial

(Amiga 3000/25) or 19 generations per second (Amiga 2000/500/1000) and 153 patterns in text file format.

Vertex is a pretty good 3D object modeller. It allows the choice of any view, including perspective, when selecting points or examining objects. The view can be rotated, positioned and scaled at will either by typing in values or using the mouse.



The main display showing a wire frame representation of a boat. Would you sail in this?

Once more Darren Evans guides you through the PD Universe, so in the words of a balding starship Captain, "let's see what's out there!"



An example of the information given throughout the tutorial. Here, it provides information on graphics

PUBLIC SECTOR

Fastlife and Vertex

Fish Disk No 608

This disk has a couple of good programs on it. Fast life is a speedy version of the good old Life program. It has a good intuition interface which makes it easier to use than other variations of the program.

Some of Fast Life's features include four screen sizes, 35 generations per second

Colour It 1.3

Star Tronics • Disk No 58

I spent a whole half hour messing around with this disk. It brought back memories of being left alone with a mountain of multi-coloured crayons and a massive colouring book (well it seemed massive, or was it just that I was small?).

"Sit there like a good boy and draw a

nice picture for mummy," my mum would say.

After about an hour's peace, she would return only to spend the next three hours cleaning the furniture and wallpaper, not to mention frantic research into the toxicity of crayons and their effects on kids with a tendency to eat anything placed in the right hand.

Colour It is an electronic version of the

Animation Tool Box

Ground Zero PD • Disk No UI39

This disk contains many useful tools in the production of animations. Those of you who like to delve into animation production may find some of the tools useful. Some of the programs included are:

- Andrew's Animation Studio – another simple animation creator. Not the most powerful of programs but is good for "messing around" with animation.



One frame from the example animation file with Direct Action. Here, good old Tut is about to become irritated by a fly

- Direct Action – used for creating animations using simple cell animation techniques. It uses frame-by-frame editing and also has some sound capabilities.

Because only the position of shapes are saved, you can have animations of up to 25 minutes.

- Animation Bridge – here is a standard for animation files referred to as ANIM-5 or ANIM opt 5. However, lots of animation readers and editor/special effects packages sometimes have problems with variations on the format.

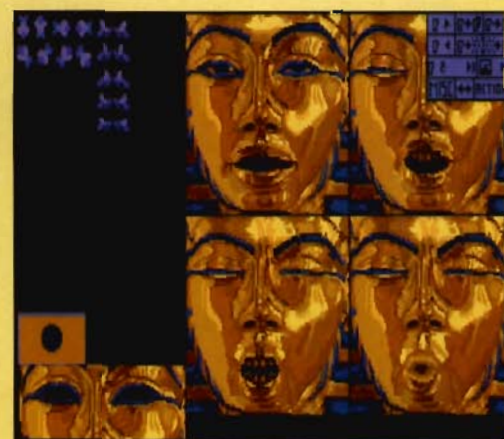
An example is when some readers allow changing the colour map "on the fly", while the animation is playing. Other readers will either abort or completely crash if they find more than one colour map in a single animation file.

Animation Bridge is useful if you want to use a special feature on another animation package which is not available on the one you are using.

It allows changes to and from the following formats – Deluxe Paint III, Animagic, The Director, Movie 2.0, Animation: Editor and Animation: Studio.

- ATI-Anim to IFF Converter – this program allows the conversion of an animation file back into its component IFF files. However, it does not seem to work very well with HAM animations.

- Makeanim – this is a standard ANIM compressor.



Here you see the various blocks that make up the animation of the fly and Tut's facial expression

- Showanim v5.30 – this lets you play ANIM and IFF ILBM animations. Many options allow the running of animations from the actual animation files default tool and input of options into the tool type simply by using the Workbench pull down menu's Info command.

- Vid3DFix v2.0 – allows the processing of Aegis Videscape 3D v2.0 animation files so they fully conform to the published specification for IFF animation files.

paper variety, therefore a lot safer for the furniture. The program uses IFF format pictures, which you can draw yourself with any art package which supports IFF. They're presented on-screen ready to colour in using up to 32 colours.

Clicking the right mouse button brings up the colour palette, while clicking the left button fills the area on-screen, where the mouse is positioned, with the selected colour.

There are some pictures already included on disk, and when the colouring is complete your effort can be saved to the Album directory ready for viewing with the My Album program.

Home Business Pack v1.0

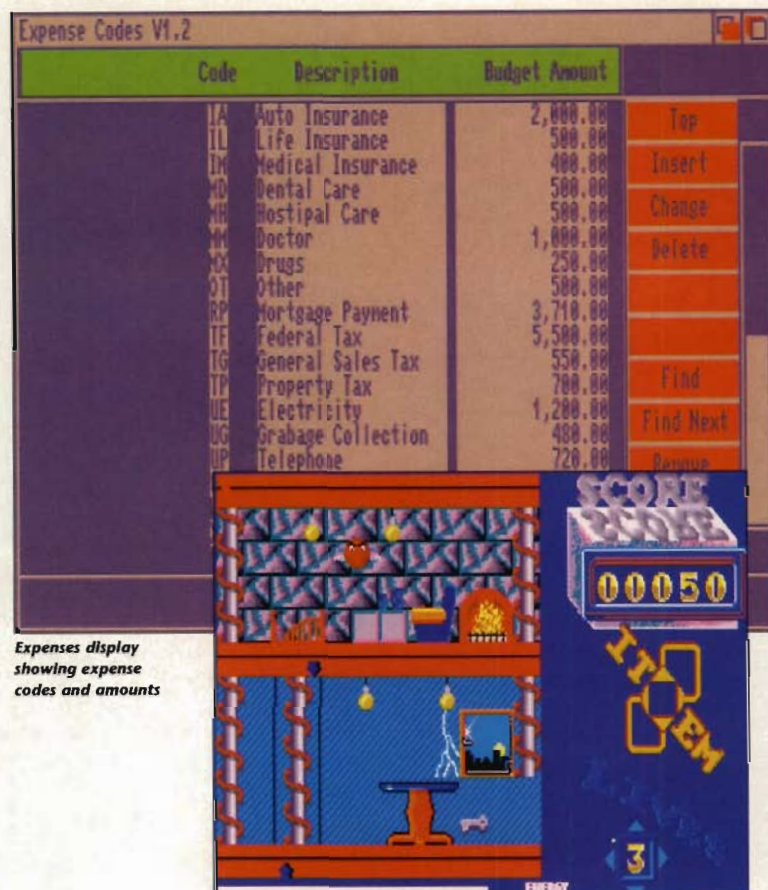
Star Tronics

They say that money isn't everything and they're right, but I would like to add that although it isn't everything, it's not far off. So wouldn't it be a good idea to efficiently keep track of how much you spend?

Enter the Home Business Pack. With this suite of seven programs you can keep tabs on how much damage you and your bills do to your bank account.

It allows the entry of transactions into the cheque book journal as they occur. It presents you with the remaining balance after each transaction is entered, and you can customise the expense code table to suit your particular situation, specifying budget amounts for each category.

There is the option to produce detailed and summary reports as well as the ability to search the cheque book journal using any desired search criteria.



Expenses display showing expense codes and amounts

The little spherical hero of Ball Lightning. "Who am I? What do I do now?" Don't ask me matey, I don't know either

Ball Lightning

Seventeen Bit Software

This is a strange game. You apparently control the direction and fate of a rather spherical chap (herein referred to as Bob), around a multitude of different screens.

I think everything takes place within some sort of house - the light fittings and fireplaces are a dead giveaway I suppose -

and you must control the bouncing character through the rooms.

There are hazards along the way such as electrical sparks and other odd airborne objects that aren't beneficial to Bob's health whatsoever, so your duty is to make sure he avoids them.

Along the way, you pick up various items which I assume will come in useful, but I'm not quite sure!

By now, you are probably thinking that I don't quite know what the hell is going on or what the game is all about and you would be absolutely right, I don't.

Such ignorance is brought about by the fact that the game disk contains no doc files explaining just who Bob is, what Bob is meant to be doing in this strange house

What's going on in the PD world?

Do you have any news about anything relating to the world of PD? Maybe Prince Charles has opened his own PD library or your library has just topped one million individual titles. If so, drop me a line.

and why he should do it in the first place.

Having said that, I still found myself taking the odd moment out to load it up and have just one more go, probably with a subconscious attempt to fathom it out once and for all.

Maybe that's the whole idea behind the game. Tell the player nothing and watch while his/her curiosity overcomes him/her.

Catalogue Workshop Disk

Star Tronics

There comes a time in ones' life when you just have to get organised. So why not let the computer do the tedious work for you?

This disk consists of a collection of various cataloguing and organising programs. Video Librarian, for example, is a database for organising your collection of home videos and films.

It allows you to view or print information sorted by title, star, subject or a combination of criteria. It has good search facilities for locating specific text and displays any records which contain that text.

It also allows the printing of labels for the videotape showing tape number and title. If your video collection resembles a precarious mountain of plastic with ad-hoc ordering, then maybe you should consider getting this disk.

Get organised with Database Wizard



A true masterpiece and I'm not taking the Mickey (what a sad attempt at humour - Ed)

When submitting disks...

For all those PD libraries who already supply their wares for Public Sector, and for those who are intending to, please include a contents list explaining what is on the disks along with the corresponding disk number.

Some PD libraries are adopting the good habit of including a contents doc file on the disk with a brief overview of the programs on it.

I tend to decide beforehand what type of PD programs to cover in following articles and it would save time if I could just scan the Included list in search of those types.

Those disks which do not include lists tend to be put to one side in favour of those with lists, while I find time to load them, search through the doc files to see what the program is for and then decide whether to include it in this month's issue or following ones.

Ensure that your disks are labelled with the disk number.

If any significant changes to your catalogue disk occur, please send the updated catalogue disk to me.



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- + 917 ROLLERPEDE, INVADERS
- + 918 AMIGA DRAGON
TILES V2.5.....Great tiles game
- + 919 ZEUS
- + 920 HOLLYWOOD TRIVIA
- + 922 THE SIMPSONS
- + 925 WIZZY'S QUEST
- + 926 THINK TWICE.....Master Mind
- + 927 HYPER-BALL.....Arkanoid clone
- + 929 SEALANCE.....Submarine Sim, Good
- + 930 SHAPES.....Good for Kidz
- + 931 WACKO Jr In Wonderland
- + 934 SCRABBLE
- + 935 WORMHOLE
- + 936 ANAGRAMS
- + 938 POM POM GUNNER
- + 939 SKY FLYER
- + 940 GALACTIC FOOD FIGHT
- + 941 ATIC ATAC
- + 942 D-TRIS (TETRIS)
- + 943 ARCADE CLASSICS inc space invaders
- + 944 NU THE SHOOT EM UP Great stuff
- + 945 CARD GAMES lots
- + 947 E-TYPE The best Asteroids
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MED V3.2
THE GREATEST MUSIC MAKER
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FULL OF INSTRUMENTS, BEATS etc...
TO GET YOUR REMIXES GOING!!
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CATALOGUE +

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AND 2 x 0.5 MEG UPGRADES
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DEJA VU

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- +LPD34 **INVOICE PRINTER:** Quick production of invoices on your paper.
- +LPD35 **T-TECHDRAW:** Technical drawing program with print facilities.
- +LPD36 **FRACGEN II:** Great fractal program generator.
- +LPD44 **FORMULA 1 CHALLENGE:** A great racing car game.
- +LPD47 **DIRTY CASH V1.06:** The best fruit machine wim on the Amiga.
- +LPD52 **LC24 FONTS DISK:** New fonts for you to download to most 24-pin printers. Very good.
- +LPD65 **POWER PLANNER:** Personal organiser, keep track of things.
- +LPD66 **HOTEL MANAGER:** A great board game, quite similar to that old classic Monopoly (1Mb)
- +LPD71 **BATTLECARS:** Racing game - commercial quality - highly recommended (1Mb)
- +LPD75 **VIDEO LAB:** Simple to use video titling package for home video's. Great quality.
- +LPD77 **POWERBASE 2.1:** Powerful database with a host of features.
- +LPD79 **MUSIC ENGINE:** Plays music created in MED, Soundtracker etc. NEEDS AMOS (1Mb)
- +LPD81 **POOLS PRO:** Program to help you fill in your pools coupons.
- +LPD86 **NCOMMAND V2.03:** Adds workbench 2.0 like displays to AMOS programs - very impressive. (1Mb) NEEDS AMOS.

+ 856	PRINTER DRIVERS	CAN'T GET THAT DARN PRINTER TO WORK??? HELP!
812	WINDOWBENCH	2 disks YOU'VE HEARD OF WINDOWS ON THE P.C. NOW ON AMIGA
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+ 857	SUPERKILLERS	KILLS SADAM PLUS 171 MORE VIRUS'S LATEST
+ 840	TEXT PLUS V3.0C	WORD-PRO MENU DRIVEN AREXX SUPPORT THE BEST
+ 808	P.C. EMULATOR	RUN P.C. SOFTWARE IT WORKS COME WITH C.G.A. GFX NEEDS MS-DOS
+ 810	PASCAL COMPILER	IF YOU ARE UP THERE WITH THE BIG BOYS GET THIS
+ 710	AMIBASE	POWERFUL EASY TO USE DATABASE WITH 4 MATHEMATICAL FUNCTIONS
+ 858	JR-COMM 1.02	THE LATEST VERSION OF THIS COMMS PROGRAM GOOD
+ 784	C-MANUAL V2	4 DISKS ALL YOU NEED TO LEARN 'C' CONFIDENTLY
+ 704	NORTH 'C	UNPACK ONTO 2 DISKS COMPLETE 'C' ENVIRONMENT
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+ 684	VIDEO APPLICATIONS	2 DISK VIDEO UTILITIES TO ACCOMPANY TV GRAPHS
+ 731	SMOVIEW	AMAZING TITLE AND TEXT SCROLLER FOR VIDEO ETC
+ 859	SOMETHING FOR NOTHING	2 DISKS VIDEO UTILITIES + FONTS SERIOUS
+ 860	N-COMM V1.92	THE LATEST VERSION OF THIS GREAT COMMS PROGRAM
+ 676	SID V1.06	THE LATEST!! CLI IS A BLAST WITH THIS ONE
+ 688	DISK SALV	MUCH MUCH BETTER THAN DISKDOCTOR ON W.B
+ 681	BATTLEAXE ICON STUDIO	THE TOP ICON MAKERS AND EDITOR WITH SOME ICONS
+ 682	PRINTER DRIVER GENERATOR	YOU WANT A PRINTER YOU NEED A DRIVER
+ 683	D.K.B. TRACE	EXCELLENT RAY TRACE PROGRAM
+ 711	LEARN & PLAY	2 DISKS, GOOD YOUNGER TUTOR
+ 700	CLIP ART A.B.C.D.E	5 DISKS BEST IFF PICS FOR DTP ETC
+ 650	QUICKBASE, LABELPRINT, VIDEO-LIBRARY, MENU	1 DISK GOOD VALUE
+ 703	GRAPHIC UTILITIES	TOTALLY PACKED WITH GRAPHIC STUFF
+ 781/2	DYNAMITE FONTS 1 & 2	2 DISKS FULL OF FONTS TO USE IN DPAINT ETC
+ 761	MEGA UTILS	50+ YES OVER 50 USEFUL UTILITIES
+ 725	ANTIFlicker	STOPS SCREEN FLICKER IN INTERLACE MODE
+ 787	HARD DRIVE UTILS	INCLUDES MR. BACKUP AMONG OTHERS IS GOOD
+ 885	AUDIO MAGIC V1	FULL OF USEFUL MUSIC SEQUENCERS & SOUND RIPPERS
+ 886	AUDIO MAGIC V2	IF YOU HAVE THE ABOVE, YOU'RE BOUND TO WANT THIS
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Stevie's big boobie!

I am following your excellent Beginners' Guide series, but I have a problem with part three.

I followed the instructions in your column and when I came to boot up MyDisk all I got was the Commodore copyright message, then the error message:

```
LOADWB FAILED RETURN CODE 20
```

Could you please tell me where I am going wrong?

Jeff Davies, Rhonda

You're doing nothing wrong at all – it's our so-called expert who's messed things up. You see, before Workbench can load it has to have access to the icon.library file which should always be in the LIBS directory of the disk you're trying to boot from.

Stevie Kennedy, who would like me to pass on his abject apologies to all those following the series, forgot to mention this, with the result that none of your disks will successfully boot.

If you caught the June column, you'll have noticed that he sneakily tried to make it look as if he'd meant to leave out the icon.library. Nice try, loser!

Tool types

Like many others I am new to the Amiga, having bought an A500 Plus at Christmas. I have been trying to assemble a disk of utilities and useful tools, most of them programs from your CoverDisk such as AddTools, Print Spooler, Last Hope, and so on.

I have got as far as opening drawers on a newly formatted disk with Workbench in place, and the utilities seem to copy across, but on trying to select them from the new disk I get a warning saying:

```
UNABLE TO OPEN YOUR TOOL : C:\MMPP
```

I haven't a clue what to do about this. Can you help?

Mr P Southey, Westergate

The problem lies in the fact that not every program represented by an icon is completely independent. Many need other files to be present on the disk before they can run.

In your case, the file in question is the text viewer MuchMore_PP (MMPP for short) which we use on every CoverDisk to enable users to read an author's doc files.

To remedy the situation, you'll have to copy MMPP to the new disk. Let's say your new disk is called NewDisk and you are using the latest CoverDisk. To carry out the copy, boot from Workbench, open Shell, and type:

```
COPY COVERDISK33:C\MMPP TO NEWDISK:C
```

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Solder job

I have an Amiga 500 revision 6A which I upgraded to 2Mb using the 1.5Mb PC502 expansion from Power Computing. I also have a fatter Agnus which supports 1Mb chip RAM.

The expansion was wired in the 1Mb chip RAM mode as detailed in the manual and it configured correctly as 1Mb chip and 1Mb fast, which I was able to check using the AVAIL command. However, when I load DigiView 4 or DPaint 4 and try to access the various resolutions, the computer crashes.

I hasten to add that both programs work perfectly when the expansion is wired in the normal mode for 0.5Mb chip and 1.5Mb fast RAM.

Can someone offer a solution?

Charles Haber, Santa Lucia, Malta

To eliminate one of the possible culprits, it at least doesn't sound as if you have damaged RAM chips. If this were the case, your paint programs would crash no matter which configuration you used the RAM card in.

The PC502, in common with every other 1Mb chip RAM expansion board,

requires the user to solder a link on jumper JP2.

If you have a badly soldered link you will have plenty of crash problems, though they should happen all the time rather than just on certain packages.

As long as the RAM is configuring at all and you've soldered the joint properly – as well as making very sure that the link between the other two pads on JP2 has been cleanly cut – the only problem can be with the board's control chip.

In this case, if you send it back to Power Computing, they should replace it for you.

Productivity mode

I own an A500 Plus and I am considering buying a multisync monitor so that I can use Productivity mode.

Not many companies seem to be advertising this type of monitor, and I am at a loss as to which is the best for performance and value.

I presume that the multisync monitor should be able to display the normal hires and super hi-res modes without difficulty, but the only models I have seen advertised are the Commodore, Interquad, and Panasonic monitors.

I understand that none of these provide sound output like my 1084S. Also, would I have to get a special lead for this

type of monitor – where would I get one?

Chris Thompson, Orpington

Commodore, rather predictably, recommend that you use one of their own 1950 monitors with Productivity mode. These are high quality monitors and can handle any of the Amiga's video modes, including the new ones.

Connecting the monitor will be a problem, as your standard 23-pin video port will not talk to the monitor's 15-pin cable. To connect a Commodore multisync to your A500 Plus, you'll need a converter which, happily, is supplied with every 1950 multisync making them the most appealing buy from your point of view.

New virus?

I have an A500, an A590, 1.5Mb RAM expansion, Star LC200c, and external floppy. I have installed Virus Checker on my hard drive and have not found any viruses, but recently I found that I could not format or copy disks. When I tried to format a blank floppy I was given the error message:

```
INITIALISATION FAILED. BAD SECTOR.  
TRY A DIFFERENT DISK
```

Also, any disks that I had already formatted and tried to reformat gave the same message and became unreadable. Then half my software collection mysteriously became unreadable.

I thought it was a virus, but Virus Checker has not reported one. Please help.

Paul McClean, Cookstown, N Ireland

There are two possibilities. Either your internal drive is damaged and will need to be replaced, or you have been given a "trojan horse" copy of Virus Checker. By this I mean a hacked copy which pretends to be the original program but which in fact contains a deadly virus.

Several trojan variations of VirusX were floating around last year, but I've yet to come across a wooden equine version of Virus Checker. This leaves the possibility that your internal drive has packed in.

If you get a lot of read/write errors and other disk-related problems, then the internal drive is probably the cause of the problem.

If, however, the bad sector error is the only one you're getting, I'd seriously consider laying hands on a different version of Virus Checker to check the first one.

You could, of course, have fallen prey to a new virus, so I'd be obliged if you could send us a disk containing your version of Virus Checker and a floppy which is suffering from the bad sector disease so we can check it for ourselves.

If we find a completely new virus, there's a free subscription in it for the person who alerts us to the danger.

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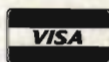
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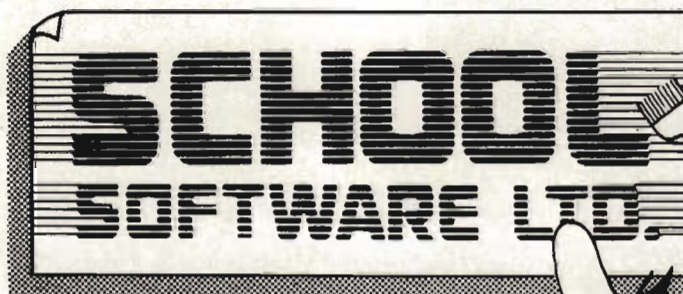
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If you're a regular reader of AC you're probably waiting for the promised update information on several products reviewed in last month's issue.

The programs with updates pending included MakePath and Terraform, which as you may remember are additional utilities for the excellent VistaPro 2.0.

As well as the Vista additions we'll be taking a look at v1.2 of the Vlab control software which has just arrived in its English form, as opposed to the German variant that was employed for last month's two-page preview.

As if that were not enough, we'll be supplying the very latest news on Hotlinks, a program which in its beta form has already been previewed in AC but has now arrived in its final form and promises to revolutionise interactive Amiga applications.

New dimension

We'll start with the duet of Vista additions which add a whole new dimension to Virtual Reality Inc's stunning fractal landscape generator. The most impressive of the two programs has to be MakePath. In short, it's an animator's dream come true.

In the main program itself animation is possible, but only in straight lines directly between the camera and the aim point. MakePath, on the other hand, allows you to create almost any flight path you could wish for.

Once a path is complete, its associated script can be loaded into VistaPro and then rendered frame by frame in the format of your choice, producing a perfect fly-through sequence complete with banks and rolls as the camera hurtles over the terrain-hugging every contour.

The subsequent animations are impressive enough in standard Amiga formats but if the process is applied to 24-bit or DCTV images the finished sequence is nothing short of spectacular.

For anyone wishing to put their creations on tape the DCTV option is ideal, thanks primarily to its 24-bit, VHS-compatible composite output. Aside from the



A close look at the blissfully simple path creation process



All the controls are at hand



Altitude editing in a matter of moments

MIGA Update

As usual, AC brings you the best first in the ever-changing world of the Amiga

enhanced image quality, DCTV provides perhaps the biggest bonus to animators via its relatively tiny file size, especially when compared to RGB-based 24-bit. On average a DCTV file is only 1/10th of the size of an identical 24-bit RGB.

As a result, it's possible to compile a standard Amiga anim and record it to tape in real-time, as opposed to RGB's still frame recording, which as any pro will tell you can be a frighteningly expensive process.

If you're feeling really adventurous, there's nothing to stop you employing Vista's foreground and background options to incorporate other images within your creations. Imagine being ideal for this as it, too, supports DCTV.

Now we've looked at what can be



From 2D text to 3D mountains in minutes

achieved, the next question is how the software manages such stunning results.

If we assume the program is loaded, the next task is to import the landscape within which the animation will take place, before specifying the parameters for the flight itself.

These include basic elements such as speed and frame size but perhaps more interesting is the selection of vehicle in which the camera will make its journey during the anim.

The choice, like the program itself, is impressive. You have the option of either a glider, jet, cruise missile, helicopter, dune buggy or motorcycle. Unbelievable as it may sound, these simulated craft are extremely accurate.

For example, if the glider option is selected the camera sweeps over the land, banking gently and gracefully climbing and descending in relation to the land beneath. At the other end of the scale comes the cruise missile which skims across the surface hugging the ground at an altitude of just 70 feet, constantly weaving and bank-

ing to avoid oncoming obstacles.

The dune buggy bounces over every contour with nauseating realism – not recommended for those who suffer from travel sickness...

Once your mode of transport is selected, you simply draw the flight path directly onto the landscape. When complete, a click on the right mouse button defines the finished path either as a straight A to B flight or alternatively as a seamless loop.

If you now click on the Makepath gadget, the program automatically generates the flight which can then be previewed in its entirety as a complete full-screen wire-frame animation.

Redefining

If you like the finished sequence but want to make a few alterations, a whole host of options allow you to redefine almost any aspect of the sequence.

You can adjust the amount of roll during banking, increase the degree of pitch during descents and climbs, adjust how accurately the vehicle will track to the undulations on the landscape or even the amount of acceleration or loss of speed during a dive and a subsequent climb.

In short, if you want to change something you can, and when you're happy, simply regenerate the sequence by hitting the Makepath icon once more.

As you can see from the screenshot, the interface provides a bar chart of the flight showing the paths relative height to the ground with individual key frames marked by boxes.

If you want to either add additional keys or adjust the height of existing ones, you can. You may also specify whether the path should pass directly through each key point or alternatively employ a spline path which creates the optimum trajectory between the various points. It's even possible to vary the aim point of the camera during the flight, producing gradual camera pans. All in all, it's almost impossible to



The interface in action, with a close-up

MIGA Update

find fault in what is a near perfect answer to the thorny problem of script generation.

If you are about to invest in VistaPro 2.0, MakePath is an essential for any would-be animator. Highly recommended...

TerraForm

As the name suggests, TerraForm is aimed strictly at landscape generation. Although VistaPro does support the export and import of palettes and 2D images which can then be transformed into landscapes, it is a little rough and ready and doesn't offer anything like the degree of control that TerraForm can.

To be honest, TerraForm isn't as impressive as MakePath but it nevertheless provides a lot more flexibility to the creation of designer landscapes.

Its main bonus is that you can instantly see the 3D results of your 2D actions via the small arthrographic projection on the right-hand side of the main screen.

In the example, you'll see the letters AC inscribed on the landscape. This was simply handwritten onto the landscape which was then translated into a 3D view on the right giving immediate feedback as to the results of 2D artistic exploits.

Aside from simple freehand drawing, the program offers an impressive range of power tools which include bombs for crater creation, rollers for levelling and instant mountains, all added to the scene over definable areas.

Other tools include inversion from low-land to highland, plus hardening and softening of features.

A full altitude palette allows you to select the colours – or should I say altitudes – of your choice as a painting medium. Once the features of the landscape are complete you can use the definable zoom to examine your creation in full via the 3D window.

Existing DEM landscapes can be imported and edited as necessary and then saved for later importation to Vista. The usual array of scaling and orientation tools are on hand, so almost any viewpoint or

altitude is possible. Unfortunately, although useful, TerraForm doesn't match its counterpart MakePath for speed or performance. Screen update can be, and usually is, painfully slow. And the rather limited collection of painting tools do make rather hard work of the creative process.

In short, TerraForm is well worth Impulse Inc's paltry asking price, but it nevertheless pales into insignificance when compared to the exceptional MakePath utility.

If you're interested in VistaPro and its associated utilities, they're all available from Genisoft Ltd., Unit 3, Poyle 14, Newlands Drive, Colnbrook, Slough SL3 0DX.

Vlab revision

If you caught a glimpse of last month's preview of the amazing Vlab, you can't fail to have been impressed. Well, as they say in the commercials, now it's even better!

As you can see from the grabs, image quality from the new 1.2 version is still stunning, but thanks to the latest update their capture is even easier.

Basic improvements include a new requester that gives total control over colour correction, including chrominance, and luminance for mono images, plus gamma control for both colour and black-and-white.

The display window has now doubled in size and also benefits from much improved image quality which no longer suffers from the rather unpleasant blitter effects present within the original software.

Aside from the software additions and improvements, perhaps the most important revision concerns the program's enhanced speed. The original program did indeed grab instantly, but the processing time which followed – although bear-



Picard's alter ego captured for posterity by Dynamic Data Exchange

able – did cause a rather annoying delay between possible captures.

Now the time between capture and display is blisteringly quick even in full-colour Ham mode. I must confess I've not yet seen the associated manual but to be honest it's unlikely you'll ever need it (unless you're a devoted ARexx user) as the installation and operation of the hardware/software combination is simplicity itself.

As mentioned last month, Vlab is easily the best real-time grabber on the machine and is well worth the Amiga Centre Scotland's asking price of £299 incl VAT.

Martin Lowe of Amiga Centre Scotland assures me that the manual is on its way and will be dispatched post-haste to any existing users as soon as it arrives at the ASC offices.

ASC are the sole distributor of Vlab, so if you're interested in putting your money to good use phone the Amiga Centre Scotland on 0896 87583, or fax them on 0896 87456.

HotLinks Editions

SoftLogik's Dynamic Data Exchange system, HotLinks, as previewed a couple of months ago, is now shipping at a retail price of £65.

As far as the content of the package goes, little has changed since we last covered it, but interesting developments are now taking place behind the scenes which could help establish HotLinks as a DDE standard.

Support for DDE within Windows 3.0 has led to its inclusion in a growing number of PC packages, such as Word for Windows, but as yet there is no recognised standard of the kind for the Amiga. Third-party support is vital in this respect, because unless a reasonable number of major manufacturers



HotLinks in its final form – publishing with a punch

recognise a new system, it can quickly sink into obscurity.

In the fight for supremacy that would be a standards war if only another manufacturer had the imagination to release a DDE system, HotLinks has an important advantage – it is an open system, independent of any one package, and has been made available to all software houses who care to support it.

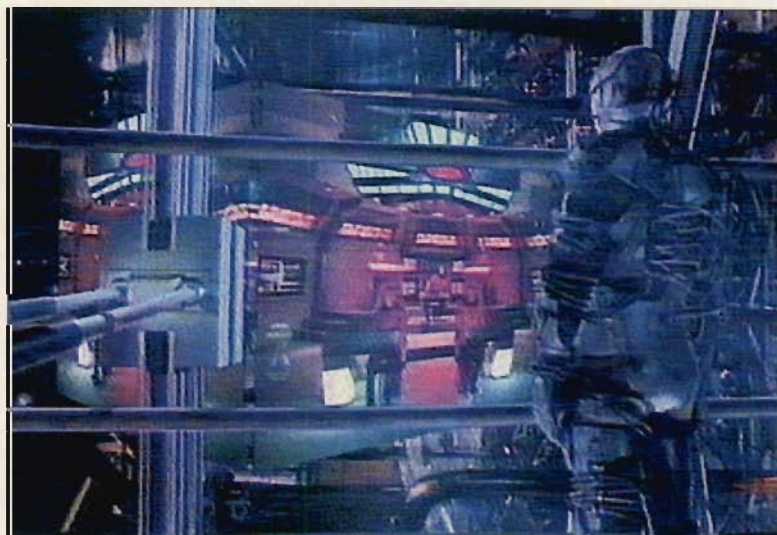
This sort of approach is the only way to rapidly gain acceptance for a package, so to gauge its success I asked SoftLogik's Ellen Kazmaier for an update.

She told me that SoftLogik are currently talking to a number of interested developers, including ASDG (makers of the Art Department Professional) and Commodore, and although no third party has committed itself to HotLinks, SoftLogik are cautiously optimistic.

This leads to the intriguing question of whether Commodore are thinking about including some sort of DDE support in the next release of Workbench.

Andrew Ball, Commodore UK's press spokesman, refused to be drawn on the subject, commenting merely that "a manufacturer such as ourselves cannot in the long term afford to ignore [DDE]".

Watch this space for further developments.



Another example of the impressive power of Vlab.

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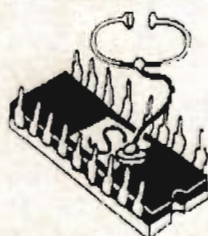
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Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't be offended if you end up getting the chop.

Elusive tutorial

In the May issue's Painless Programming feature, Kyle Rees mentions a tutorial manual by Mel Croucher as one of the best for beginners in the Amiga.

I have tried to obtain this book but to no avail. Could you please give me the relevant information about this book so that I can order it?

Faisal Ali, Chopwell

The manual Kyle was referring to is the *Easy Amos Beginners' Manual* as supplied with every copy of the package.

Easy Amos is designed as possibly the easiest to learn computer language in existence and can be ordered from Europress Software on 051-357 2961. It costs £34.99 and is the only way to get your hands on Mel Croucher's manual.

Defending beginners

I have just bought an Amiga 500 Plus and am very gradually learning how to use it (work does tend to get in the way).

On browsing through the various Amiga magazines on offer I was attracted to *Amiga Computing* by the promise of articles for the beginner and the free database on the CoverDisk. When I reached the letters page, however, I couldn't believe the letter from Graham Woodcock.

How does this person expect people to learn how to use the Amiga if there are no articles of this kind? I appreciate that he may be beyond this kind of thing, but there are many who are not.

I sympathise with C Kostyke who unwittingly wrote the original letter as everyone has to start somewhere, even Mr Woodcock.

Ms J Wadsley, Lincoln

To be fair to Graham Woodcock, he was

complaining mostly about people who have Amigas for years without learning the basics about AmigaDOS, though I agree his comments were a little over the top. The letter was printed because it is indicative of the sentiments shared by some of our more technically-minded readers.

Judging by the response from outraged beginners – your letter was one of many – the letters page fulfilled its function by creating a debate. Thanks to everyone who wrote in on the subject, and let me reassure everyone that we have no intention of abandoning either our beginners or expert readers.

CDTV supporter

Since the price of a CDTV has fallen to an acceptable level I have recently bought one in addition to my existing Amiga system rather than wait for the A570 drive to be released, and after using it for about a month I feel qualified to make a few observations which may help anyone else out there pondering whether or not to buy one.

First, look at the price of a CDTV complete with keyboard, floppy drive and infra red mouse/joystick, then compare it to a standard A500 with A570. The difference in price is quite small and I know which one I'd vote for.

The CDTV system is very sexy, has all the Amiga printer and modem ports, has built-in Midi ports as an extra, and is a very good CD audio player as well.

Even with just an external floppy and no keyboard it can play games which only require mouse or joystick control and the infra red controller, which I find has a good range, doesn't cause a mess with all those cables associated with normal joysticks.

The bundled software is OK, though

Lemmings is disappointingly identical to the floppy version, and Hutchinson's Encyclopaedia, though slagged off in various reviews, has loads of useful information even if the user interface is pretty awful.

I hope to get the Fred Fish megadisk, which should keep me occupied for a few months, but why is CDTV software so expensive? A CD costs about 60p to produce so someone is making an unethically large profit. Commodore would do well to include this disk in the bundle.

I hope CDTV succeeds, as this nearly un-piratable medium could encourage software houses to release cheaper software.

Dave Walker, East Grinstead

Most CDTV owners will agree that it is an excellent system for the money, especially as major rival CD-I systems will begin to retail for £500 to £600 when finally released in the UK, but the arrival of the A570 is going to change the market for CD-ROM Amiga products.

On the plus side, from CDTV owners' point of view, large sales of the A570 will result in more of the large software houses producing CDTV-compatible titles. On the minus side, the A570 and Amiga combination could eat into the sales of CDTV systems in a drastic way.

We'll have to wait and see what happens, but Commodore's decision to reposition CDTV as CDTV-Amiga shows that they are less than completely happy with the unit's success as a consumer electronics product.

If most sales of CDTVs are coming from already Amiga-aware people, the A570 could rapidly overtake the system.

One area I'll be watching with interest is that of software prices. As CD-ROM is so much more difficult to rip off, if the software houses continue to sell CDTV software for over-the-top prices once the user base expands, they will have to find a better excuse than the traditional piracy argument. Perhaps they'll take a truly original stand and use "unadulterated greed" instead?

Not yet!

I have an A500 Plus and I was interested to see in your June issue that there is a new Workbench (v2.10). All I really want to know is whether or not I will be able to buy the new version, as it should work with Kickstart 2.04.

Iain Mackay, Ellon

The Workbench v2.10 disks we looked at in the June issue were early developer test versions. Commodore don't have plans to issue an official upgrade to Workbench until at least later this year, possibly early in 1993. Sorry, but you'll just have to wait.

High standards

Having just bought the May issue of *Amiga Computing*, I was pleasantly surprised to find a free database worth £50 on the CoverDisk. However, it seems to be an example of keeping up with the Joneses.

Although most people will welcome the move, I would draw your attention to your competitor, *Amiga Format*, which used to be excellent, but became obsessed with CoverDisks and in the process produced total dross in the rest of the magazine.

Please keep the magazine's standards up! I would especially like to know where all the articles have gone to that *Amiga Computing* was so famous for? By this I mean readable articles, without incorporating sales pitches, an example of which would be the excellent piracy feature in the October 1991 issue.

These provide interesting insights into the Amiga world without exhorting you to buy anything, and greatly expand the readable life of the magazine.

Having said this I don't want to discourage you from producing excellent CoverDisks, but don't fall into the trap of your competitor-turned-games magazine.

Jonathan Parry, Rhuddlan

We enjoy producing exactly the sort of article you mention, but you have to face the fact that in a consumer market there are precious few "issues" on which

to write. Last year alone we addressed the problem of pornography in three separate articles (long before other magazines took a serious interest), and piracy in the major cover feature you mention in your letter.

The issues of over-pricing, poor customer services, and dishonest dealers are attacked every month in the letters pages, and will be hammered home even more in the new Amiga Mart section you'll find in next month's magazine, so don't worry about our avoiding the sort of features you find so readable.

If anything, we would hope to increase our coverage in these areas. What do the rest of you think?

Computer people

In reply to Ian Hodgett's letter in the May issue, I would be only too pleased to send him our copy of The Little Computer People for the price of the postage if you could connect us.

On a more serious note, I would like to mention my observations on the attitude of a lot of the retailers who attend computer fairs. At the last two I have visited, World of Commodore at Earl's

Court and the 16 Bit Show at Wembley, I have had the misfortune to purchase both hardware and software which turned out to be faulty.

The first was the Power Hand Scanner, whose software crashed out on my machine. I returned to the show the following day and was given an updated version of the software. This, too, regularly crashed the machine and, as the show had now ended, it took three faxes to Power Computing before I received a response.

I was subsequently offered a further software upgrade and any others which followed free of charge.

In a separate incident at the 16 Bit Show, my 10-year-old son purchased four games at discount prices from a stand only to find that when he tried to run them one wouldn't get past the intro screen and another seemed to be a blank disk in a glossy box.

Once again I returned to the show and, mainly due to my insistence in obtaining receipts for these goods when purchased, I managed against a marked reluctance on the part of the sales staff to have my son's money refunded. It

should be the responsibility of the organisers of these events to ensure that all their exhibitors operate in the same way as they do in their normal retail shops.

Robert Lye, London

Thanks for the offer of Little Computer People. If Ian Hodgett sends us a stamped addressed jiffy bag we'll forward it to you.

On the point of your experiences at the shows, it sounds as if you may have an A500 Plus. At the World of Commodore show, where you had problems with the Power Scanner, the A500 Plus was brand new and many pieces of software were still having problems with it.

The response you had from Power seems to have been as good as you can expect from a large retailer, and although the hassle you personally suffered should have been avoided – service is rarely as quick as it should be – your experience is one of the less aggravating we've heard of.

The games company who sold you two duff games at the 16 Bit Show

Apology

In May's ESP column, a letter entitled "Mr Angry vs Beginners" was, by an oversight on our part, printed containing a statement which was found to be offensive to the person concerned, Mr Colin Kostyrka.

Amiga Computing would like to take this opportunity to apologise to Mr Kostyrka for any offence or distress the letter caused, and assure him that the sentiments expressed by the reader's letter are in no way shared or supported by this magazine.

should have been more careful, as any problems with the A500 Plus should have been sorted out by then and incompatible software clearly marked.

If your machine isn't a Plus model, you were probably just unlucky enough to receive a faulty disk.

At least you had your money returned – some high street shops will only do this after threats to report them to the Office of Fair Trading!

Is copy protection a swindle?

I have owned an Amiga for three years and consider myself an experienced user. I have always read the letters page with interest, especially the ongoing piracy debate.

As a serious user of both games and business software, I am constantly appalled by the way Amiga users are treated by software companies, and probably like many other serious users am considering a move to the PC.

The reason is copy-protected software, which has been the bane of my life, along with software which cannot handle non-standard configurations and poorly written or converted software, all in the name of piracy. I have had enough!

This won't load, that won't load, this won't install on my hard drive, that won't run because I have 2Mb fast RAM and a hard drive. How much more? How much longer? I have a long list of games which won't load on my machine, for example Speedball 2, F16 Combat Pilot, Jimmy White's Snooker, Kick Off 2, Stunt Car Racer, and all three games from the Cartoon Classics bundle.

I've checked my floppy drive, which is fine, so it seems obvious that all the software which won't load does so because of on-disk copy protection.

The software houses' excuse for their bizarre on-disk protection routines is piracy. Yes the problem exists in a big way, but the software houses desperately need to wake up to the truth that there is no on-disk protection which can't be cracked. If you want cracked software you can get it, and even Ocean's dongle didn't cut the mustard.

Who pays for it all? The honest user. In addition, the average honest user pays not just at the till but every time he or she puts a disk into their beloved Amiga which defies every rule of AmigaDOS. Who at the software houses, with hand on heart, can say that the over-complex routines aren't killing disk drives?

Just listen to the sound of the drive heads crunching away attempting to do something they were never designed to next time you load up a protected game.

And how many hard disk owners have bought a game only to find that it will not install on a hard disk? It is an absolute joke that Amiga users are letting the software houses get away with this.

Considering the expanding user base of the Amiga and the decreasing cost of addi-

tional hardware, more and more users are benefiting from hard drives as they are the best way of expanding memory as well.

More and more people are therefore finding out what a hazard copy-protected software is and how the software houses are treating Amiga owners as kids.

The idea of manual copy protection may not cure piracy but I reckon it could be a major step in the reduction of it. I for one won't be buying any more copy-protected software of the on-disk variety.

I don't like it, my drive doesn't like it, and if anyone else doesn't like it I suggest they boot up their favourite wordprocessor and tell the software houses.

John Glover, Camberley



Manual copy protection is as vulnerable to piracy as any other form of protection, because if a cracking crew can get around a hardware dongle you can bet your breeches they can get around simple "type in a word from the manual" routines.

Only recently we saw a copy of Microprose Golf which asked for a word from the manual then went onto the game no matter what you typed in.

The software houses have to keep sales up, and they can't do this if pirates crack and distribute their latest game before it has reached even cost-effective market penetration. However, you quite rightly point out that the situation has become unbearable.

Crackers are keeping one step ahead of even the best on-disk protection, prices are spiralling upwards, games seldom work with hard drives, some are disgracefully badly converted from PC to Amiga, and some are unstable with anything other than a very standard A500. It has to stop somewhere.

Perhaps the answer lies in CDTV and the A570 drive. The CD-ROM medium is pirateable only by very professional operations, and crackers would have to invest heavily in duplicating equipment if they wanted to make money from their "hobby".

With 650Mb of data on a single disk, games could be written as to be so dependent on the CD-ROM that even after cracking it and downloading it to floppies, the crackers would find that huge lumps of data on six or eight disks coupled with massive loading times would leave their "product" dead in the water.

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Ironing out

ARexx provides the power of an assembler with the ease of use of interpreted languages. Alex Gian shows how debugging needn't be debilitating...

The greatest advantage of an interpreted language is its interactivity. The source program can be easily edited and changes can be tested instantly.

This is very important, particularly when one is learning a language, or making a program prototype. Interpreted programs are run line-by-line, and while this slows them down quite a bit, it gives an enormous gain in flexibility.

Because they are run line-by-line, it is also possible to trace their execution step by step - this makes the finding of "bugs" a lot easier. Assemblers and compiled languages do not share this happy state. Whenever a change is made in a piece of code it must be recompiled, linked with all other relevant bits, loaded up and run again. This is very frustrating when you only want to make a one-line change.

ARexx distinguishes itself yet again by providing first class tracing and debugging facilities. In this issue we will look at two of the most important ones - the Trace and Signal instructions - and see how we use them effectively to help track down and eliminate program errors.

Once again we will use an example program - trivial perhaps in its use, but which contains the basis of many useful techniques on which to build. The program - interact.rexx - is in the ARexx drawer of this month's CoverDisk.

The Signal instruction acts as a "guard" or "overseer" on the system. If any one of certain internal conditions - such as errors, interrupts and so on - arise, then it makes sure the appropriate action is carried out.

The conditions to check for, and the relevant action to take, are set by the programmer - it is also very easy to activate or deactivate these checks as desired. The syntax of the command is as follows:

SIGNAL ON/OFF "code"

The ON/OFF option simply tells ARexx whether to turn the test for the event specified in the "code" on or off. The "code" itself describes the test, and is also the name of the label that the program jumps to should that event occur.

For instance, if you wanted the program to notify you upon encountering a syntax error, you would need the line:

SIGNAL ON SYNTAX

Somewhere else in your program you would need to have the appropriate label, which might look like this:

```
syntax:
say "syntax error found on line" SIGL "- be more careful"
exit
```

The special system variable SIGL stores the line

number where Signal was activated. If, further in your program, the line:

SIGNAL OFF SYNTAX

is found, this feature will be disabled. The following are the "codes" of the events which the Signal command can test for:

SYNTAX- Syntax errors

IOERROR- Error in input/output

HALT- An external halt request (described in the section on inpc)

NOVALUE- This very useful feature will check whether a variable without a value has been called. Remember that normally ARexx would automatically give an unassigned variable the value of its own name, in upper case, ie the line "say x" where x has not been defined would output "X".

What use might this be? Well, ARexx can create variables dynamically, even while the program is running. They may even be given as input strings! It can be important to know the state of a variable.

This is a whole subject on its own, and we will examine it another time, when we look at the Interpret instruction and the Value() function. These dynamic properties of ARexx are a very exciting feature that can allow interesting, powerful and compact ways of solving problems.

In some ways they are similar to features found in Logo, Lisp and other AI languages. But we digress...

BREAK_C/D/E/F- Used to check if a Ctrl-C (D, E or F) has been issued at the keyboard.

Finally, it is also possible for the Signal instruction not to be followed by any of the above "codes", but by an arbitrary expression (the optional keyword Value may also precede the expression).

If that is case, the expression is evaluated, and the result is the label to which the program will jump (of course, this label must exist, otherwise you have an error! Dynamic programming style requires a lot of care). Eg:

```
xyz = 'here'
SIGNAL xyz /* or SIGNAL VALUE xyz */
.....
here:
/* This is where we end up */
```

In this way, Signal is like an intelligent GOTO statement for transferring program control.

Signals from our program are very useful, but sometimes we need to trace it even more closely for debugging purposes. Trace provides us with a large number of options on how to perform the trace. Here we list them all briefly, and then look at the main ones.

ALL COMMANDS ERRORS INTERMEDIATES LABELS RESULTS SCAN

Note that these options have some unusual features.

the glitches

It is permissible to specify only a part of their names. In other words, Trace Labels, Labels, Trace Lab and Trace L are all equivalent.

The options can be either strings or variables. This is a bit weird. It means that variables are not evaluated. So Trace 'al', Trace A and Trace al are all the same.

The trace may also be set from a function, eg Trace(r). The function Trace() simply returns the current Trace mode.

As with the Signal instruction, it is possible to have an expression as a parameter for the Trace instruction. However, if this expression begins with a string or a symbol it must be preceded by the keyword Value. In the following example, a = 'lab':

```
TRACE VALUE A
```

would be the same as:

```
TRACE LABEL
```

There are two more special options, "?" and "I".

? is the Interactive mode, described below, and ! is Command Inhibition mode, described in the section on interprocess communication. These two options must precede any others. Every time they are called they toggle themselves on and off. In general, Trace Off will disable all tracing.

Right, now before we get totally lost in the syntax, let's have a look at what this instruction will do.

The All option traces every single line, and will be most useful for beginners. The Intermediates option goes a step further, and expands every expression as well as tracing it. Labels and Results are fairly obvious.

The Normal command traces the points where the program would fail and Errors traces commands that generate problems in the command host. Scan only checks the syntax, but does not run the program.

The Interactive mode - ? - pauses execution after every single line. This allows you to

single-step through those tricky bits of your program.

During Interactive mode, anything you type in will actually be interpreted, and added to your program. If you just press the Return key, then the next program line will be executed.

During the trace, ARexx precedes each line that is printed with a short code that "explains" it. These codes may initially look confusing, but they are really easy to understand, and very useful.

They are explained briefly in the program itself. The instructions are also included as comments.

There is no better way to see this than by example. Run - and study - the program interact.rexx, in the ARexx drawer. It will allow you to watch a program running under different traces, which you set. Make sure you read the section on interprocess communication before you do so.

Next time we will look at practical programming with ARexx.



Here we will look at three special facilities provided by ARexx, which can only be achieved due to its multitasking nature.

Clips

These do not have much to do with debugging, but they are so useful, that it is about time we mentioned them. Basically, Clips can be seen as a way of defining global variables that remain available to all ARexx programs even after they exit.

Now admittedly Clips are not the only way to do this. We could save data in a file, perhaps in RAM; and read it as we need it. We could also use the AmigaDOS environmental variables. However Clips are elegant, neat and supported by ARexx.

Clips are set with the SetClip() function, eg:

```
SetClip(pi,3.14)
```

In practice you are more likely to use them to store information that gets updated by various programs, but needs to be available to all. Memory pointers are a good example.

Clips are retrieved with the GetClip() function, eg:

```
my_screen = GetClip(screendata)
```

It is assumed that the Clip "screendata" has been set by some other program. Clips can act as a temporary work database. The current list of clips can be checked with the Show() function.

Command Inhibition

We have already mentioned Command Inhibition. It is activated and deactivated by the Trace ! instruction. Command inhibition is necessary for a multitasking language, in order to disable potentially destructive external commands.

While in this mode, the program will print out the commands that it would normally send, but it will not actually send them to the command host.

The ARexx command utilities

We are referring to the utilities supplied with ARexx itself. Here we will look at those that are relevant to our current subject - TCO, TCC, TS, TE and HI.

HI (halt interrupt) issues a halt command to all programs running under ARexx. This may be useful if some programs are running out of control, but in practice it is not going to be used a lot. We mention it for completeness, since we touched on the Halt Signal above.

A command that is going to be used a lot is TCO. This opens the external Trace Console. The Trace Console is a window to which all the output from the system traces is displayed - it also accepts the input when traces are executed interactively.

If a Trace Console is open, all trace output will be automatically directed to it. If it is not, the output is directed to STDOUT - your Shell window.

However, some programs may not have a STDOUT stream, especially if they are running as background tasks. If you want to debug programs like this, you will have to open the Trace Console.

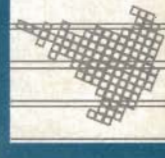
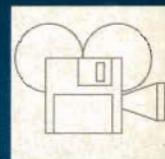
Another case where you may want to open the Trace Console is if you do not want the trace output cluttering your CLI window.

In this case, all the output relevant to the trace will appear in the trace console - all your normal output will still appear at the CLI window, where you would also have to enter any variables that are PULLED into ARexx.

Before you run the interact.rexx program, first open the Trace Console by typing TCO at the CLI. When you are finished type TCC - Trace Console Close - to get rid of the console window. Try running the program without the trace console as well, to see the difference in operation.

The command TS forces all tracing into Interactive mode. This can be useful if a program has run out of control - you could type an appropriate command to bring it back into control.

The TE command forces the trace flag off for all the programs currently running under ARexx.



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Multimedia movies

Just as the Amiga itself has spread into an almost infinite number of areas, so has its software. A perfect example of this phenomenon is Scala – a program which at its launch was marketed as an interactive multimedia presentation system with only relatively brief mentions of its now famous titling abilities.

Almost as soon as it hit the streets, Scala was dragged kicking and screaming into countless DTV setups and forced to leave its interactive past behind to become a dedicated titling tool.

A similar fate could soon befall Presentation Master – a program which, as the name suggests, primarily serves a multimedia role, producing everything from on-screen interactive presentations to full PostScript-quality hard copy, complete with designer fonts and graphics, thanks to its stunning internal structured drawing program.

If that's not enough, the aforementioned hard copy can be sent to a print bureau and output onto slides displaying everything from PostScript-quality text to corporate logos.

Full colour graph creation also awaits the user via the program's own spreadsheet-to-graphics processing software – which again can appear on screen, paper or slide.

All well and good if you're into presentation, but how do all these additional features lend themselves to DTV? As I mentioned earlier, the Amiga and its applications are spreading far and wide, and as a result consistent output – no matter what medium



Sharing the limelight

If the prospect of still frames is too much for your artistic soul to bear, the power users could always take advantage of PM's IFF output and still retain continuity while enjoying the titling, text and animated brush effects that programs such as Scala have to offer.

For example, if you already have a Scala in your collection there's nothing to stop you taking advantage of PM's IFF output option and use the subsequent IFF images as backdrops for various titles or perhaps as animated brushes above other stills.

Fortunately all PM's output is strictly standard IFF with no nasty Hams to ruin the introduction of text or graphics. Although a rather expensive approach to the problem of unified output, the PM and Scala combination gives perhaps the perfect platform for a total multimedia/video-based presentation.

With the assistance of Scala we have a perfect and complementary videographic display – complete with animated text and graphics – plus an option to offer you prospective employer totally compatible hard copy to supplement your whizz-bang, whistles-and-bells video.

If you do take this route, PM will happily save an entire show frame by frame ready for importation into Scala. Obviously this is an expensive and a somewhat less than efficient method of employing PM within your system, but it's still no more expensive than using a dedicated DTP packages such as PageStream or ProPage – plus their associated structured drawing software – as a vehicle for the creation of quality artwork.

Paul Austin looks at incorporating Oxix's excellent Presentation Master into a video environment

it appears in – is becoming more important all the time. If you happen to wander into the field of corporate video, the option of supplying hard copy in the form of slides or PostScript-quality print could make all the difference between you and numerous other hopefuls.

At this point it's worth stressing that Presentation Master isn't as stylish as Scala and couldn't match it or other high-end packages such as Broadcast Titler II as a standalone titling system.

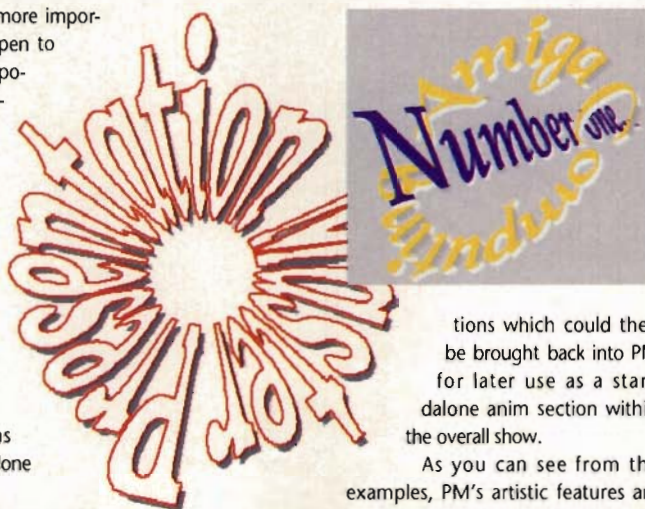
Having said that, as a designer graphics creation and display platform it can still be very impressive, especially when combined with a genlock.

Static

The primary difference between Presentation Master and other possible titling applications is that all available screens are static. This doesn't mean that the screens are totally free from movement, as each screen can be introduced with a variety of wipes and fades.

Unfortunately, full screen introductions are the limit of the program's internal animating features. If you require actual animation within the screen itself you'll need to take advantage of PM's Animation Play option, which allows the user to incorporate normal Anim files into the show at a pre-defined point.

To retain continuity you could save individual IFF images, charts or text from the main program and then employ these as a basis for a subsequent anima-



tions which could then be brought back into PM for later use as a standalone anim section within the overall show.

As you can see from the examples, PM's artistic features are pretty impressive. Imagine the time it would take to create such logo types in DPaint, for example. Thanks to PM such artwork is only a few mouse clicks away.

The reason for such speed is the program's use of its own selection of Poly fonts. These are a variant of Compugraphic fonts which allow total control over each letter within the text.

An added bonus is that PM also accepts standard Compugraphic fonts which can be manipulated in exactly the same manner as the program's own Poly font variety.

All the user need do is add an appropriate line of text, assigning colour and point size prior to importation into the paint program. Once on screen, the text can be stretched and shrunk at will.

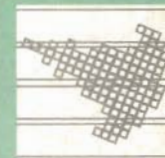
Letters themselves can then be edited individually to produce the exact style you require. It must be said that individual letter editing can be a tricky process, as small levers and assorted points appear on the letter allowing you to push, pull and generally interfere with the character in question.

Thanks to this process, it's possible to create or perhaps more importantly duplicate any font style you require. Once the text itself is correct, the program can really take you and your text into an area of styling that standard paint programs can only dream about.

Because all the elements are merely collections of points, the new logo can be bent, twisted or generally interfered with without losing any image quality or character.

As a result, extrusions, perspectives, drop shadows, bends and assorted re-sizing effects are all added automatically in totally user definable manner.

To sum up, PM is not the ideal package for the DTV beginner, but if you're looking for a way to offer more than video alone while retaining continuity across the board it's the ideal answer to a tricky question.



Closet maths

Computers are very good with smallish, uncomplicated, positive whole numbers or "integers". They handle negative integers like -1, -360, and -32760 equally well.

Fractions and decimals, like one and a quarter, 8.3333, -1.56, and -2/3 are often used in calculations. They are called "real" numbers and consist of an integer part (like "8") and a decimal part (like ".3333").

Sometimes they are called "floating point" numbers because the position of the decimal point is not fixed. Electrical engineers and A-level maths students also have complex numbers available to them.

These numbers consist of a real part and an imaginary part. The C language does not seem to have a corresponding storage class for these numbers – perhaps it is as well.

Short integers can be stored in a "short" or "short int" variable of two bytes, larger integers in a "long" variable of four bytes.

If you display an integer variable of 255 in hexadecimal format, the result is 00FF in a short variable of two bytes, and 000000FF in a long variable of four bytes. What you see is what you get. Boring.

If a real number, consisting of an integer and a decimal part is stored in a four byte "float" variable, the result is much more interesting. The number 1 is stored as 3FF00000, and -1 is stored as BFF00000.

This indicates that the most significant bit is used to store the sign of the number. Examining the floating point storage of integers, it seems that numbers like 1, 2, 4, 2 to the power of anything, get special treatment.

Interestingly, 2⁻¹ is stored as 3FE00000 and 2⁻² as 3FD00000. From this it can be seen that the floating point number is made up of three chunks of information – the sign (one bit), a number representing the power of 2 (the exponent) or binary point (11 bits), and the

It's generally thought that Amiga owners do not attempt serious computing, preferring graphics and sound. Margaret Stanger thinks otherwise...

number itself, or mantissa (20 bits). The mantissa is normalised to always be between 1 and 2. The number is exponent x (1 + last 20 bits as a fraction).

Hence $3 = 2 \times (1 + (0x80000/0x100000))$, $5 = 4 \times (1 + (0x40000/0x100000))$, $6 = 4 \times (1 + (0x80000/0x100000))$ and so on.

More interesting, real numbers are stored in the same way. $4/3$ is stored as 3FF55555, $5/3$ is stored as 3FFAAAAA or $1 \times (1 + (0x55555/0x100000))$, and $1 \times (1 + (0xAAAAA/0x100000))$.

For a number with a very large integer part, the error in accuracy may be quite large. The program on the support disk demonstrates this loss of accuracy by multiplying by three numbers with varying sizes of integer and decimal parts.

Floating point

A floating point number can be stored as a "double" of eight bytes rather than as a float of four bytes. If each float in the demonstration program is replaced by a double, the answers can be very different.

Another factor that affects accuracy is the way that numbers are rounded. Usually numbers 1,2,3 and 4 are rounded down, and 6,7,8 and 9 are rounded up. The number 5 can get special treatment which varies depending on the architecture of the computer.

The program on the support disk demonstrates this by multiplying numbers by five numbers with varying sizes of integer and decimal parts.

Sometimes "printf" supports the %e, %f and %g options to display floating point numbers, in addition to the usual %c, %s and %d options do to display characters, strings and integers.

My compiler does not have this option, but it does have two routines, fcvt and ecvt, which will provide an Ascii character string corresponding to a floating point number. This enabled me to write a routine to put the Ascii form of a floating point number into a buffer for display.

A fully commented version of this routine – ftoa() – is available in the program source code (float.c) on the support disk. Here is a brief description of how it works.

After the character buffer is cleared, the function "fcvt" is called to put an Ascii character string version of floating point number "f" into a buffer, and return the address of the buffer.

The input parameters are :

- The floating point number
- The required number of decimal places
- The address of an integer to hold a number representing the decimal point position
- The address of an integer to hold the sign of the floating point number

All that is then necessary is to copy the Ascii string into a suitable buffer, including the sign and the decimal point in the right places.

The sign is zero for a positive number, non zero for a negative number. If the decimal point number is positive, it indicates the number of digits in the string before the decimal point.

If the decimal point number is negative, it indicates the number of zeros between the decimal point and the first character in the string. If the decimal point number is zero, the decimal point should be placed before the first character in the string.

The ftoa() routine looks at the value of the decimal point number, *d. If it is zero or positive, the sign is placed in the receiving buffer, then the characters that precede the decimal point, the decimal point, then the rest of the digits.

If *d is negative, the sign is placed, then the zeros before the decimal point, the decimal point, then the digits in the string.

C routines

Previously, all reading and writing files was carried out using the Amiga system routines. The C Library has its own file handling routines which can be used as an alternative.

The C Library routines are identical for every platform, and will call the appropriate system routines. This program opens a file, writes a text string into it, and closes the file – it may not break any speed records, but it will be portable.

The program on the support disk (float) demonstrates floating point storage and errors due to rounding. It features some of the C Library file handling calls, and a routine to display a floating point number as a text string.

The program first demonstrates how floating point storage handles positive and negative integers. It then looks at the storage of fractions and decimals, including inexact decimals with recurring numbers.

Calculations with floating point numbers demonstrates how inaccuracies can occur. All this data would clutter up the screen a bit, so the program opens a file imaginatively called "output", stores all the data as text in this file, closes the file, and exits.

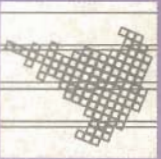
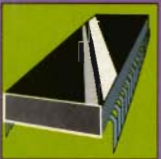
Missing link

Calculations involving integers can be done using the normal add, sub, mulu, muls, divu and divs commands in the 68000 instruction set. Floating point number calculations need the help of routines from the one of the Amiga point maths libraries.

I used the following code to link with the Amiga IEEE floating point maths library:

```
FROM LIB:c.o+"float.o"
TO "float"
LIB LIB:lc.lib LIB:amiga.lib LIB:LCM.lib
```

There are other commands and libraries available for enhanced Amigas.



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What a show!

After infuriating the hordes of patiently waiting punters by nipping straight down the press lane with the rest of the assorted journalistic types, I arrived in what's best described as a twiddler's paradise...

At every turn a new collection of fades to slide and buttons to press, interspersed with countless keyboards all doing their best to impress the eager masses milling around the stands.

After half an hour I finally managed to control my kid-in-a-sweet-shop tendencies and get down to some serious sniffing around.

Much to my surprise there were still relatively few Amigas on hand, with the ST for some bizarre reason remaining dominant.

Having said that, the gulf between the faltering Atari and the pack of Amigas, PCs and Macs is definitely narrowing. A primary player in the Amiga's challenge, was Zone Distribution, was surrounded by the usual crowd bobbing up and down with jaws agog as Zone's Andy Bishop put the Amiga through its multitasking paces.

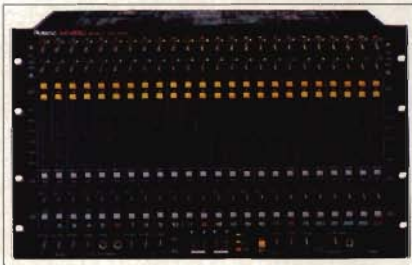
It was quite a moving experience to see the smiles slowly fade from the faces of countless PC, Mac and especially ST fans as Andy pulled down screen after screen of active programs all running in unison under the auspices of MPE (multi-program-environment) within Dr T's KCS sequencer.

As in the Amiga market, the biggest buzzword among the 140 exhibitors was multimedia, with almost every major hardware manufacturer trying to take advantage of this new medium thanks to this latest addition to the Midi repertoire.

During the formative years of the Midi format, the prime concern was simply to enable across-the-board control of keyboards from various manufacturers. However, over the last year Midi has taken the next step in control and now reaches out to embrace more than simple control compatibility.

The advent of GM, or General Midi, is one of the first steps in this new direction. As a conse-

Paul Austin boards the *Amiga Computing* tour bus and heads for the bright lights of the third annual Midi Music Show



quence, many of the latest module releases on show now embrace this new design format which will virtually ensure that Midi will become one of the kingpins of future developments within multimedia.

The benefit of this new format is that it ensures playback compatibility

across the board by assigning compatible sounds or patch positions to all modules employing the system.

As a result, sequences written with any GM module as the original playback medium will be totally compatible with other GM modules from different manufacturers in both synth and drum sounds.

No more piano where a cello should be or triangle for a tambourine. Bliss, absolute bliss...

Of course, the sounds on each module will be particular to that instrument, but all instrument locations will remain permanent. This has obvious appeal to the multimedia market and with each module capable of playing 16 sounds simultaneously, whole orchestras await the touch of a button.

The big players have already seen the potential that a little co-operation can provide and to that end both Roland and Yamaha were displaying GM-compatible modules on their respective stands.

Instrument manufacturers aren't the only people taking advantage of GM. Commodore were also busy waving the corporate flag under the banner of CDTV, highlighting its ability to take advantage of the new modules via CD+Midi - a format which we explored in the



May issue of AC. Perhaps an even more significant step has been the development of Midi machine control. Although Fostex has had its own system on offer for about two years, the ability to control both your instruments and a multitrack from the comfort of your sequencer will soon be available to us all as the various manufacturers take advantage of this latest Midi ability.

Entrenched

Again, the expansive nature of Midi provides a platform from which to emulsify all aspects of the creative process.

As the Amiga has already become the premier multimedia machine the future never looked brighter, with Midi-compatible programs such as ShowMaker already well entrenched in the Amiga market.

Now the prospect of a graphical, musical and video workstation will soon become a reality rather than a distant aspiration, thanks to Midi's new abilities and the spread of MTC onto other mediums.

Next month

As you've no doubt noticed there's a lack of specific product information in this month's column. This is totally intentional as next month's feature will be devoted entirely to Midi and Desktop Music Systems (DTMS). During the article I'll be looking at all the latest Midi-compatible hardware and software releases, hopefully providing the best possible advice for any would-be investors.

If you're looking for some help on the tricky business of setting up a Home-based Midi studio, you can't afford to miss next month's issue of AC. Keep reading...

Help is at hand...

As Midi becomes more widespread and inevitably more complex, the number of Midi-related sleepless nights is bound to rocket. Fortunately for all the alone and confused users out there, there is an organisation called the United Kingdom Midi Association which could be the perfect alternative to lobbing your kit out of the window in the early hours.

They produce a bi-monthly Midi magazine full of the latest releases, along with assorted hints and tips on how to get the best from your setup. To be honest their advice isn't exactly cheap, but for the serious user it could still be money well spent.

Aside from the magazine, the biggest appeal of membership is the access it gives you access to a hot-line offering instant Midi advice to any member in need.

The United Kingdom Midi Association (UKMA) can be contacted on 081-368 2245 or faxed on 081-368 7918.





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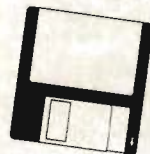


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Exploring by Email

Human nature being what it is, cutting your comms bill by using a cheaper phone service, faster modem or offline reader can eventually have the opposite effect.

It's very tempting to look at how much you are saving by your virtuous behaviour and careful management of online time, then blow the whole thing by getting hooked on online games.

Online games are aimed at solitary players who are fed up with only having a computer as an opponent. Games like Scrabble quickly become boring when played against the computer which is why several BBSs run live versions where players from all over the country can log on simultaneously and play each other via their modems.

Unfortunately it's very easy to get carried away and run up enormous phone bills even in the middle of the night. Get interested in the game and time flies. Only when you log off do you realise that you've just spent your monthly allowance in a couple of hours.

Having said that, with care and an eye on time and costs, online games can offer lots of fun and a unique style of play.

Proliferation

Probably the best known online game is MUD – its popularity is reflected in the proliferation of different versions running all over the world.

MUD stands for Multi User Dungeon and is effectively an adventure game which runs constantly. As with normal adventures there are plenty of non-player characters dotted around with whom you can perform a limited form of interaction.

The attraction, though, is the addition of other human players like yourself. Computer-controlled players are fairly predictable – human ones are not!

Over the past couple of weeks I've been look-

Pat Winstanley gets involved in an adventure game with the capacity to span the whole world!

ing at a version of MUD being developed by Matt Holmes at CiX under the working title of Blunder. Although at the time of writing it is not yet fully running, the promise is for something very special.

The game itself is based on a system from America which can be modified to suit any particular set of users. It is a simple text adventure with the normal type of commands such as north, west, examine hedge, kill orc and so on.

Scattered around the playing area are various goodies such as weapons, money, treasure and the obligatory ropes and torches. Virtually everything you find can be sold in the shop for gold pieces, and this gold can be used to buy better armour and weapons or if you prefer, experience points.

Gaining experience is mainly a matter of killing anything you can then going off to the guild to have your level raised. The higher your level the stronger, more intelligent, more dextrous and so on you become.

Also with higher levels comes the ability to cast spells. The aim of gaining levels is to eventually reach the dizzy heights of wizard, and this – if you can afford to play long enough to reach it – is where the fun really starts.

Wizards can do literally anything to any other player in the game. There you are, chugging along in the game, waiting for your health to restore after a particularly difficult battle in which you finally managed to defeat the monster who carries hundreds of gold pieces, and a wizard spots you.

Before you know it you are forced to drop all your ill-gotten gains, cry, laugh, grin, smirk or whatever else the wizard's devilish imagination can

Start exploring...

Blunder should be up and running by the time you read this. Contact CiX on 081-390-8446 for further information. You can contact me by Email as "peewee@cix.com-pulink.co.uk" or by snail-mail at the AC address.

come up with – you're generally a helpless puppet.

Depending on the wizard's mood he might let you go empty-handed, or perhaps create a brand new super turbo-nutter weapon and give it to you. It pays to keep in well with wizards if you don't want to be teleported, weaponless, to the centre of a band of orcs elsewhere in the game.

The other aspect of being a wizard is the ability to create fiendish castles populated with vicious monsters, fabulous treasures and mind-blowing puzzles.

Each wizard has his own castle, several of which are dotted around the main playing area. Although the aim of the game is to become a wizard, use of the abilities gained on achieving that level rather depends on your programming skill.

For instance, in this version you need to be able to code in C to program a castle. However, lack of this skill doesn't stop you acting as a puppet master.

Harmony

From the ordinary player's point of view, other players in the game can be a source of either grief or companionship. Some puzzles are encountered which positively require two players to work in harmony.

For instance, one might be needed to operate the controls of a door while the other player explores. Communication in this situation is by shouting, such as "Wizzywig says, OK Dobbin, I've found the treasure – let me out now", to which the response might be "Dobbin grins an evil grin. Dobbin says no!".

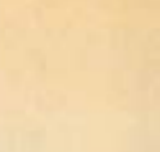
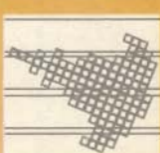
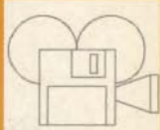
Friendly rivalry between players is the major attraction of the game. A voice call to arrange a login time is all that is needed to make up a party of two or more players who can then storm across the system as an avenging army, killing everything else in sight.

But if you are the slower typist, be prepared for your companion to pinch all the booty before you can even hit Enter. If this happens you will be reduced to hunting out the objects lying around in open view, although even then you may find someone has been there before you.

However, the play area resets at reasonably regular intervals so there's always something for the newcomer to find.

```
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[Scrollback Window] # of lines 935 size 24054 line 382
kick      kiss      knee      laugh     lick
love      noan      nibble    nod        poke
pout      puke      purr      ruffle     screen
shake     shiver    shrug     sigh       sing
slap      smirk     smile     snap       sneeze
snicker   sniff     snore     snuggle    spit
squeeze   stare     strut     sulk       thank
twiddle   whistle   wiggle    wink       yawn
> force wizzywig nibble odin
Wizzywig nibbles on your ear.
Ok.
> spui[il] [il] [il]
You spit.
> shiver
Brrrrrr!!!
> Wizzywig pouts.
french wizzywig
You give wizzywig a REAL kiss...it lasts a long time...
> Wizzywig slaps you!
enote Awwwww!
Ok.
> Wizzywig winks suggestively.
noan
You start to noan.
> Wizzywig whistles appreciatively.
pose
You send a ball of fire into the sky.
```

Lots of 'feelings' commands are available to both players and wizards alike as this extract shows. However, wizards can force ordinary players to perform any of these actions on command. Good job Odin was feeling friendly, otherwise that slap might well have ended up with the rapid demise of poor Wizzywig



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Go with the flow

Many people bought Amos in the belief that it would help them create fantastic software with ease, save the universe as we know it and make the perfect cup of coffee.

Unfortunately life is never that simple and to get any satisfaction from using this language you will have to get to know your Amiga and its capabilities a little better. It also helps to have good Colombian beans.

There are two main methods of producing a scrolling screen. The first is to take a series of interconnecting picture "blocks", place one on the screen, move it a bit and then place the next section.

This is known as a software scroll, because it is up to us – the programmers – to do all of the hard work. Xenon II uses this type of scrolling.

One of the advantages of software scrolling is that it requires very little memory because you really only have to have a standard sized screen open which is 320 x 200 pixels in size.

Custom chips

A hardware scroll is something which is handled mainly by the Amiga's custom chips, which are known as hardware. It is produced by defining a big picture, looking at one section of the picture and then panning across the rest, just like a television camera looking at a wall-mounted mural. Kick Off uses this type of scrolling.

Although fast, hardware scrolling eats up lots of memory. Fortunately the ease with which we can manipulate a hardware scroll more than makes up for the memory consumption. Before we do this I think we should look at how versatile the Amiga screen system really is.

Amiga screens are something special. You need to imagine them not as literal pictures but as a window looking into your machine's memory. By moving our viewpoint around we can examine almost any part of the chip memory contained inside the Amiga. Incidentally, this is how many graphics "grabbers" work.

AMOS allows us to manipulate these "windows on the world" using the Screen Display and Screen Offset commands. Screen Offset controls our view of the computer's memory through our window, while Screen Display controls the size of this window and its position on the monitor.

OK, now we all know how to open a screen inside Amos, don't we? It's pretty simple – load AMOS and make sure you are inside the editor (not Direct Mode). Type this line in:

```
Screen Open 0,320,200,16,Lowres
```

This tells Amos to create screen number 0 with a horizontal resolution of 320 pixels, a vertical resolution of 200 pixels and 16 colours in lo-res mode, which means the pixels are pretty square and chunky. We now have a screen we can experiment with.

The next step is to define two variables XSIZE and YSIZE, these will tell Amos how big our window will be:

```
XSIZE=320
```

```
YSIZE=200
```

Smooth, fast scrolling is often important for convincing gameplay. Peter Hickman looks at ways of moving your backgrounds

OK, now we must start a loop which will allow us to change the characteristics of this window with the mouse buttons. Every time we go around the loop, the mouse co-ordinates are put into the variables X and Y.

These are then used to position the window on your monitor. It sounds confusing, but if you imagine the window as a piece of paper being moved around on a desk – which is your monitor! – it may seem a little clearer:

```
Repeat
  X=X Mouse-100
  Y=Y Mouse-160
```

Now we must check the state of the mouse keys. If the left button is pressed the variable XSIZE is decremented. If the right button is pressed the variable YSIZE is decremented.

The command ADD allows a little more control over variables than the standard INC or DEC commands. By using ADD we can make the number contained in XSIZE wrap around from 0 to 320 with very little work:

```
If Mouse Key=1
  Add XSIZE,-1,1 To 320
End If
If Mouse Key=2
  Add YSIZE,-1,1 To 200
End If
```

OK, now for the magic command. As you can see the first parameter is the screen number, followed by the X and Y positions plus XSIZE and YSIZE:

```
Screen Display 0,X,Y,XSIZE,YSIZE
```

The final part of our program waits for you to press both mouse keys before it stops:

```
Until Mouse Key=3
End
```

I hope this has not been too complicated to follow so far. The concepts are simple, but I must admit that the whole subject can become overpowering!

I have now introduced you to the basics of using Screen Display, but what about Screen Offset? It is this command which actually creates the scrolling.

If we defined a standard sized screen and used Screen Offset to look above – or below – it, we would see what is contained in those portions of memory.

To start off with, let's open up our screen by typing the following lines into the Amos editor (remember to save your last program if you want to keep it):

```
Screen Open 0,320,600,4,Lowres
Flash Off
Hide On
Curs Off
Palette $0,$90
Cls !
```

You will notice that I have reduced the amount of colours from the standard 16 down to four. I have also increased the size of the screen to 600 pixels

high, which is three times the height of a normal screen.

The next Screen Display command features four commas in succession. This is not a printing mistake! It tells Amos to use its own defaults instead of the missing parameters. The last part of the line tells Amos that we only want to display 200 lines of this 600 line screen:

```
Screen Display 0,,,,200
```

I am not a great lover of football – or football simulation computer games – but they can be useful to demonstrate the principles we are dealing with here. So in the best tradition of Blue Peter, here is a pitch I drew earlier...

```
Draw 0,299 To 320,299
Box 0,0 To 319,599
Circle 160,299,105
```

Even though we cannot see the whole screen, Amos will draw it for us.

Neat, huh? The penultimate step in this program is to let Amos know which part of the 600-line screen we wish to display inside our small 200-line window. Once again, the Screen Offset command contains a couple of commas, this tells Amos to use the default value for the X position of our view.

```
YPOS=0
Screen Offset 0,,YPOS
```

Now for the exciting bit! By pressing the left mouse button the screen will scroll smoothly upwards by telling Amos – through the Screen Offset command – to look at a different part of the picture held in memory through our small screen or "window". If we press the right button the screen will scroll downwards:

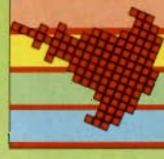
```
Repeat
  If Mouse Key=1 and YPOS>0
    Add YPOS,-5
    Screen Offset 0,,YPOS
  End If
  If Mouse Key=2 and YPOS<400
    Add YPOS,5
    Screen Offset 0,,YPOS
  End If
```

We must put a WAIT VBL command here to tell Amos to slow down. Try removing it to see how fast the program runs!

```
Wait Vbl
Until Mousekey=3
```

On the CoverDisk this month you can find an example program using horizontal scrolling. Why not experiment and see what you come up with?

● This is a rather sad AMOS column for me, it's my last one. Yes, after two years I have decided to move on to other things. So it's goodbye from me, and hello to Phil South from next month.



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Tweak your pictures

Processing and printing images to best effect is vital for professional-looking DTP output.

I want to concentrate on this aspect this month, following on from last month's look at achieving results from even the most humble of hand scanners.

Once the image is scanned in you are left with a massive black-and-white "dithered" picture – a representation of the original made up of lots of black and white dots.

These dots are arranged into things called grains. For 64 greyscale scanners the grains are eight pixels across by eight pixels deep, and each grain represent a shade of grey from 64 white pixels (solid white) to 64 black pixels (solid black).

This dither pattern is not a lot of use to us, firstly because it is so big and secondly because black-and-white printers – even high resolution inkjet and laser printers – can only really produce about 16 discernable shades of grey.

This is why any decent Amiga scanner software has a Convert to Grey option.

Conversion

So the next step is to convert the black-and-white dither to 16 shades of grey. The software does this by reading each eight by eight grain of the dither and deciding which of 16 displayable shades of grey it should be converted to. Because each eight by eight grain gets changed into a single grey pixel, the image is reduced in size to an eighth of the size of the dither.

In truth, such a greyscale image is actually too small. It will typically be about 200 pixels wide, less than a third of the width of a hi-res screen. To get a decent sized picture on the printed

In the second of two parts, Ben Pointer shows how to process and print impressive greyscale scans

The best greyscale images are produced by software that double-dithers. The smaller image in this screenshot is only single dithered, and is consequently smaller and less detailed



Using The Art Department you can adjust the gamma value of the image, thereby creating a greater contrast between the darkest parts of the image and the next level of grey. While it may look a bit wishy-washy on the screen, the gamma-adjusted image will print better

page you will have to keep it at about 100 per cent scale, and because its resolution is 75 dots per inch (the resolution of all IFF ILBM pictures), it will be a bit "blocky". To reduce the blockiness you have to scale down to at least 50 per cent, thereby doubling the output resolution to 150 dpi, but then you're left with a tiny picture.

Which is why any Amiga scanning software worth its salt it will employ a technique called double dithering.

Instead of converting each eight by eight grain to a single pixel of grey, it converts each grain to a two by two matrix of grey pixels.

Not only does this provide a bigger greyscale image, but by clever use of shades of grey in these two by two greyscale grains the eye can be fooled into thinking there are more levels of grey in the picture than there actually are.

The end result is that we have a bigger, more detailed greyscale picture

If you are thinking about buying an Amiga hand scanner, make sure the software double-dithers when it converts to grey; it makes a big difference to the quality of the image. A full width scan should reduce after conversion to a screen image about 400 pixels wide – about two-thirds of full screen width.

After converting to grey you might decide that the image is too light. But you have to remember that the grey shades put out by your printer are not the same as the grey shades you see onscreen, which are usually a bit darker. Before twiddling the brightness wheel and scanning again you should dump this first scan and see what the printed output looks like.

Sometimes, even with the brightness wheel at its lightest, you end up with a dark and muddy greyscale picture. In this situation you will need further software with which to process the image. The Art Department (TAD) is what you need – the basic package is good enough, but go for the more expensive professional version if you can afford it.

TAD has a number of options that allow you to alter the brightness, contrast and gamma values of images. Gamma conversion, put simply, means adjusting the image's shades of grey between black and white, but leaving the actual black and white parts of the image untouched.

On top of this, TAD will let you add a number of dithers to the picture, which can help to reduce the blockiness of the printed image, thus enabling you to print it at scales larger than 50 per cent.

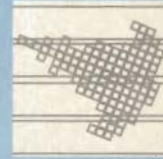
Printing professionally

For printed output you are ultimately dependent upon the dither patterns produced by your printer. At high resolutions the dots the printer puts on the paper are too often close together to be able to discern 16 levels of grey, especially at the darker end of the scale. Consequently you'll find that greyscale images will always dump better at a lower resolution – something between 120 and 180 dots per inch – because the individual dots are further apart.

If you are using PageStream for your DTP work you can force the dots in the printed output to be further apart by changing the Screen Frequency value in the Edit Co-ordinates requester for the graphic. The number you enter is a lines per inch (lpi) value, and I think you'll find that 60 lpi is best for most dot matrix output.

Professional Page users can only change this lpi value when outputting to a PostScript device. PageSetter II users can't adjust it at all. But all is not lost. There is a program available called TurboPrint Professional that gives your printer better dither patterns and – among many other things – allows you to alter the brightness, contrast and gamma levels of graphical output.

In fact you could say that what The Art Department is to the screen, TurboPrint Professional is to dot matrix printers – it's probably a compulsory purchase for anyone who is serious about hand scanning on the Amiga.



KCS Power PC Board

PC Emulation on your Amiga

About...

The KCS Power PC is a complete 11MHz 1Mb PC sub-system that can be fitted to any Amiga in minutes.

Based around NEC's highly successful V30 CPU, the Power PC Board offers a very high degree of compatibility at machine language level, yet runs faster than an equivalent Intel 8086.

The 1Mb of Autoconfig™ memory can be accessed by all current Amiga models including the A500 Plus. Even the original A500 can access 512K as a standard expansion with clock; plus a 512K RAM disk.

Adored by critics and users alike, the KCS Power PC Board is a real alternative to buying a complete PC clone.

Installation

The KCS Power PC board fits to any Amiga in minutes:

- On A500 and A500 Plus machines it simply slides into the trapdoor expansion; and doesn't invalidate your warranty!

- On bigger Amigas, such as the 1500/2000/2500/3000, it drops into a vacant Amiga slot using the custom designed adaptor board.

- Once fitted, your Amiga can be switched into PC mode simply by clicking an icon. Just reset and it's an Amiga again.

No fuss, no hassle. Just two machines in the space of one.

Video

- Supports the majority of EGA and VGA modes in 16 glorious colours and monochrome – graphics up to 640x480 and text too. Interlace is required for some modes but a software flicker fixer is built in.

- Other video modes include MDA and CGA text and graphics. Also supports Tandy colour graphics adaptor and Hercules monochrome.

- EGA and VGA graphics can be displayed on a domestic TV or monitor. Unlike real PCs, no extra hardware is required.

Disk

- Up to four Amiga drives can be connected to your system and accessed in PC modes as 3.5" 720K or 5.25" 360K. Typical disk access is at least twice as fast as most real PC clones!

- DOS can be started from any mounted drive 5.25" or 3.5" and most Amiga hard drives.

- Supports most popular hard disks including GVP Impact, Supra and A590 (Omni and SCSI).

- A massive 200K ramdrive (up to 8Mb with expansion) is available in PC mode and it's PC-reset proof too.

Memory

- Even with a base Amiga 704K is free for DOS programs (640K in EGA and VGA modes).

- EMS (expanded memory) is supported allowing you to run Microsoft Windows without problems and store massive files in Lotus 1-2-3. So, if you

have 8Mb on board, the PC can use it.

- XMS (extended memory) is supported – even though this is not usually possible on NEC V30 machines.

Speed

Its Landmark speed puts it way ahead of many true PC systems – it even compares favourably with many AT clones.

However, the crux of the matter lies with the video speed; and this, as many critics have noted is where the KCS Power PC Board scores over all others. It's no use having a wizz-bang processor if the screen takes several seconds to redraw itself.

- Tests in text modes have shown it is several times faster than even AT clones with dedicated video hardware. Even in graphics modes, it's no slouch although the emulation is limited by Amiga hardware.

- Add a processor accelerator card, and the 32-bit clean KCS cache software will use it to its full advantage.

Mouse

- Automatic serial mouse emulation is supplied as standard – using your existing Amiga rodent.

- Mouse can be configured as COM1 or COM2.

Joystick

- Up to two sticks can be employed at any time. You decide how they are arranged.

Printer

- Your Amiga's parallel port is accessed as LPT1 in PC mode.

Serial

- DOS usually supports two serial ports, but one is taken by the Amiga mouse. The Amiga's serial can be set as COM1 or COM2 as desired, ie for MODEM etc. up to 19200 baud full-duplex.

Sound

- PC sound is supported, but there's an additional volume control available in software.

Works on...

- All Amigas (except the a1000) fitted with Kickstart 1.2 and Workbench 1.2 or higher.

- Extra memory is not required, but full use will be made of extra hardware, like accelerators, flicker fixers, modems etc.

Help!

- We want you to get the most out of your system so we offer a comprehensive, free telephone helpline service to all registered users.

Updates...

- Since the hardware is a complete PC in its own right, all updates are completely software driven. Registered users can update at any time for a nominal fee to cover media and shipping costs.

"PC emulation is a contentious issue – but the KCS Power PC board is the only one to carry my personal recommendation. It is an excellent product that does all it claims and does it well." – comments Mark Smiddy, co-author of Mastering AmigaDOS 2.

PRICE

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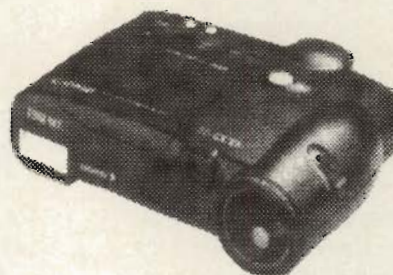
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One and counting...

CDTV is a year old. It was officially launched on April 30, 1991 at the British Academy of Film and Television Arts, better known to us all as Bafta – yes, the ones that give the British "Oscars" away each year.

A lot has happened in the twelve short months since then. Many critics of CDTV would have you believe that nothing has moved, but this is just not the case, so let's take a quick look, shall we?

Most important, in my view, was the price reduction that came a short while ago, reducing the cost of a CDTV from £599 to £499. This clever move by Commodore means that CDTV becomes a realistic purchase for many types of prospective customer.

Not only does it make the CDTV affordable as a standalone, multimedia entertainment system, it should also appeal to people purchasing an audio CD player, and those who are thinking of buying an Amiga and want that little bit extra.

Software

The other vital factor in the success of this product – especially in the long term – is the quality of the software available. I am glad to say that the available titles have started to improve beyond recognition compared to those which were initially released.

Titles such as Hutchinson Encyclopedia and Women in Motion were truly awful. I am sure that many people would have gained the same negative impression after sitting through Hutchinson as I did, not helped by the fact that it came bundled with the CDTV and so was endorsed by Commodore as far as Joe Public was

On CDTV's first anniversary, Dave Windera charts its history and looks to the future

concerned. Luckily, with the appearance of titles like Japan World, Learn French with Asterix, Town with No Name and of course Fractal Universe, it is apparent that developers are now really getting to grips with just what is possible on the CDTV.

With software of this standard appearing – and it can only continue to improve – the future of the system seems assured.

Also making an appearance during the last year have been a host of peripheral items. As well as a keyboard, remote control mouse and external floppy drive – which effectively turn your CDTV into a fully functional Amiga 500 – we have seen a remote control trackball (with ports for standard joysticks), an internal genlock and a redesigned remote control pad with the annoying mouse/joystick control replaced with a more robust and easier to use design.

Not yet available as I write is the Advanced Video Mode card – better known by its acronym of AVM – which should be at your dealer by the time you are read this page.

This is much awaited and will provide amazing graphics with a palette chosen from 16,000,000 colours. Best of all is that pricing should be around the £50 mark, so making it within the reach of

Fine tuning with CDTV

So what could be improved? Well, I would definitely replace the awful Welcome disk if I had the opportunity to do so. Although it fits nicely in with the ideal of CDTV, being a manual on CD-ROM, I think this is one area that needs a manual on paper!

After all, it isn't exactly easy to look things up in the disk manual when you are trying to figure out what to do within another program.

There is also the obvious disadvantage that you don't know what to do until you read the manual, but you don't know how to read the manual until you know what to do, if you see what I mean.

Apart from that, I would say that the SCSI card should be made available to one and all, and not just developers as at present, so opening the doors for the use of all sorts of extra devices, such as hard disks.

most CDTV owners. Third-party manufacturers have also started to produce CDTV peripherals now, with Roctec making a CDTV external floppy drive that sells for a lot less than the retail price of the official Commodore model.

It should be pointed out, of course, that any external floppy drive for the Amiga will work happily with the CDTV – it is just the colour that is different. The same is true of the keyboard, as it is quite possible to use a standard keyboard from an Amiga 1500/2000 – providing you can make up the appropriate connector adaptor to fit. Of course, it does look so much nicer if everything is colour coded in black!

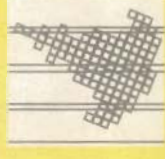
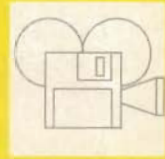
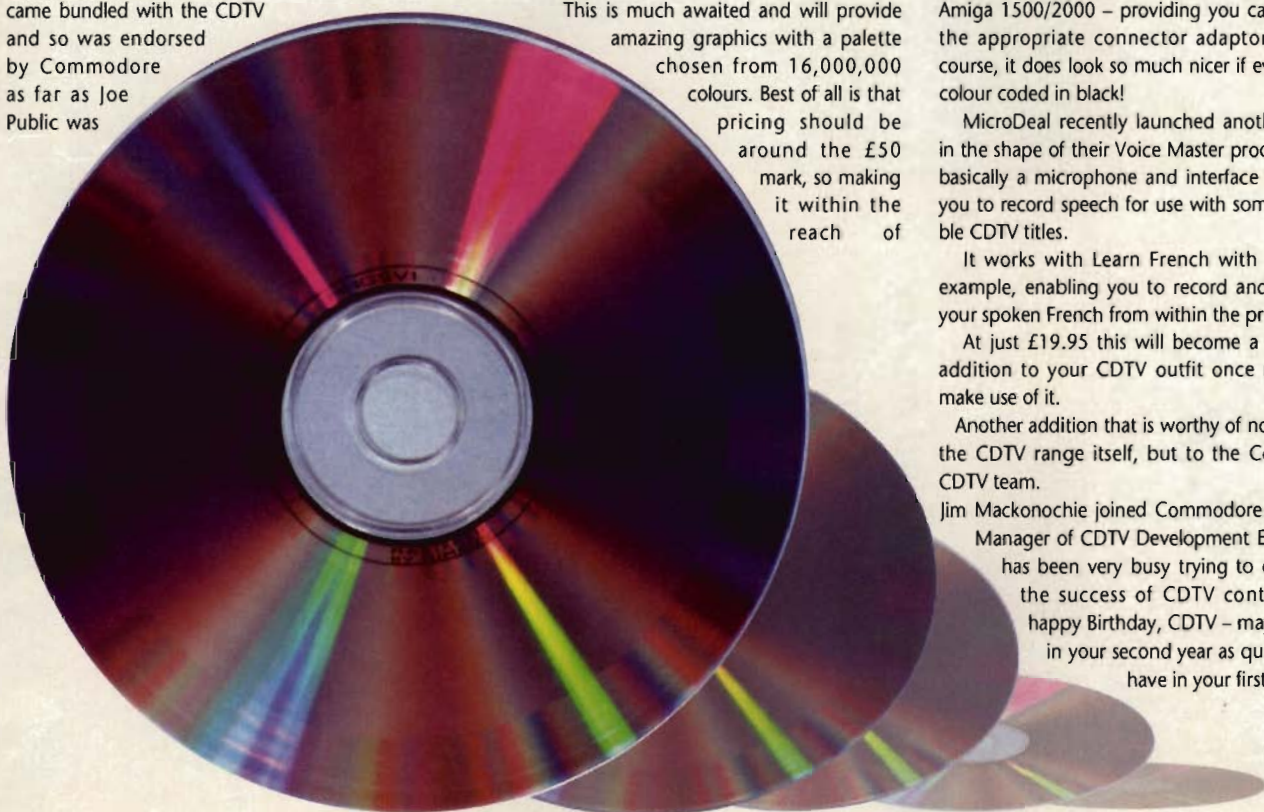
MicroDeal recently launched another add-on in the shape of their Voice Master product. This is basically a microphone and interface that allows you to record speech for use with some compatible CDTV titles.

It works with Learn French with Asterix for example, enabling you to record and play back your spoken French from within the program.

At just £19.95 this will become a very useful addition to your CDTV outfit once more titles make use of it.

Another addition that is worthy of note is not to the CDTV range itself, but to the Commodore CDTV team.

Jim Mackonochie joined Commodore as General Manager of CDTV Development Europe, and has been very busy trying to ensure that the success of CDTV continues. So happy Birthday, CDTV – may you grow in your second year as quickly as you have in your first.



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Putting print to paper? The WorkStation disk includes a superb text editor. This powerful package has an unashamedly no-frills approach to producing and formatting professional looking text that would be envied by many of the more expensive commercial products.

The WorkStation has a fully configured dynamic recoverable ram drive which acts like an extra invisible drive to your Amiga. It's a vast improvement on the standard Amiga drive because it is very flexible and goes easy on memory.

Heart of The WorkStation is a powerful shareware package called SID. When you use it you can say goodbye to faceted blank screens and complex commands. Instead your mouse takes full control. Fiddle with files, display text and graphics, sample sounds, uncrunch archives... all this and more with just a click of a mouse button.

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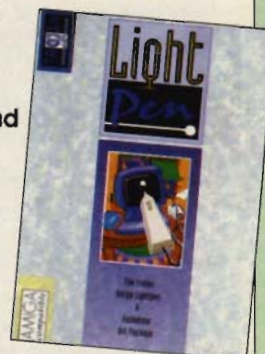
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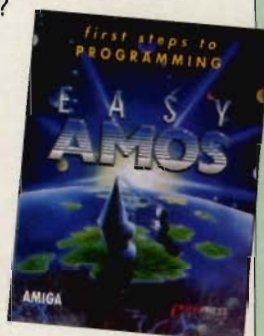
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Cracking disk?

Seventeen Bit software, well known for their predilection for demo disks and the crushing weight of their entire nigh-on 2,000 disk collection (last weighed in at 2.5 tons, give or take a scrolly demo), may soon be taking the revolutionary step of removing a disk from their collection.

The reason for this is that its inclusion in their library could result in a short stay at Her Majesty's convenience. LSD is an Amiga user group concentrating, among other things, on cracking, which is just another name for software theft. They circulate a disk-based magazine called *Grapevine*.

Issue 9, which was released as 17-Bit disk 1,800-odd, contained a complete set of instructions on how to crack the copy protection of a popular, if ageing, commercial game, by way of a general tutorial for novice crackers.

An LSD "editorial" made a lame and hypocritical attempt at warning potential pupils of the legal implications of cracking, but went ahead with the instructions anyway.

When asked if they were aware of this fact, 17-Bit, whose screening process – assuming that one exists – seems to be about as effective as an M16 security check, said they would "remove the text file in question" or, if this proved impossible, remove the disk from the collection.

Rest assured we'll be keeping tabs on them.

A300 goes underground

Pundits who read the *Amiga Computing* news pieces on the A300 a few months back and credited us with nothing more than sensationalism will be interested to find out that the machine has in fact been available here for over a month.

When we opened the casing on the A600 sent to us for review, the motherboard was stamped "A300 rev 1.1". Even the power supply casing bore the stamp of the A500's smaller brother, indicating that Commodore changed their minds very late on in the day.

Look out for the following new releases – the Amiga 2300, the CD-ROM A670, and the high end A3500.

ROCK lobster

Into the valley of death...

... rode the A600? Continuing industry head-scratching about Commodore's intentions for the A600, why they released it at the same price as the A500, why it hasn't got a numeric keypad, and just "why?" in general, recently had a first chance at some sort of clarification when the machine finally went on sale to the unwashed masses (you and me).

The Amiga show held at Wembley was the machine's unofficial UK debut, though it had been selling mail order for about a month previously, and many a Commodore rep was to be seen hovering anxiously around the stand on which the A600 was being prominently displayed.

Sweaty armpits and ravaged fingernails were much in evidence as the suits awaited punters' verdicts.

Here is a selection of the comments we overheard:

- "What is it?"
- "Where's the hard drive, then?"
- (Upon being asked why he'd just bought an A600) "Stands to reason. 600's a hundred more than 500, but it costs the same."

We understand manicurists and chemists based in the area of Commodore's Maidenhead HQ are expecting a busy time.

Sacred cows

No 2

JARGON

Let's face it, there's useful jargon (more usually acronyms for clumsy phrases such as Random Access Memory - RAM), but there's also a lot of totally meaningless tripe, such as CDTV (Commodore Dynamic Total Vision, whatever that's supposed to actually mean), DTMS (Desktop Music System), and the hilarious ZIP (Zig-Zag Inline Packet, a type of RAM chip).

Much of the latest jargon has been dreamt up by marketing suit-fillers and the rest seems to be applied by elitists who're scared that Joe Public will begin to understand what they're talking about and realise it's just a load of old cobblers.

Competition results

The answers to the March Multimedia competition questions are, of course, B-B-C. The winner, who picks up a copy of the excellent Scala presentation package is Howard Maryon-Davis of Fulham.

Runners up were M J Skelton of St Leonard's on Sea and John R Kitcher of North Tawton, both of whom will receive a copy of Scala 500. Well done to all three lucky winners.

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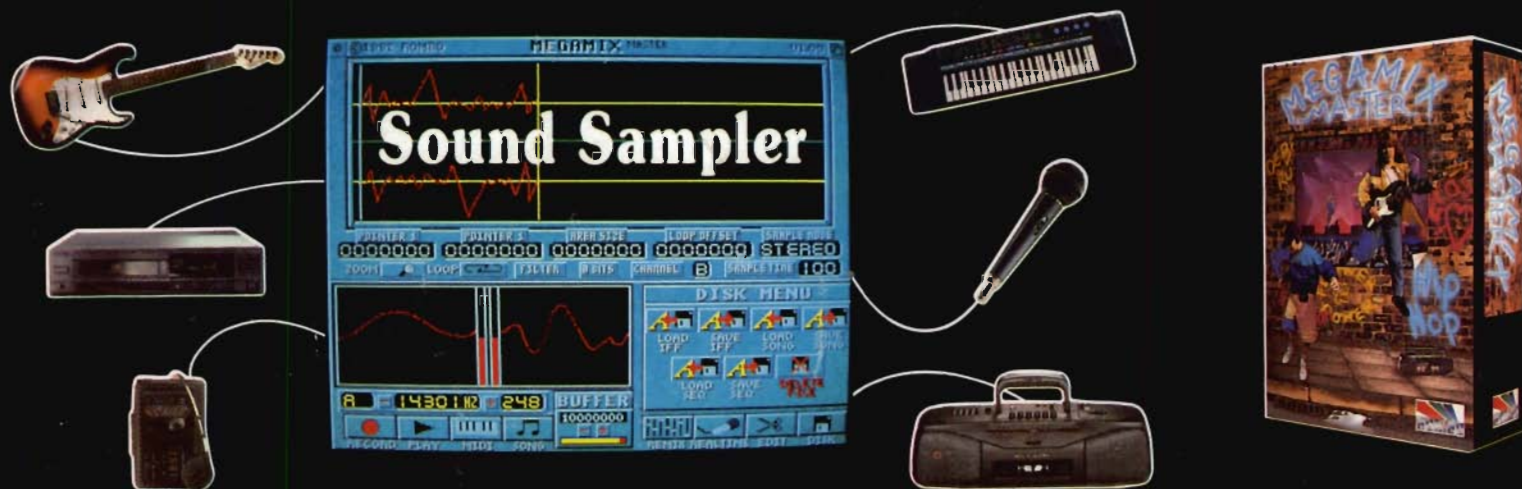
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CUT—Remove samples between pointers and stores it in the cut buffer.

COPY—Copies sample between pointers into the cut buffer.

INSERT—Inserts the contents of the cut buffer into the soundwave.

SPLICE—Removes the sample between pointers, stores it in the cut buffer then slides the rest of the soundwave together.

CHOP—Removes all of the soundwave except for the sample between pointers.

DELETE—Erases the sample between pointers.

MIX—Mixes the contents of the cut buffer with the soundwave.

FLIP—Reverses the sample between pointers.

PLAY CUT—Replays the contents of the cut buffer.

ECHO—Adds user definable echo between pointers.

IN—Makes Sample between pointers start quietly and build up to full volume.

OUT—Offers the opposite effect to IN.

PHASER—Adds phase shift to your sample.

LOUDER—Adds volume.

QUIETER—Decreases volume.

SEEK 0—Finds zero points nearest pointers, used in looping.

FILTER—Removes hiss or high frequency noise from your sample.

PACK—Removes every 2nd sample between pointers.

ECHO—Adds echo to and incoming sound in Real Time.

DIRECT—Plays incoming sound direct through Amiga.

SYNTH—Adds user definable distortion to sound in Real Time.

PHASER—Applies variable phase shift again in Real Time.

STEREO ECHO—Adds digital delay between L & R speakers.

VIBRATO—Rapidly varies frequency of sound.

LOAD IFF—Load a single IFF sound sample

SAVE IFF—Saves your sample between pointers as an IFF file.

LOAD SONG—Load a song sequence

SAVE SONG—Save a song sequence.

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