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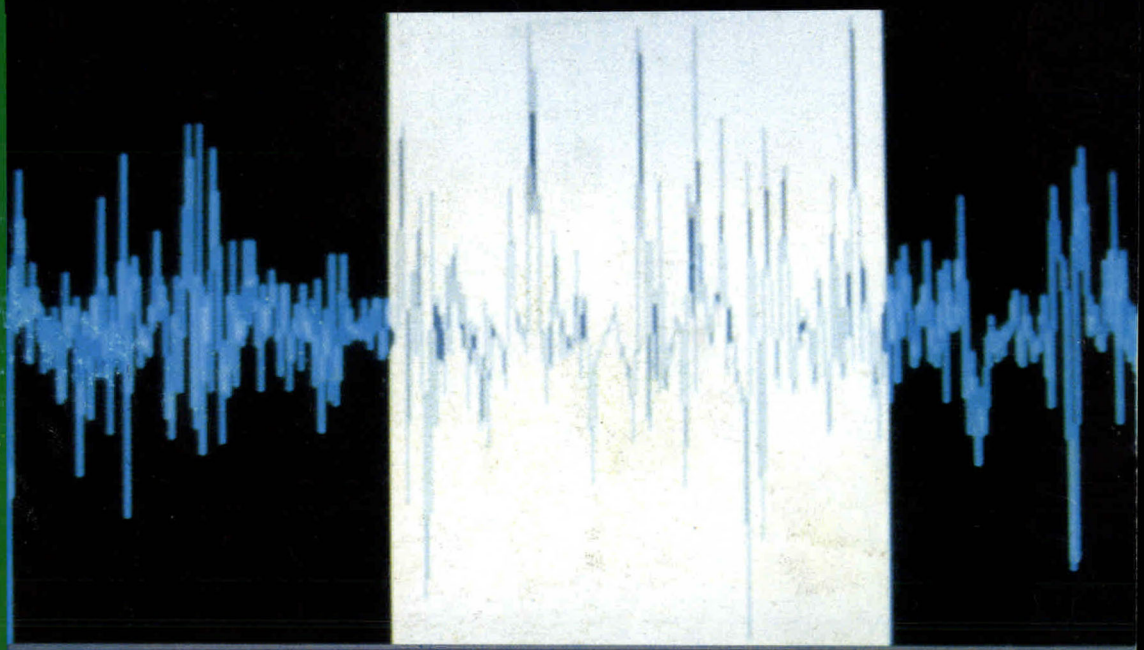

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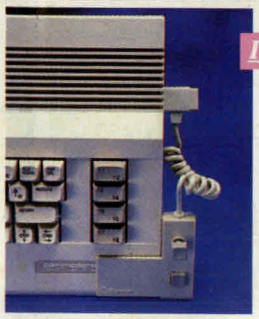

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JUNE 1989 Volume 3 Number 6

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THE AMIGA DIMENSION

"The Amiga 2500 is shipping!" they said to me at the Toronto PC show. Why do they still use "shipping" when practically everything in North America goes by road or rail? Since ***AUI*** reported its launch only (?) 15 months ago, the 2 Meg Amiga with a 20 Meg internal hard drive and a 68020 chip has been eagerly awaited – at least by those power users who have about $5000 (£3000) to spend. Though we heard that some North American dealers are already discounting it by around 10%.

In Europe the 2500 has not yet "shipped" although we have been told that some enterprising people on both sides of the Atlantic are taking conventional A2000's and upgrading them to 2500 specifications – even to the label!

Faster speeds and heavier memory are the shape of Amigas – indeed all computers to come. 25 to 33 Mghz (more than three times the present day Amiga) looks to be the normal standard shortly. These high speeds will unquestionably enhance the Amiga's ability to deal successfully with the growing demands of the graphic and animation packages of the kind we covered in our special section in May ***AUI***. We are continuing in this issue to review a number for which space could not be found then.

The response to that Special Section has prompted us to put an extra emphasis in this ***AUI*** on another important area of Amiga activity – sound, where we are beginning to see more complex and extensive development particularly in Music. With excellent, professional level packages like Dr T's Copyist emerging, the Amiga is at last starting to be taken seriously as a high level "aural aid". Philip Taysom's interesting article points the way that the Amiga can go.

The music field is one of the few where, until now, the Amiga has not been as sucessful as the Atari ST. As in previously ST dominated areas such as games, the Amiga is now taking the lead, not just technically but in volume of sales. To some people that may not seem to matter much but software and peripheral developers will rarely venture into a project unless they can see a reasonable or even substantial profit. The Amiga is now becoming a credible field for all developments.

Perhaps one of the difficulties under which the Amiga has laboured is that it appeals, or Commodore has attempted to make it appealing, in so many different ways: business, graphics, education, entertainment etc. This has meant that the public perception of it is confused and too wide to be sharply identifiable. It is easier if, like Apple with its Macintosh and DTP, you stick to one area alone to major on. For the North American countries, the A2500 confirms CBM's high level, cost effective business and professional stance with achievements like creating the graphics 40 feet wide for the recent Football Super Bowl to its credit. However the A500 continues to outsell its bigger brother by three to one anyway.

In Europe and Australia, it must be at least ten to one in the A500's favour, with the majority going into private homes. Even with the growig number of Amiga 500 users upgrading to 1 Meg of memory, many of the "professional" packages will prove too demanding or expensive. And, in any case, a lot of those A500s are bought to be used almost entirely as superb games machines.

In spite of the progress since the bad years of 1985 and 1986, Commodore worldwide still presents a picture as confused as ever about the way it wants the Amiga to finally go. Each country or continent appears to choose its own different direction. But it is unusual for a public perception that is unfocussed and diffused to enable a product to be sucessful in the long term. So CBM may have to make some decisions, even if they are not easy ones.

Perhaps we might look back this time next year (with another, 1 Meg 500 having just shipped?) and see the Amiga dimension is at last clearly defined and the confusion evaporated. Perhaps the business/professional and entertainment divide will have been bridged. But perhaps not...

Antony Jacobson
Managing Editor and Publisher

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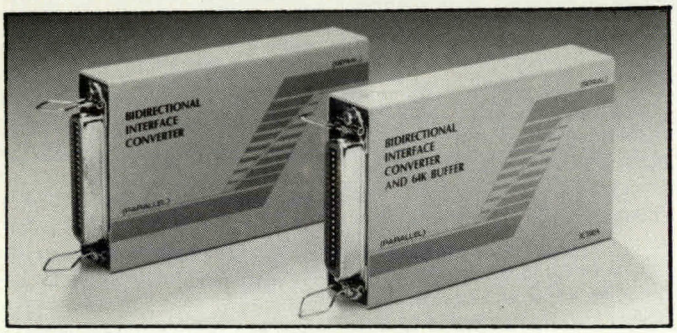
NEWSFILE

ACD Serial Interface Board 2 & 4

Advanced Computer Design has announced the release of the Serial Interface Board 2, designed for the Amiga 2000, it fits into one of the 100 pin expansion slots, and gives you two additional serial ports (expandable to four) for a large variety of applications. You can have a multi-user BBS system based on your Amiga 2000 or you can connect several printers, plotters and scanners to your Amiga simultaneously. The board is Auto-Config and takes only a 64k address range (smallest possible). Driver software and terminal program are shipped with the Serial Interface Board 2. Price: 299DM, ACD SIB4 with four ports is 349DM.

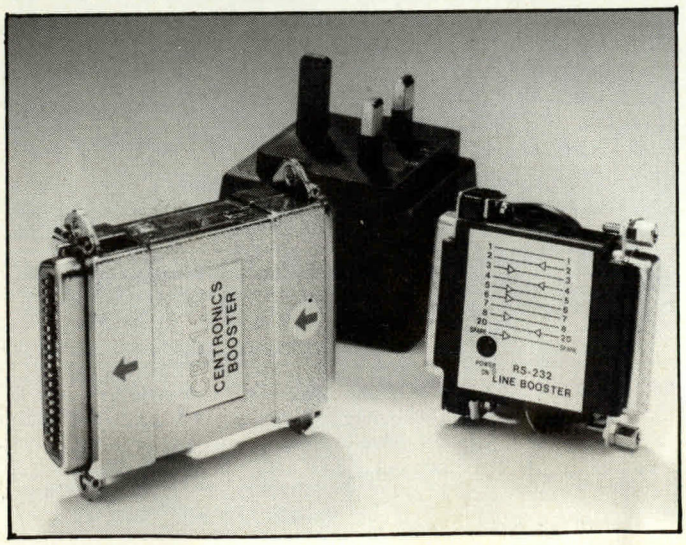
Contact: Advanced Computer Design, Carl-Schurz-Str.11, D-2800 Brmmen 1, West Germany. Tel:01049 421 3499517



CENTRONICS PARALLEL AND RS232 LINE BOOSTERS

Miniature line boosters from Action Computer Supplies, available in both Centronics parallel and RS232 versions, allow signal cables in PC systems to be extended without problem, and can enhance signal-to-noise ratio by as much as 50 per cent. Neither type requires special cables or other additional support.

Price: (either version) £56.25, reduced to £54.00 for orders over £100. Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel 0800 333 333.



ESPA

A new body representing the entertainment software market has been officially launched at the European Computer Trade Show '89.

The new association, the Entertainment Software Publishers Association (ESPA) is set to significantly improve the environment for the games software industry by developing and enhancing co-operation amongst otherwise fierce competitors. Not only will these changes be aimed at the industry but will have an impact on the game playing public as well, ESPA tell us.

Conceived by Simon Treasure and currently chaired by Andrew Hewson, the association aims to promote the industry as a whole by increasing the popularity of computer games. In doing so, it aims to take advantage of, and expand, market opportunities in the industry, thus offering an expansion of the market leading to a greater choice and better products available for purchase.

ESPA aims to promote and stimulate the market for the three main tiers of games software production – 8-bit budget, 8-bit full price and 16-bit (and MSDOS) – by an active programme of research and promotion. Promotional activity will target television and consumer media for extensive editorial coverage to persuade the public of the benefits and fun offered by computer games. (As long as you remember to get some fresh air and extensive exercise after a 12-hour stint, why not???)

Not only will ESPA be a central authority on the market and privide this information to its members, but by working with such bodies as the Federation Against Software Theft (FAST) and the British Micro Federation (BMF) it will help address problems such as piracy. This costs the industry millions of pounds each year, which would otherwise be spent on new product development.

Navy Moves

Dinamic has announced the release of Navy Moves, the sequel to the successful 1987 title Army Moves. Navy Moves is an action-packed arcade game considting of two separate parts and four different combat areas. The object of the game is to destroy the enemy's - U 5544 nuclear submarine, which poses a severe threat to the current balance of power between the two superpowers.

The player's mission commences at dawn on the surface of the ocean as he approaches the enemy base by power boat. The bay contains explosive mines and to advance further the player must "jump" over them. Enemy comandos on jet skis will try to prevent the player from completing his mission.

At a convened point the player jumps overboard and continues his approach beneath the waves. He is armed with an effective harpoon which will help him make his way through the shark-infested waters until he reaches the entrance to the enemy base.

The next step is to take command of a small submarine in order to reach the enemy submarine. Great octopi are lurking in nearby caves and an enormous moray eel will make life difficult for the player. At the end of Part 1 the player is given the access code for Part 2.

The second part of Navy Moves takes place inside the nuclear submarine itself. The player's objective here is to place a bomb at the base of the reactor and get away before it explodes. This means obtaining different codes from the members of the crew who will try to prevent this. These codes enable him to manipulate the submarine's computer system in order to reach the reactor, stop the motors, make the submarine emerge and finally send a message so that the player will be picked up before the final explosion.

Navy Moves is distributed in the United Kingdom and Ireland by Electronic Arts Limited. Price: £24.95 (Amiga and IBM); £9.95 (Commodore cassette); £14.95 (Commodore disk).

POWERDROME

Electronic Arts has just announced the Amiga release of Powerdrome, the futuristic racing simulation by Michael Powell. In the game the player gets the chance to become a jet racer pilot competing in the Powerdrome XXIV against four pilots from other galaxies. At stake is the coveted Cyberneufe Trophy. The Amiga version has been completely rewritten taking full advantage of the machine and features enhanced graphics and sound effects – with additional effects for 1 megabyte machines. New features in this version include a special beginner's mode which allows the player to learn to fly his jet racer in seconds, improved playability and an extra intermediate track to master.

Powerdrome features fast moving solid 3D graphics which create an amazing effect of speed and realistic sound effects of engines roaring, competitors screeching past and crashes and bangs as the five jet racers gly around the course. A special feature of Powerdrome is a two player option via a dual data link between two machines – either ST ot Amiga – which allows the player to race against a friend.

The player can practice or race on any of the seven available Powerdrome circuits or attempt the full Powerdrome season of seven races. The tracks are situated on five different planets, each with its own atmospheric conditions requiring careful adjustment of the player's craft to achieve peak performance. Each track has a unique feature and different weather conditions, including electrical storms with spectacular digitised lightning.

A season's races commence with a practice session where the player can adjust his jet racer in an attempt to find the optimum balance. Tuning the jet racer is the key to winning races. The tune-up screen allows the player to adjust the air-brakes, aerofoil sensitivity, fuel selection and engine filter selection. A qualifying session against the four other racer pilots will determine the best suspensor position for the start of the race.

Whilst racing the player will view the control panel and the course ahead. A rear-view display indicated how close the competitors are. A data terminal provides constant information about the race and the performance of the other racers as the player negotiates tracks consisting of poorly lit tunnels, humps, sharp bends and crusher and sliding gates. Points are awarded after each race for the finish position which are accumulated towards the championship Cyberneufe Trophy.

During the race the player will need to enter the Robopits to refuel or repair damaged parts. The Robopits are a fully automatic repair, modification and refuelling station. When the player enters his pit a refuelling pod will extend and attach itself to the racer. To replace the damaged parts of the racer the player must select the appropriate command and sit back and watch the pits carry out the repairs. If the damage is serious the player may need to call up the rescue craft for a tow. Price: £24.99.

The AMIGA 2000 to the rescue...

Dumfries and Galloway Police have just installed a major Amiga 2000 computer system as a direct result of the Locherbie air disaster, Commodore tell us.

The system is helping to process the many hundreds of hours of videotape taken during the aftermath of the tragedy. The Amiga 2000 is being used to reconstruct the site of the crash so that the police can work out what happened immediately prior to the incident.

Commodore Business Machines' Amiga 2000 system, which was installed by Glasgow-based Video One Professional Video, will allow police experts to produce stills from video material via a digital framestore.

The advanced computer graphic capabilities of the Amiga 2000 are then used to enhance the finished pictures prior to printing out to a Polaroid freeze-frame film recorder.

Sergeant Bob Ovens, of the Dumfries and Galloway police force, speaking from the scene of the Locherbie disaster, said of the new system: "The Amiga 2000 system obviously gives us the potential for crime detection by using its excellent graphics and ability to grab video images – so we can output them as photographs and slides. We are currently looking at the lessons to be learned from Locherbie".

To help with the solving of other disasters the Amiga 2000 system is also being used to produce overhead transparencies, for demonstration purposes, as a video titler and for computer animation of incidents. Other police forces using Amiga 2000 systems include Lancashire and Preston.

Bring in The New ... A1000?

Panther Peripherals have announced a super trade in offer. Amiga 1000 owners can now move up to the A2000 models by trading in their old computers. The new for old offer comes from Panther Peripherals, a London based Amiga Specialist house. Panther has announced that it will accept the original A1000 Amiga machines – now obsolete – in part exchange for the latest models from anywhere in the UK or Overseas.

The deal involves users sending their Amiga 1000s along with a payment of £699 including VAT to Panther Peripherals, In return they will receive a brand new A2000 bundled with Kickstart and Workbench 1.3. The company is also offering a collection and delivery service anywhere in the Greater London area.

"We feel there are a lot of people out there who bought the original Amiga who are eager to get their hands on the latest machine with all its internal expansion potential – but haven't been able to afford to do so", says Jonathan Richards, Panther's Sales Manager.

"In particular, the old 1000 was snapped up by a lot of programmers who now need the 2000 as a development tool – or risk losing their livelihoods. This is why, together with Commodore U.K. we have put this offer together", he said.

Contact: Panther Peripherals, Rowlandson House, 289-293 Ballards Lane, Finchley, London N12 8NP. Tel. (01) 446 8431.

Cumana Disk Drive Returns

Phil Graffy, General Office Manager at ZCL Holdings Limited, recently sent us this letter:

"It has been brought to my attantion by Cumana that a number of the disk drives that are being returned to us are having the serial numbers changed for more recently purchased drives.

This action has been picked up by Cumana's internal checks on both serial and interior numbers.

It has also been noted that a number of the drives are being returned with scratched lids which in the main are caused by unqualified staff attempting their own repairs.

We have now carried out our own checks on returned items and have identified the customers concerned and therefore if the above practices do not cease we shall be forced to pass on the repair-/refurbishment charges."

If you are experiencing problems, contact ZCI at: Unit 1, Ringway Industrial Estate, Lichfield, Staffordshire WS13 7SF. Tel (0543) 414817 or (0543) 257050.

NEWSFILE

3 NEW MEDIA LINE PRODUCTS

Free Spirit Software Inc., has released three new products in its series of Media Line art disks for desktop publishing and video presentation for the Amiga. Media Line Font Disk 1, a disk of nine different bit-mapped fonts retailing for $34.95, was the first in the Media Line series.

Media Line Font Disk 2 is a collection of structured fonts for use with 3D programs. Aegis Draw, Sculpt 3D, Videoscape 3D, Draw 2000, Forms in Flight, Turbo Silver and Professional Draw are among the software packages supported. Font Disk 2 was designed by Tore Bahnsen, the award winning Danish Designer, who also designed Font Disk 1. The suggested retail price is $34.95.

Media Line Clip Art Collection is a selection of over 200 clip art pictures for use in desktop publishing. Holiday, party, sports, computer and scenery are among the various themes included. They are compatible with all publishing programs which support IFF graphic files. A show utility is also included. Media Line Clip Art Collection was designed by Loren Lovhaug, noted author of books and magazine articles on Commodore computing. The suggested retail price is $34.95.

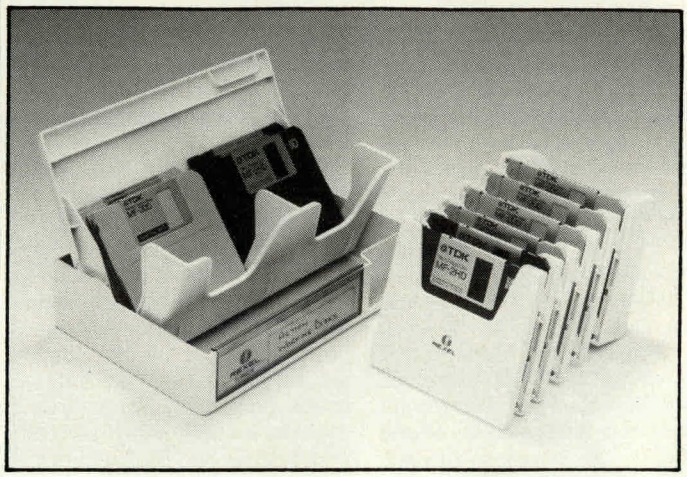
Media Line Animation Backgrounds is selection of animated backgrounds for use with popular animation programs. The Animator, Animate 3D, MovieSetter, Videoscape 3D and Deluxe Video are among the animation packages which can utilize these backgrounds. This two disk set contains thirty different, colourful background scenes. It is available in either NTSC or PAL versions. Media Line Animation Backgrounds was created by Tore Bahnson. The suggested retail price is $39.95.

Diskette Storage Boxes

Rexel's Flipbox (left) is available from Action in a 3.5in version holding up to 20 diskettes, and a 5.25 in version for up to 15 diskettes. Features include snap action closing and a transparent front panel. The Rexel Concertina (right) holds up to ten 3.5in diskettes: when opened, it expands lengthways, allowing extremely easy identification and access.

The Flipbox costs £4.45 from Action, and the Concertina £9.85: special discount prices for £100+ orders are £4.05 and £8.95 respectively.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel 0800 333 333.



THE DUEL TEST DRIVE II

Accolade has announced the multiple system release of The Duel: Test Drive II in Europe and North America. Available for IBM/PC, Amiga and Commodore 64/128 computers, The Duel is the next step to the most lauded driving simulation in the entertainment software industry. The Duel pits two of the fastest production cars ever built in head-to-head road racing – The Ferrari F40 against the Porsche 959. A race that until now has only been run in the minds of engineers and fast car fanatics.

In a simultaneous release, The Duel: Test Drive II is being accompanied by two separately sold accessory disks that will provide The Duel drivers with additional cars to race and more scenery to experience. THE SUPERCARS will provide Test Drive II owners with the newest models of production cars including: the '88 Lotus Turbo Esprit; The Ferrari Testarossa; The Porsche 911 RUF; the '88 Lamgorghini Countach 5000S; and finally, Chevrolet's newest production, the '89 Corvette ZRI. CALIFORNIA CHALLENGE will enter drivers in an adventurous seven leg road race down the scenic coast of California where they will witness such sights as the California/Oregon border; The Trees of Mystery; Eureka; Rockport; San Francisco; Carmel; Santa Barbara and finally, the Mexico border.

As in Test Drive, The Duel: Test Drive II can be a race against the clock, but more significantly, it can be a head-to-head road race in which the Ferrari and Porsche compete, or each car races against a replica of itself. Competing with a computer controlled car, drivers will blast down roads filled with bone-dry deserts, majestic mountains and lush forests. General hazards of the road will also need to be avoided such as on-coming traffic, rocks, loose gravel, potholes and oil slicks which can hinder steering ability.

With a cockpit perspective, drivers can feel the performance of these powerful machines by exceeding speeds of 190MPH on the open road. Ability to shift and steer at these speeds is essential for success, for if you crash, get a ticket from the dreaded police, run out of gas or blow an engine, you are penalized 20 seconds and risk getting passed by your opponent.

Prices: The Duel, £24.95 (IBM and Amiga), £16.95 (Commodore 64/128 disk), £9.95 (Commodore cassette); Test Drive II, £11.95 (IBM and Amiga), £8.95 (Commodore 64/128).

THE POWERFUL PRESENTER

A most powerful presentation system is now available to all who convey information to others. Teachers, Management and Marketing presenters.

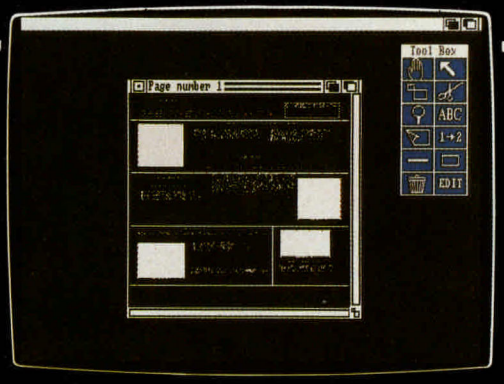
Computerised Training Systems Ltd., a new company, has developed a totally integrated system which uses presentational and training software combined with recorded and live video. Software produced by CTS called courseware is based upon the customers requirements from lists to simulation.

As an authorised Commodore Training Organisation we, CTS, use the Presentation System to provide training for the Authoring System Audio/Video. Commodore dealer and Amiga user training courses.

CTS Ltd. provide a comprehensive service all based upon the Commodore Amiga, Sony and other video systems. The Company's aim is to help users accelerate their presentation needs into the 21st Century?

For further information contact: Computerised Training Systems Ltd., Queensway Business Centre, Brigg Road, Scunthorpe, South Humberside. Tel: 0724 281037.

Their idea of DTP



DTP that starts with layout

OURS

When most DTP packages start and finish with page layout, Publisher's Choice comes as a refreshingly bright idea.

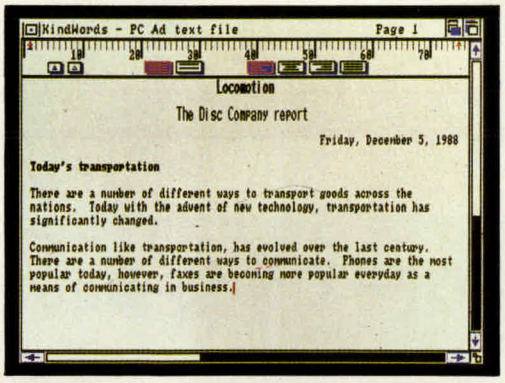
Publisher's Choice is a truly complete DTP system. In one package you get a word processor, a spell checker, a thesaurus, a page-layout program, a complete font directory and a clip-art library.

Every aspect of the DTP process is covered, there's nothing more to buy!

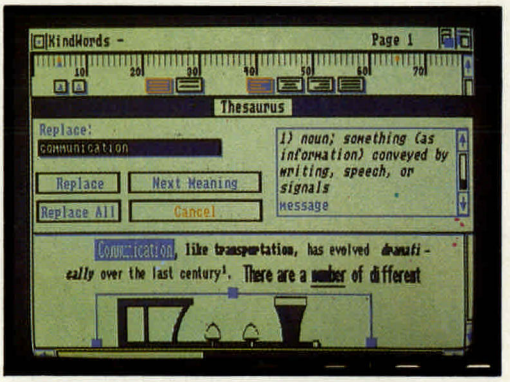
Publisher's Choice includes:

- Kindwords 2.0 – The leading word processors available for the Amiga.
- A 100,000 UK English dictionary spell checker
- A 470,000 word Thesaurus
- PageSetter 1.2 – A new version of this superb page layout program which takes text from Kindwords and produces spectacular documents incorporating text and graphics. It is compatible with any Amiga printer and offers Postscript output for professional quality text.
- Headlines – A stunning collection of over 35 hi-resolution fonts for text or headlines.
- Artist's Choice – why create your own image, it's probably already in amongst the 200 already stored on disc.

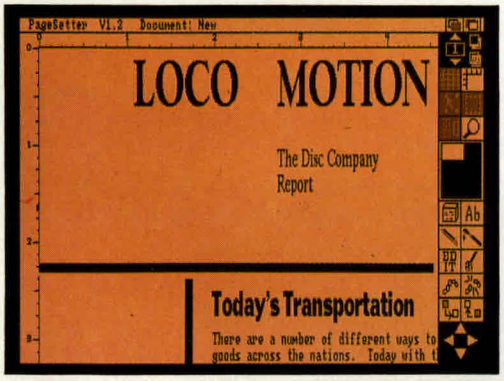
Individually these packages would cost hundreds of pounds – Publisher's Choice comes to you for £95.00 inc. VAT.



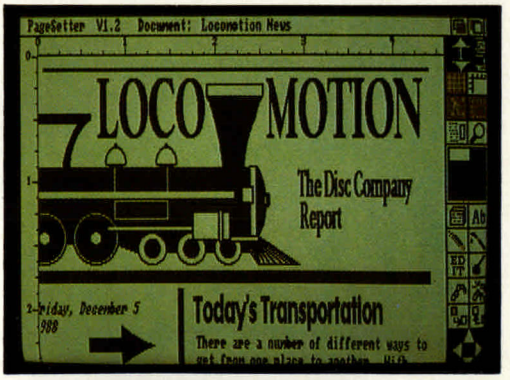
Enter your text in Kindwords



Analyse text with spell checker and thesaurus



Lay out your page



Create a polished, professional document

Publisher's Choice is available from The Disc Company: Paris 010 331 455 310 53; SDL: London 01–300 3300; GEM: Harlow on 0279–412441; HB-Marketing: West Drayton 0895–444433; Amiga Centre: Edinburgh 031–557 4242; or Microdealer: Milton Keynes 0908–74000.

The DISC COMPANY

EA SOFTWARE CLASSICS

Electronic Arts has announced the release of The Software Classics, a new range featuring established, award winning titles like The Bard's Tale, Marble Madness and Chessmaster 2000 at a new price. The Software Classics will be launched in early May with 10 quality titles retailing for £9.99 on Amiga and IBM PC and compatibles, £6.99 for 8 bit diska and £2.99 for 8 bit cassettes.

The launch titles in The Software Classics range are: The Bard's Tale – Amiga/ St/ IBM/ C64/ Amstrad/ Spectrum. Chessmaster 2000 – Amiga/ ST/ IBM/ C64. Marble Madness – Amiga/ ST/ IBM/ C64 disk. Skyfox II – Amiga/ ST/ IBM/ C64 disk. World Tour Golf – Amiga/ IBM/ C64. Earth Orbit Stations – C64 disk. Articfox – Amiga/ ST/ IBM/ C64/ Amstrad/ Spectrum. Legacy of the Ancients – IBM/ C64 disk. Music Construction Set – ST. The Archon Collection – Amiga/ Amstrad/ C64 disk/ Spectrum cassette.

SHINOBI – Master Ninja

Shinobi means stealth, Mastertronic tell us, and this is one of the many qualities that any trainee in the ancient art of Ninjutsu must learn in a lifetime dedicated to the discipline which is passed down from father to son, and one of the qualities you need to play this game.

As a Master Ninja your hands and feet are lethal but with the martial arts weapons – shuriken, sword and nunchaku – you are virtually unstoppable, and this is one of the reasons that your government has employed you as an undercover agent. Will you be able to prove that you really are The Master Ninja?

Shinobi will be available soon on the Melbourne House label for all major 8 and 16-bit computers.

45 Megabyte drive

Panther Peripherals, a London based Amiga specialist house, have announced the introduction of a new 45 MK Removable Hard Drive system for the Amiga. Faster than many fixed hard disk drives, the average time being 35ms, the Micronet offers offers the flexibility to transfer up to 45 MB with easy duplication and fast data back-up. It is more than a match for the biggest DTP or CAD/CAM operation, the company claims.

The unit comes complete, with the price including one pre-formatted cartridge, one SCSI cable, software, full documentation and one year's factory warranty.

The Micronet comes in a grey case with an autoselect power supply that allows the unit to be used in any country in the world. A powerful and quiet fan is mounted in the case which also has two 50 way Apple Mac compatible SCSI connectors and an external SCSI ID select switch. This allows daisy chaining of further SCSI devices, up to a total of 7 SCSI devices to be connected at once. When used with the Amiga 2000 the Micronet can be mounted internally as it is the same size as a standard 5.25" drive.

The unit currently operates with the Commodore A2090 and A2090A controlers as well as the majority of 3rd party SCSI controllers for the Amiga 500, 1000 and 2000. When using the Micronet as an external unit with the A2090A the user can autoboot directly from the drive.

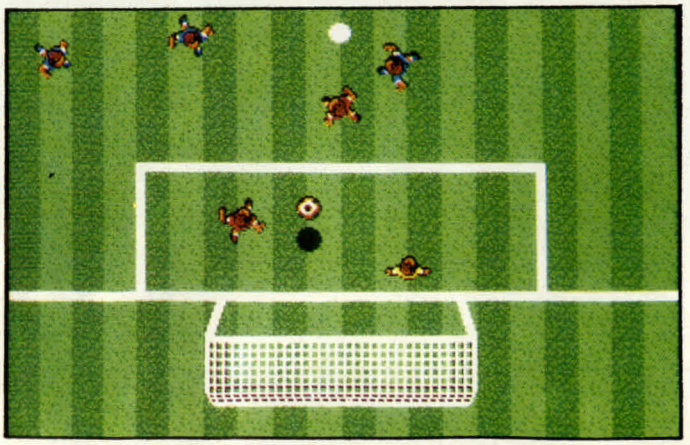
Price: £1195 plus VAT and each 45 MB cartridge costs £119 plus VAT. Contact: Panther Peripherals, Rowlandson House, 289-293 Ballards Lane, Finchley, London N12 8NP. Tel 01-446 8431.

Microprose Soccer KICKS–OFF On 16-bits

Microprose have taken their classic 8-bit soccer game and brought it bang up to date with the Amiga version. Programmed by the Electronic Pencil Company, the game has full 8-way scrolling screen which shows any number of players on screen at a time.

Featuring all the attention to detail that made C64 Soccer such a success, such as overhead kicks, banana shots, weather, sliding tackles, etc., and much more besides, the 68000 versions will undoubtedly prove to be an instant hit with 16-bit soccer fans, Microprose tells us.

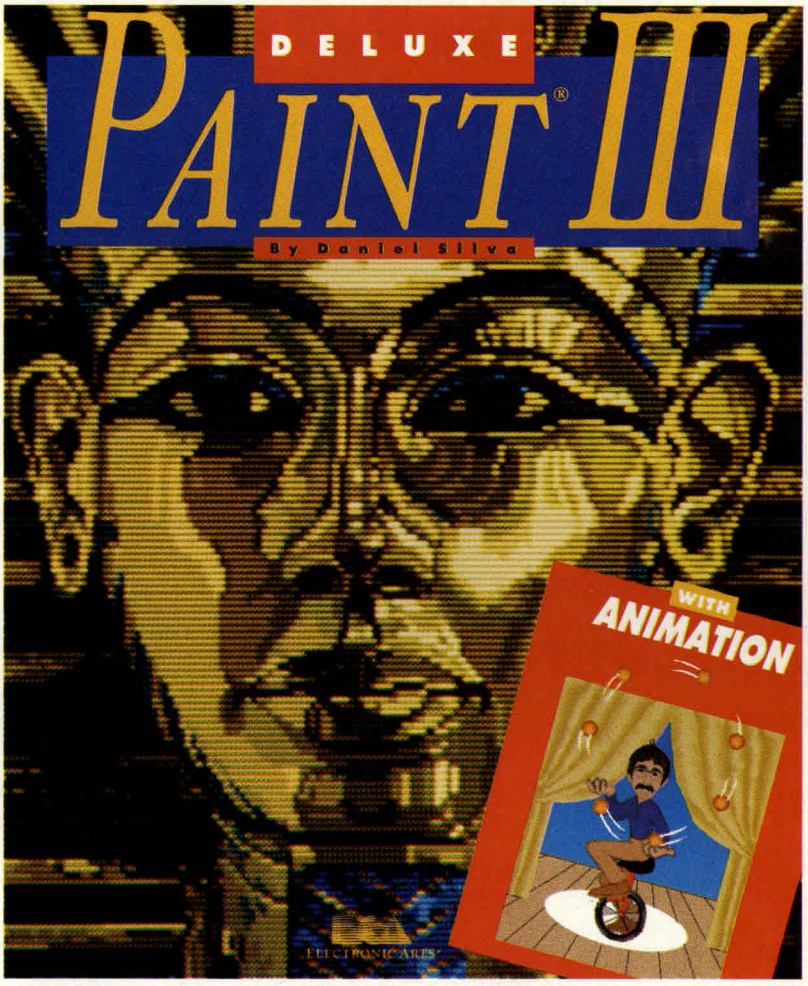
Price: £24.95



NOW DELUXEPAINT® HAS ANIMATION

Presenting AnimPaint™

DeluxePaint III makes animation easy. With the AnimPaint feature, you can create animation just by pressing one key to record your paint strokes, and another key to play them back. You can also use any multi-cel animation as a brush and paint with it, even in full 3-D.



8 New Paint Features

DeluxePaint III also adds sophisticated features to the number one Amiga paint software: Extra-halfbrite support for 64 colours; direct overscan painting for desktop video; wrap and tint brush modes for special effects; better font support; improved compression; and many performance enhancements, including faster perspective. Product requires 1MB of RAM.

SPECIAL UPGRADE OFFER:

Upgrade now and save £50. (Recommended Retail Price £79.99 inc. VAT)
Send DeluxePaint II manual cover and £35 (£30 upgrade + £5 carriage) to
Electronic Arts Ltd., 11/49 Station Road, Langley SL3 8YN, England.
Allow 2-4 weeks delivery. DPaint I owners can upgrade for £55.

ELECTRONIC ARTS®

AWARD MAKER PLUS

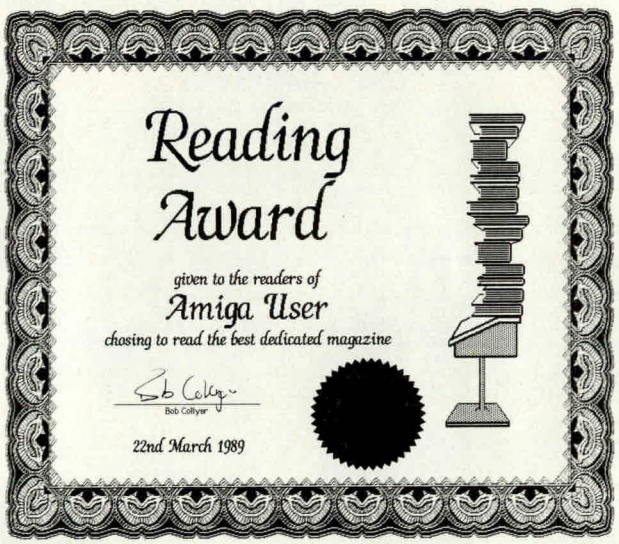
Bob Collyer gives the gift recognition using a very 'praiseworthy' program...

Baudville, the American based software company, has now made available the Amiga version of their successful Award Maker Plus. The most important feature of any product which produces a printed end result must be just that... the end result. After seeing the results, there is no doubt that Baudville have made your printer work hard to produce the very best possible printed result that your printer can produce.

"It is as true today as it has ever been that a little praise goes a long way, so giving as award that the recipient can keep will make their efforts more worth while."

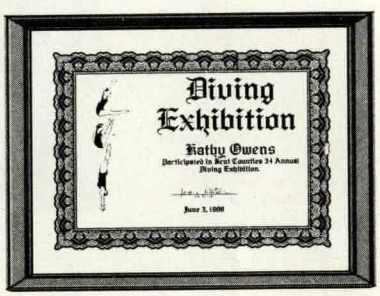
As its name implies Award Maker Plus is designed to enable the user to make good looking products you can give to anyone deserving a bit of praise. You can make Certificates, Diplomas, Honours etc. that can be presented to a person, club or team to give a long lasting keepsake to be displayed commemorating an honour in a particular event or activity. For business use your company can produce an award to show a thankyou for the hard work, thje extra effort, or that special accomplishment. It is as true today as it has ever been that a little praise goes a long way, so giving an award that the recipient can keep will make their efforts more worth while.

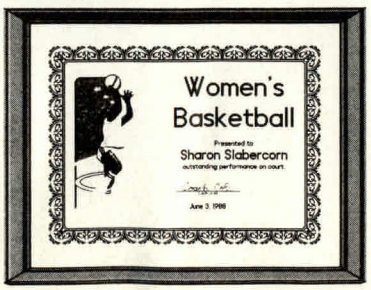
The simple to follow program instructions will enable you to produce your very first award in just a couple of minutes. Your productivity need not be limited to just making awards and certificates, with a little imagination you can easily produce adverts, promotional literature or birthday cards. If you can get your hands on a photocopy machine then why not make dance tickets or leaflets? There are more things you can do with Award Maker than at first seem possible.



For the sporting achievements there are some 150 varied styles. Most of these styles have some kind of illustration depicting the particular event, these are all good quality drawings and help make a professional looking finished article.

The package includes some peel off sticky gold seals. Add these to the award and it really looks good. The best results are obtained if you print your awards onto French Parchment paper. This paper does not come in the package but is easily ordered through an address in the literature, or from your local artist shop.





There is a good range of typefaces to vary the look of your masterpieces, such as Old English, Script Italic, Book Serif and Modern.

It is also usual for awards and certificates to have decorative borders, you have a choice of ten different border styles. "Print Shop" graphics, if you have them, may also be used repeated around

continued on page 22

LONDON'S LARGEST DISPLAY OF PRINTERS MONITORS COMPUTERS AND PERIPHERALS

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Citizen MSP15E	£189	HP Deskjet	£499*	Star XB-2415	£548	Xerox 4020	£949
Citizen HQP40	£299	HP Deskjet+	£549*				
Citizen HQP45	£299	NEC P2200	£254	**COLOUR PRINTERS**		**LASER PRINTERS**	
Epson LX800	£155	NEC P6+	£419	Citizen HQP40	£349	Brother HL-8e	£1409*
Epson FX850	£285	NEC P7+	£538	Citizen MSP50	£350	Epson GQ3500	£1079*
Epson FX1050	£379	Panasonic KXP1081	£126	Citizen MSP55	£400	Hewlett Packard Laser Jet II	£1279*
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Photon Paint 2	£55
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Amstrad SM2400	(D)	£197
Dowty Quattro	(D)	£483
Miracom WS3000	(D)	£291
Pace Series 4 2400S	(D)	£381

KEY:— A = V21/V23
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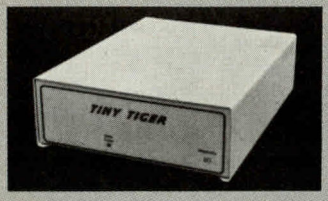
MEMORY AND STORAGE TECHNOLOGY (UK) LTD

TECHNICAL EXCELLENCE

"The MatchBox Collection"

COMPACT LOW POWER AMIGA® COMPATIBLE PERIPHERALS ENGINEERED TO WORK TOGETHER FROM THE CREATIVE PEOPLE AT MEMORY AND STORAGE TECHNOLOGY.

TINY TIGER™ HIGH PERFORMANCE SCSI HARD DISK SYSTEM FOR A500/1000/2000



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UNIDRIVE™

- SUPER SLIM LINE
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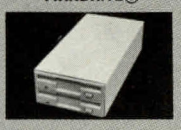

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PHOTO OF A500 VERSION

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THIS INTERNAL 512K CARD IS A DIRECT REPLACEMENT FOR THE A501. BY USING HI-TECH 1 MEG DRAMs, MICRO MEGS IS ONLY HALF THE SIZE OF THE A501 AND A FRACTION OF THE POWER CONSUMPTION. NATURALLY IT INCLUDES A BATTERY BACKED CLOCK.

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Audiomaster II

Paul Andreas Overaa 'samples' a terrific new music editing program from Aegis...

Audiomaster II is the new digital sampling and editing software from Aegis Development Inc. The program was written by Peter Norman and will run on everything from a single drive 512K A500 upwards. It comes supplied on two disks (one containing some sound sample data) and includes a reasonably informative manual which introduces the package and details the various facilities which are available.

When you first load Audiomaster II, you are presented with a display showing the combined editing window/control panel. To load a sample you just choose 'Load To Edit Window' from the pull down menu, make your selection and after a short delay while the sample loads you will see the waveform displayed in the edit window. There is a size indicator set in the top right of the display and in mono-mode this is the number of bytes in the sample, i.e. the filesize. When sampling in stereo, you double the number to get the number of bytes in the sample.

Once you have loaded a sample you can use the editing controls to modify the waveform. The editing facilities are some of the best we have seen to date and they are well integrated into the Amiga's Intuition environment. You can of course play the sample straight but it is also possible to use a 'Display' function so that a bar cursor moves through the waveform as it plays, allowing you roughly identify which parts of the waveform are making particular sounds. By using the mouse you can mark out and high-light part of the waveform and this 'range' can then be cut, copied and pasted as required. It's possible to zoom in on the high-lighted area to see it in more detail and having done that you can select a new range from the more detailed display and zoom in again to see the sample waveform in even greater detail.

When edit functions are performed, Audiomaster II only references those ranges which are actually displayed so this avoids the problem of inadvertantly modifying ranges which have been marked out as you zoom in on particular parts of a waveform. The program will only ever change the range which you actually see on the screen at the time an edit command is issued. You can flatten and invert parts of the waveform and, providing the sample size is less than 131 Kbytes, also set repeat markers to create waveform loops which play continuously (there is also a menu option for replicating the loop). The loop control gadgets give you fine adjustment and let you search for the nearest zero crossover points (loops always sound better if they begin and end at points where the signal has zero amplitude).

Sample tuning is also well programmed. There is octave, pitch, fine tuning controls and a tuning reference tone provided. A unique feature of Audiomaster II is its ability to play a sample back at 56,000 sps (samples per second) - i.e. double the rate which was previously regarded as the Amiga's sampling limit.

There is also a range of special effects to create echo, sample reversal (so that the sample is effectively played backwards) and waveform mixing. Freehand editing of the sample waveform is also possible. Although this is potentially powerful, getting useful results proved to be much more difficult! Echo is achieved by ranging the desired area which produces an echo window on the display. You set the echo rate, the decay rate, and the number of echoes required, and the Audiomaster II will calculate the echoed sample data and place it back into the original waveform. The echo functions are easy to use and in practice it is very easy to get good results. Volume ramp control is also provided and again, it is an easy facility to use - you just select a range then enter the start and end volumes (anything from 0-200%) and the program does the rest!

There are snapshot facilities so you can periodically save your work during the editing process, and you can recalculate the waveform relative to a different sampling rate - i.e. Audiomaster II can alter the sampling rate of a waveform without altering its pitch. Not only can this save memory, but it is often needed to create sounds which may be played with other music programs, e.g. if you wish to create 'instruments' suitable for using with programs like Aegis Sonix (which needs an 8636 sps sampling rate).

As well as handling IFF waveforms,

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To order direct, send £24.99 to **ELECTRONIC ARTS, DEPT. PCS, 11-49 STATION ROAD, LANGLEY, BERKS SL3 8YN.** For a product catalogue, send £1 to the above address. Credit card orders, please call **(0753) 46465.**

DELUX PA

Mark Pickavance gives his impressions of Dan Silva's acclaimed art package after a month's use.

Last month I gave you a run down of the majority of new features in Electronic Arts 'all singing and all dancing' Deluxe Paint III.

Having used the software for over a month I feel that I can comment on its worth with some confidence. And the first thing that I can state is that its pretty well bug free. This is not to say that AmigaDOS is, so be careful if you value your work.

A Brush With Animation

Continuing from the last issue, I will now elaborate on what must be a unique function of Deluxe Paint III, that of AnimBrushes.

These are simply animated brushes, but what you can do with animated brushes is quite remarkable.

To use an AnimBrush you must first create some animation. An example is in the Deluxe Paint manual. Draw a 'gradient' circle and make a brush from it.

Using the move requestor you can animate this brush over 20 blank frames performing a simple rotation of 360 degrees.

This can now be picked up as an AnimBrush, and used to paint some either very strange still images, or simplify the process of more intricate animated ones.

If you try painting with it the brush will rotate as you paint. To get a different animation brush image on a succession of frames the left AMIGA key can be depressed to frame flip automatically.

This system is active with all drawing functions of Deluxe Paint, if you sraw an arc using the AnimBrush and hold ther left AMIGA key while it is painted then you will find that you have an animated brush performing an arc across the screen.

Using these techniques it is possible to create animation quickly and with the minimum of trouble. AnimBrushes can be saved and re-loaded later. Anybody with intentions to use this package a great deal would be well advised to build a library of AnimBrushes covering a range of subject matter.

Play It Again Sam

Included on the Animation disk is the Player utility. This will run Deluxe Paint III animations without the main program. It can be used in two ways, either in an interactive or automatic mode.

Running PLAY from either the workbench or CLI gives you some simple menu options to LOAD, PLAY, ABOUT and QUIT. The LOAD requestor has an additional APPEND option which means you can link sequences together before playing them. Once the animation has loaded it can be displayed, and some simple changes like speed and colour cycling can be changed from the keyboard.

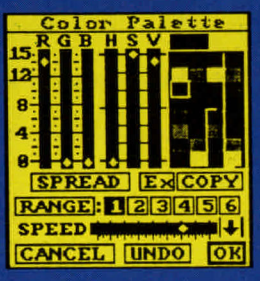
The other way in which PLAY can be

used is by a script file. These are ASCII text files containing some simple instructions for loading and playing animations using PLAY.

For example "PLAY 'MICKEY'" would load PLAY and play would then oa and display file 'MICKEY'. The commands you can use enable you to play animation for set periods of time or loop a set number of times. This is a useful facility for showing animations without requiring Deluxe Paint III, and displaying longer animations on smaller memory machines.

File it away

The standard file format for screens on the AMIGA is IFF. This data format is well documented and enables pictures to be easily transported between packages. That is as long as the software authors stick to the rules of the IFF data format.



EXT III – Part II

Deluxe Paint III not only saves screens and brushes in IFF but animations also. This means that animation files can be ported to other animation packages where it could be combined with sound and music. This is an excellent idea, painting and animating small sequences in Deluxe Paint III then composing and cueing the component parts in another package. The end result could be a larger animation which uses all the memory, which you could not put together in Deluxe Paint alone.

Making the film go further

The biggest problem I encountered was running out of memory at the wrong time. If you only have one Meg you can follow certain procedures to get as much available memory as possible for your needs.

1. Close the Workbench.
2. Delete the spare page.
3. Make the custom brush as small as possible.
4. Free the AnimBrush in memory if you have been using one.
5. Free the stencil if you have made one.
6. Delete any blank frames at the end of you animation.
7. Take a look at your animation and see if you can load it into a screen mode in which the colour range is smaller.
8. Re-boot with only 1 disk drive (you can get an extra 20K)

In addition avoid Half-Brite, Overscan and Interlace as these all eat up valuable memory. If you follow these suggestions you can create some reasonable animations without being continually annoyed by System messages regarding the lack of memory. Their is only one permanent

DPAINT III

cont. on next page

DELUXE PAINT III

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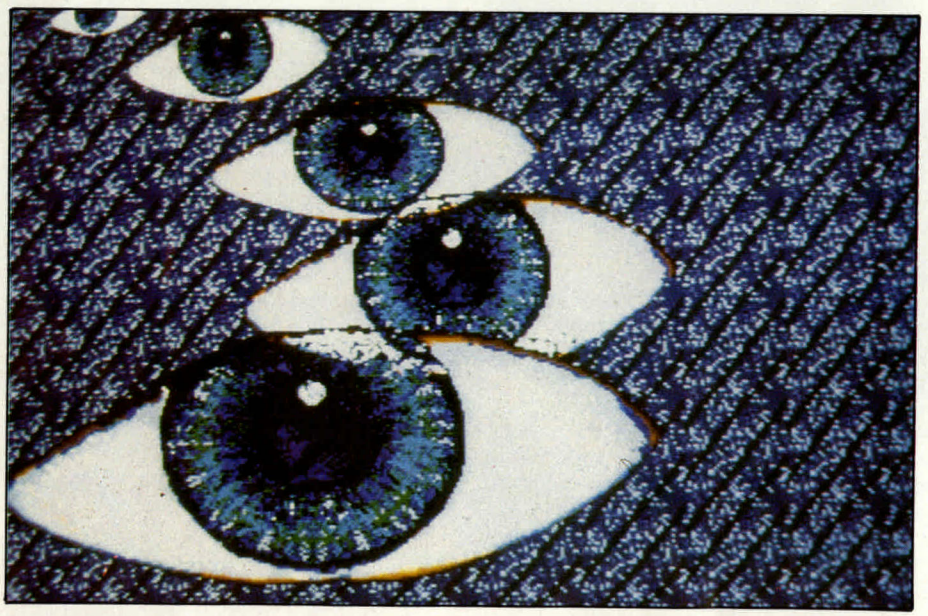
solution to this problem and that is an A2000 with 9 Meg. Not a cheap answer, is it?

Producers and Directors

So to what practical uses can Deluxe Paint III be put? The areas into which it could most effectively move must be video titling and animation. The overscan options make it ideal for producing anything where text or graphics must come from off-screen. For this you will require GENLOCK, the hardware which synchronizes and mixes an external video image with that of the Amiga. This could be used for low quality, home video use, or with more expensive hardware – a TBC (time base corrector) – broadcast or professional quality work could be created. Deluxe Paint II is the standard paint package for Amiga game designers for designing bit-maps. The new animation facilities will be welcomed by those who wish to produce complex sprite animations for games. Already being familiar with Deluxe Paint means that no time would be lost adapting to new software.

In the Paint arena it must be said that with Photon Paint you can create some very impressive images using the Hold and Modify mode, which Deluxe Paint does not support. From a personal point of view I find using HAM more trouble than it is worth and the 64 colour 'Half-Brite' is much nicer and easier to use. That omission aside, the user interface of Deluxe Paint is intuitive in use and features are better than most computer artists could wish for. It would have been nice to have seen true arcs and any angle ellipses, which I have found very useful in packages that contained them. And also to be able to have a different per frame. Perhaps I'l get lucky in Deluxe Paint IV. The last few months have seen the release of numerous animation packages for the Amiga. The best of these must be Moviesetter, Zoetrope and Fantavision. When compared with these, Deluxe Paint III wins in some areas and fails in others. It cannot produce the length of animation that Fantavision can within the same memory limitations. This is because Fantavision uses a totally different technique to produce its animation.



Comparison and Conclusion

Deluxe Paint III must be compared with two different types of products, namely Paint and Animation.

Zoetrope (originally called Cyber Paint on the ST) uses a very similar one to that of Deluxe Paint III and can change the palette for each frame, but doesn't have the powerful graphics editing.

The origins of Deluxe Paint means it supports graphics modes which none of the above can, and the results can look superior because of the tools used to produce them. I suspect that when the new graphics chips are available Deluxe Paint will work with them without a software upgrade. This would enable you to paint and animate 32 colour, 640 x 512 screens. This is an informed guess, but you would require 2 meg just to paint still images at this resolution. The true strength of Deluxe Paint III is in its dual function – many people who have created animations in the past used Deluxe Paint to edit the images and then moved them to an animation package to complete the operation; this is now not necessary, giving the animator more direct control over the production and speeding up the procedure of creating moving graphics.

Both animpainting and the Move requestor make creating quite elaborate animations pretty straightforward. The only draw back is the amount of memory that you must have to produce anything substantial. I found 1 meg limited. This is bad news for A500 users as they are unlikely to have more than this. As with any software package there were things I liked and things I disliked. But what matters more to me is that I quickly became relaxed with the style of Deluxe Paint III. After a month I can use all of the options, and can even remember some of the key short-cuts, without continually referring to the manual. At £79.99 you are spending your money on a solid package with some powerful features. I would be surprised to see any software which surpasses this in the near future. Having seen some of the amazing animations created using existing software on the Amiga, I can only imagine that Deluxe Paint III's existence will only stimulate more owners to produce their own, even more impressive animation.

Upgrades from DP and DPII

If you already have either Deluxe Paint, or Deluxe Paint II and want to take Deluxe Paint III on, then Electronic Arts will upgrade your Deluxe Paint, but at a cost. All you need to do is send the front cover of your existing version (to prove you have it) to EA, and some money. The cost is £50 if you have Deluxe Paint and £30 for Deluxe Paint II owners, plus another £5 for postage. This should all be sent to Customer Services, Electronic Arts, Langley Business Centre, 11-49 Station Rd, Langley, Nr Slough, Berkshire, SL3 8YN.

Editorial Note: In the previous article, we stated that only 2 of the 4 animations supplied with Deluxe Paint III were suitable for 1 Mb machines. This 'feature' has now been altered, and all four animations work with 1 Mb.

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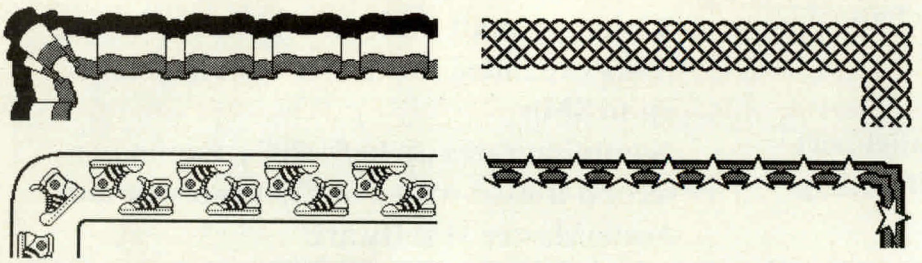

the edge to really give an individual style. With the disk comes an award style catalogue. There are hundreds of different ones to choose from. For the academic awards such as Geography, History or other subjects, there are 46 styles. There are 12 family awards, these are quite funny such as "Official Best Friend" and many others. You can, of course, make up your own funny awards. There is no end to them "Certificate of Ignorance", "Biggest Nose in the World Award" etc., (the best ones can't be printed in this magazine but I'm sure you get the idea).

The Amiga version has all the qualities of its predecessors and a few improvements as well. You can follow the menu commands quicker than before, edit the current document easier and one great feature not possible before is the ability to preview an award on the screen. The extra RAM of the Amiga makes this possible.

Once you own the master program disk there are other supplementary disks now available. There are cartoon awards for the very best in comic humour. A whole library of the best sporting awards all predesigned all you need to do is fill in the winners names. These supplement disks contain extra typestyles and extra border styles. these new designs can be incorporated into your original program giving greater variety.

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Audiomaster II

Audiomaster II can read and save Sonix data directly (note: IFF waveforms contain information about the sampling rate at which they should be played. This means that when an IFF file is opened Audiomaster II can automatically adjust the playback pitch to suit the sample. Sonix files do not contain this information so Audiomaster II will default to a 8363 sps playback speed.) You can incidentally also create backing tracks for use with Electronic Art's Deluxe Music Construction set.

The Audiomaster II program also allows you to capture sampled sounds directly from a digitizer providing the digitizer hardware plugs into the Amiga's parallel port or joystick port. It is necessary to configure the program to the type of sampler being used but this is a straightforward procedure. Two restrictions affect the maximum speed at which Audiomaster II can sample and these are namely the processor speed and the speed of the sampler device. Sample size is user selectable and there is an oscilloscope display which lets you check for overload and distortion conditions. You usually need a bit of experimentation to get the best results with a particular set up but some help is given in the manual for those of you using the 'PerfectSound' and 'FutureSound' samplers.

Audiomaster II supports full function stereo. All of the special effects available in mono mode can also be used on a stereo sample with the added flexibility of having the effect act on only the left or the right channel. People with mono samplers can still sample in stereo although the signal will be the same on both sides unless you modify the data, e.g. by ramping up one side of the sample whilst ramping down the other to create panning effects etc. There are quite a few other useful functions available including direct loading of a waveform to the copy buffer, high-res printing of the waveform and a 'RAM scan' option which lets you retrieve sounds directly from memory and save them to disk. The package also includes some utility programs for merging two mono files into a single stereo file, for playing sounds from the CLI and for removing IFF header data from IFF files to produce raw data files.

P.A.O.

Price: £69.95 (inc. VAT). Contact: Digipro Ltd., Enterprise House, Howards Grove, Southampton SO1 5PR. Tel. (0703) 703030

Dr. T's — Copyist Professional

Bill Harvey reviews a different type of 'word processor' that may bring music to your ears...

Producing a printed music score has never been an easy task and computer programs designed to help musicians in this area have been 'thin on the ground' to put it mildly. The reason is two- fold - firstly the software has proved extremely difficult to write and secondly to produce a workable system you need quite a bit of computing power. The Amiga has the speed/graphics capabilities to handle this type of application and now that 'Dr. T' have released Copyist Professional it looks as though it has the software as well.

Copyist Professional is then a musicians 'word processor' which allows you to create pages of manuscript. It is a program which offers the musician access to the type of cut and paste editing facilities that the writer gets with a word processor - the only difference being that the user manipulates musical symbols rather than words.

The program comes suplied on two disks together with a well produced A5 loose-leaf instruction manual and needs a minimum of 1 megabyte to run. Although a hard disk is recommended it is certainly not essential and in fact the machine we used for the review, a 1 meg / twin floppy A2000, performed very well indeed.

The documentation provided follows the usual 'Dr. T' arrangement and starts with a general overview of the package followed by a tutorial introduction. Following this introduction comes the chapters which deal in detail with the various program modules and last of all a selection of advanced tips, troubleshooting notes, service and support details and other appendices. The manual is well presented and does an excellent job explaining a very sophisticated program.

The Copyist's score editing screen is the place where the bulk of the activity involved in creating or transcribing a score occurs. When this module first loads you are presented with the screen equivalent of a blank piece of paper onto which you will place the staff, clef, notes, text etc. As well as the usual mouse pointer, the Copyist uses a separate editing cursor which determines and tracks the position of items as they are added. To create a sheet of manuscript you simply position the cursor in an appropriate place and select 'staff' from the menu. Similar operations add the clef and time signature, etc., but at this stage you also need to use some function key commands to add bar- lines and link staves. Copyist Professional has many symbol creation and embellishment facilities which need two or three keystrokes. Such items obviously cannot be included as menu operations they are implemented as function key operations.

The good news is that within half an hour of using the Copyist, I began to realize that the program is about the best of its kind I have ever used. The cut & paste operations will work on notes, symbols, phrases and complete sections of music. You can mark out a phrase, copy it into a new area and you can also change its position on the staff as you do so. These operations include writing back into the area that the music was originally cut from

"The Copyist's editor contains a lot of thoughtful touches which will please people who want to make serious use of this program"

and this is very useful indeed. For example you can superimpose a harmony line by cutting the original melody and pasting it back in transposed form. This not only allows you to create octave parts but many other harmonies as well, e.g. by pasting a phrase back a major third higher you can produce the skeleton basis for a third harmony and all you need to do is add the odd flat here and there.

The Copyist's editor contains a lot of thoughtful touches which will please people who want to make serious use of this program - the editor caters for triplets, ledger lines, altered stem directions, beams, bars of rest, trills, slurs, long brackets, long stem and short stem notes etc., the spacing between notes can be reduced or expanded, you can add song words, chord symbols and miscellaneous text anywhere on the score, bar lines can be moved after a piece has been written and you can even include user defined symbols which have been created with the Copyist's font editor.

Several data entry modes are available - firstly there is the standard mode in which notes are placed on the staff one by one (or pasted in using the cut and paste facilities). Secondly there is a text mode for placing words (verses, choruses or anything else) onto the composition. Thirdly there is a 'join' mode to allow groups of notes which are to be beamed to be entered quickly; and lastly there is a 'keyboard' mode which allows note heads to be placed onto any line or space, using the Amiga's keyboard. Copyist Professional includes a 'macro' facility which allows you to automate many routine operations and in fact various pre-programmed macros are provided as part of the package.

Limitations? Well, if there are any I have yet to discover them. The program can handle scores that contain up to 50 manuscript pages per score, and each page can have as many as 20 staves and can consist of up to 9000 symbols. There are so many options available that it is impossible to do the editor justice in the space of a single review.

If Copyist Professional had offered only its score editing facilities it would still have made a good impression, but it does not just stop there – the program can

import MIDI, SMUS and Dr T's KCS sequencer files transcribing them into notation form as it goes. I have read about the sort of problems that this sort of transcription can produce so I was a bit sceptical of these facilities. I pulled some of my KCS song files into the KCS sequencer package, read the individual verses and choruses back into the tape/track recorder and saved various combinations in '.ALL' file format. I also found some old SMUS files (whose origins are now uncertain) and experimented with these as well. Many of these files were created live via MIDI keyboards linked directly to a sequencer (although I must admit that most of these would have had the timing of the various parts 'quantized' to tidy them up a bit at some stage.)

So now for the big question - can the Copyist transcribe? The short answer is YES it can - and it seems to do a pretty good job of it as well. It is a two stage process - firstly the original files are read in and converted to a temporary 'stream' file (a cut down file containing just the information which is essential to the Copyist) and then this stream is read into your score. This 'importing' procedure is quite straightforward and gave no difficulties at all with our test files. Even with syncopated bass patterns, the results were good - to the point of properly splitting notes and tying them so that the bars were correctly split. If there is any 'intelligent guesswork' involved, the program keeps it well hidden because there was absolutely nothing wrong with the interpretation of my test files. As well as offering the potential capability for producing complete scores this facility provides a great way to produce individual parts from a sequencer file - e.g. to create a bass part you just just take the sequencer file, save the bass part separately, read it into the Copyist and print it out.

Because of the complexity of the transcription process I suspect that there will some areas where the Copyist will experience difficulties - no doubt the number of problems is going to be directly related to the complexity of the files being transcribed. There is however plenty of evidence that the basic algorithms being employed are extremely good and the result is that the Copyist is able to do a difficult job very well indeed. Providing the facilities are used with care you will find the ability to transcribe existing files both impressive and useful. File transciption adds a new dimension to the Copyist Professional because this means that often you can play and edit a composition using a MIDI keyboard/sequencer arrangement and then use that file to provide the bulk of the score. The Copyist's editing facilities can then be used to embellish and tidy up the original composition. Used in this way it becomes a tool that both saves time and does a job which is almost impossible by other means. Copyist Professional contains two other modules of particular interest. 'Parts' allows you to create individual instrument parts from a completed Copyist score allowing you to rename, transpose and reformat the layout of the individual output files. 'Synth' takes Copyist scores back to either MIDI file format or KCS '.ALL' file format.

The Copyist is capable of producing high resolution score printouts using a variety of different printers. Hi-res printouts can be created with any suitable printer and 'manuscript' quality scores can be created using special optimized printer drivers for dot matrix and HP LaserJet printers. Draft quality scores can also be printed quickly from the Copyist's print option menu.

Dr. T's software has an excellent reputation and few people who have ever used their products have anything but praise for them! The Copyist Professional has been designed to be used by professional and serious amateur musicians and is spot on target. To get the most from this program you will need to spend time with it but there is little doubt that this will be time well spent. This latest offering is a clever and well thought out piece of software that is going to win a lot of new friends for Dr. T's Music Software Company.

B.H.

Price:$275 (U.S.) + VAT
Contact: Dr. T's Music Software, Inc. 220 Boylston Street, Suite 206, Chestnut Hill, MA 02167 (USA). Tel. (617) 244-6954.

'Computers — Tools For An Information Age'

by H.L. Capron (Benjamin/Cummings Publishing Co. Hardback £29.95/Paperback £17.95)

Computers — Tools For An Information Age. A fat, well-produced tome of over 650 pages. It details everything one could possibly wish to know about hardware, software, literacy, PCWs, languages, programming, who invented what — and when — and how it all works.

It is similar in some ways, (particulatly price-wise!), to 'Up And Running', written by Marilyn K. Popyk, which was published by Addison-Wesley and reviewed in our April CCI , but 'Tools For An Information Age' differs from Ms. Popyk's book in that it comes with accompanying software and a supplements package — slides, etc — although these do have to be purchased separately.

If you just want to increase knowledge then the extras are not really necessary, for the enormous amount of information provided in the book, alone, is enough.

In addition to the normal text there are also 'windows' which give snippets about more unusual items. For example, computers being such a relatively modern invention, it is perhaps surprising to learn that there is already a computer museum. It is in Boston, Massachusetts, and it is no small place, either. There is over half an acre of hands-on and historical exhibits, two mini-theatres and a shop that, among other artefacts, sells — would you believe? — state-of-the-art silicon jewellery and chocolate 'chips'! (As CCI reputed on its foundation 2 years ago). And did you know that in the U.K. scientific researchers, with the aid of their computers, have invented a bionic 'nose' — shades of Lee Majors and the 'Bionic Man'! — that can distinguish subtle differences in fragrances?

There are also, in this all-embracing book, what are called 'Galleries'. Inserts of full colour — pages which illustrate special topics such as the making of microchips, computers as an aid to improving the quality of life, a look into the way the author feels the future of the computer will evolve etc.

Another useful chapter could almost be called 'Which Computer?' as it gives a breakdown of all the most popular brands, the pros and cons of owning different makes and a 'Buyers Guide'. By the way, it lists the Commodore 64 as 'one of the best-selling computers worldwide' and the Amiga has, and I quote, 'outstanding graphics and sound effects'.

Well written — in an easy-to-comprehend style — 'Computers — Tools For An Information Age' is the book for anyone who wants to become computer 'literate', (in both senses of the word). As computer books go it is not that expensive, that is if you buy the paperback version and, as an aid to understanding the plastic covered, glass-fronted, cyclops into which so many of us stare for so many hours in the day (and sometimes the night, too!), I would think this is an invaluable asset to anyone's collection.

DM

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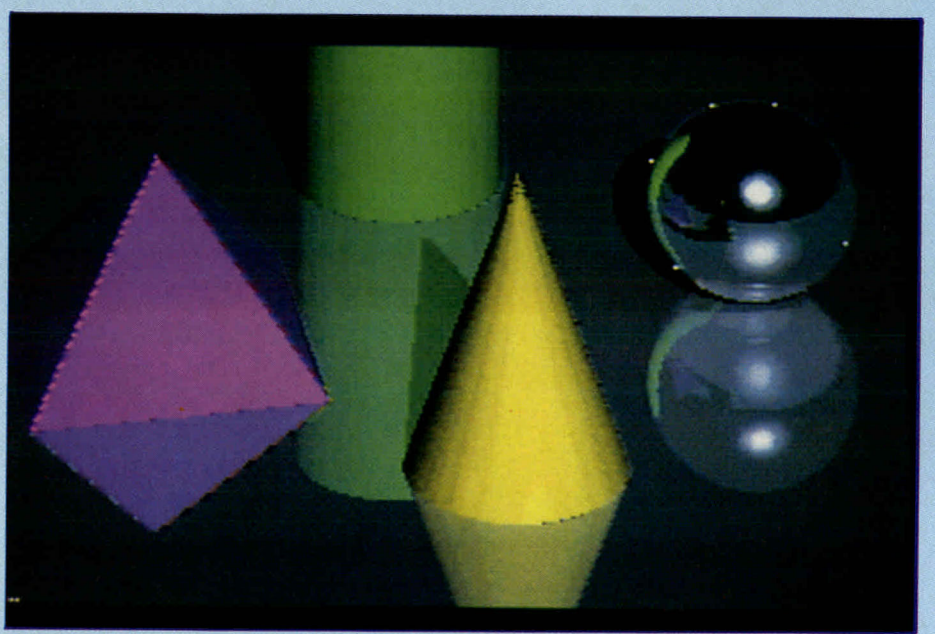
DESIGN 3D

A whole new universe is available within your Amiga. Peter Lee uncovers the depths of a startling new 3D design program...

The Amiga has created a springboard for some of the most powerful real-model programs for any home computer. Three dimensional modelling is the sort of topic which either fires you with imagination, or leaves you cold. There seems to be no middle ground. But even if you think computer generated 3D is for squares, bear with me – Design 3D could be the package to change you mind.

The program is very simple to use, and there is an important attempt to help the user actually feel in control of a computer generated 3D universe. The software, which combines a 3D modeller, 3D text generator and animation facility, was written by a 27 year old Parisian named Amaud Ribadeau Dumas – obviously a man who cares about the people who will be using the utility; it arrives on two disk accompanied by a sizeable user manual – which also provides the keywords for the program's password protection.

The program will work on any of the Amiga family of computers that have a minimum of 1 megabyte of RAM, and can output to standard preferences printers as well as plotters conforming to the HPGL standard. Animation files are generated in the standard ANIM format, and therefore can be incorporated into other programs such as the Director, Light! Camera! Action! and DeluxePaint III, provided they are not too long.



"Down either side of the PAL display screen are a series of icons, which make creation and editing of objects both intuitive and speedy."

The program opens up with the by now familiar mini-screen windows showing front, side and top views. The final screen quarter is where the image is displayed in perspective, and where – provided there are not too many polygons in your object – you can rotate it in real-time. This is also the window where the object can be rendered as a solid, a preview of your creations is always available whilst you edit.

Down either side of the PAL display screen are a series of icons, which make creation and editing of objects both intuitive and speedy. They are complemented by a full feature-packed set of drop down menus which create a powerful and sophisticated enviroment from which to work. Ease of use is of paramount importance for a program with such a difficult concept to grasp. It is not everyone who finds it easy to visualise a solid object from a plan view; and using a flat 2 dimensional computer screen to simulate the real world makes it even more baffling for some.

Design 3D has managed better than most other similar programs I have used to simplify the procedure. It is hard to say if someone new to the idea of 3D design would adapt as quickly as I did, but within two hours I felt fully at home with the program. To make an object, you need to construct it portion by portion with the polygon creation tools: these are a rectangle, ellipse, user-defined polygon and arc. Using a clone tool it is possible to quickly duplicate an existing object, and so create a front and back side for extrusion into a shape with volume.

An efficient and very usable function allows any shape you design to be spun around a vertical axis to create a rounded shape – for instance a candlestick can be spun from a two-line L-shape. The number of facets your spun object contains is definable, so you can have it as smooth or angular as you desire. Individual points on your polygons can be edited by selecting another menu option, and so too can be editied by select-

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DESIGN 3D

ing another menu option, and so too can entire objects or collections of polygons. This makes pin-point accuracy of the finished design achievable. A grid-lock option also helps with precision work.

As mentioned, there are three main creation windows, and once an object is started in any of them, it has to be completed by giving the program a reference point in 3D by positioning it in one of the other windows. Admittedly it is a difficult idea to come to terms with – it is all too easy to put an object in the middle of something else when you intended placing it either in front of or behind it. The plus here is that you can easily move the item exactly where you need it after you have created it.

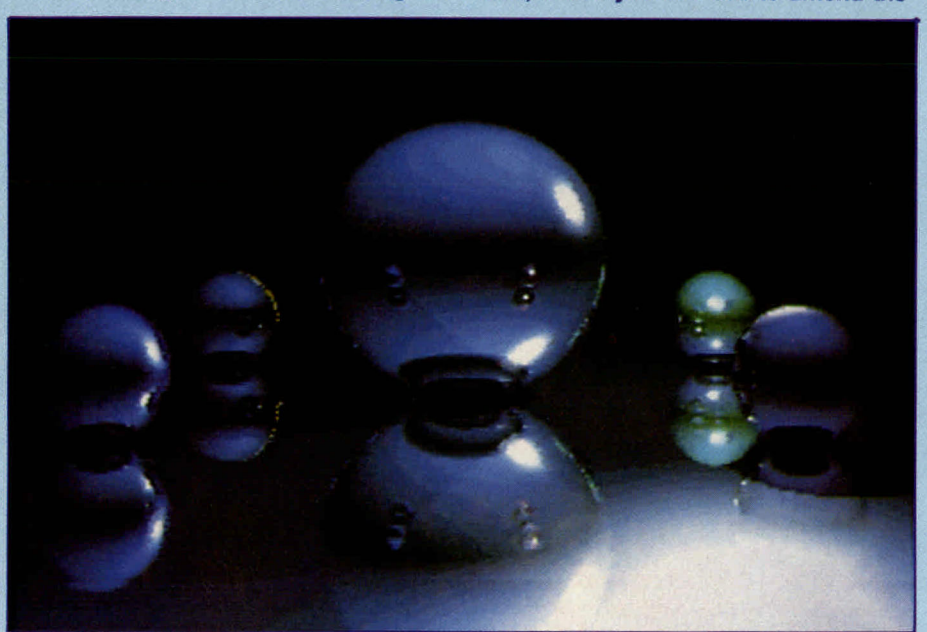
As a quick reference point, the real-time display window is indispensable. By moving the mouse pointer around the window you alter the angle of the object and can see exactly where everything is in spatial perspective. You can also request a coloured view of the scene in either the chosen palette colours (you can select from 2 to 16 colours for your work) or a special half-tone dithering technique which uses one colur and cross-hatching to achieve shading.

complex imgaing can be achieved with practice and effort. Even though the program is among the friendliest, be prepared for some serious effort.

Any of the four windows can be enlarged to full screen size for viewing, though editing has to be done in the quarter screen set-up. Screens may be saved as normal IFF images in case you need to work on one in an art package or incorporate it in a slideshow. Incidentally, there are two unsophisticated drawing tools for touching up screen art – freehand draw, and fill options.

Colour choice for polygons is made via an on-screen palette requester, and far more sophisticated shading a range of colours can be defined – for example from light blue to navy. For a higher grade of screen output (possibly to videotape) you can opt for high resolution (640 x 512), but the expected screen flicker can be an annoyance.

If part of your scene includes text, Design 3D is heaven-sent. It features a built-in 3D text generator and editor. The standard font is a basic, blocky affair which is perfectly adequate for most applications. For the special touch, the font editor is a superb inclusion, which you can use to amend the



Up to four light sources can be defined and positioned for your scene, but do not get the idea this is some kind of ray tracing package; although this is nowhere near as sophisticated as in ray-tracing. However, they are ample for creating an illusion of depth and quite

existing definitions and create a whole range of exotic styles.

Several useful features complete the design aspect of the program; objects can be rotated independently of each other, repositioned or erased, and an information requestor giving co-ordinates of each item can be called up and edited. There are six line styles to choose from for drawing, and objects can be loaded in at any time from a library which can be built up as you progress.

The icing on the cake has to be the general-purpose animation feature. By first of all loading in a movement script you can create an ANIM file and save it onto disk for playing with with the program's special player. There are a small number of useful scripts on the disk, offering flips, spins, zooms and other motions. This is just as well because although the formula for creating text-based scripts is given with examples, I would suspect that it is beyond the bility and needs of most users.

The actual movement of the objects is well-handled,a nd once an ANIM file is created, payback is fairly smooth (it could be better). The image can be in full colour or wire-frame, but it does have an irritating close gadget in the bottom left of the screen which is imprinted on every frame. I cannot understand why, because this ruins any chance of a professional image being dumped to video tape. Another shortfall is that each scene has to be treated as a whole in terms of animation. Spinning or zooming individual objects separately from each other is impossible. In addition, a utility on the disk allows the playing of animation files outside the program, though there is no guidance on how to achieve this on a self-booting disk.

Finally, data from objects created in design 3D can be converted to a type understood by Videoscape 3D, and vice-versa – with the warning that some hidden line removal may not work. Objects can also be saved in the form used by Professional page or Aegis Draw.

Conclusion

Design 3D offers a better than average entry into the world of 3D modelling on the Amiga. It is straightforward to control, has an excellent manual and superb self-operating tutorial program which automatically creates objects. There are more pros than cons in a program which does cut the odd corner. The animation scripts are all very well, but what is sadly lacking is a user definable range of movements. I consider the editing of a text script file totally unhelpful. Otherwise, the images generated and the 'user friendliness' of the program is excellent. The concept of 3D modelling is still tricky and one not to be attempted superficially, even with this program. But as far as enthusiasts are concerned, Gold Disk have another winner in their catalogue with this one. Merci beaucoup, M. Dumas!

P.L.

Price: £79.95. Contact: Digipro Ltd, Enterprise House, Howard's Grove, Southampton, SO1 5PR. Tel. (0703) 703030.

DATEL Midimaster

How crucial is the interface in MIDI applications? 'Very', says Stuart Williams, and Datel's offering is a dream

Powerful as the Amiga's amazing sound capabilities are, in the real world, serious amateur and professional musicians need to use 'real' musical instruments. The Amiga has great potential not only as an 'instrument' in its own right, but as the core of a musical 'power user' system, in control of a whole range of other instruments. How does the Amiga extend itself into the outside world, to take over and control musical keyboards, synthesisers, drums, even guitars and horns?

As the saying goes, there is 'more than one way of skinning a cat'. Amiga hardware designers and programmers have taken to heart the universal MIDI (Musical Instrument Digital Interface) standard for linking together and controlling electronic musical instruments, and grafted it onto the Amiga via one of the standard ports, the RS232 or 'serial' interface.

As those of you who have been following Paul Andreas Overaa's Midi programming series elsewhere in ***AUI*** will know, MIDI is a serial protocol. Data is sent bit by bit sequentially, which makes the RS232 port a prime candidate for this kind of work. However, to do a useful job, a MIDI system requires a mutliple interface capable of inputting and outputting data to more than one device at once, and this is where the hardware manufacturers have stepped in. There are several MIDI interfaces now available for use with the Amiga range of computers, mostly of United States origin. It is nice to see a British company, Datel Electronics of Stoke-on-Trent, England, filling the breach with a home-grown product.

The Datel 'Midimaster' is a small textured plastic box, 128mm by 106mm by 35mm, coloured a similar shade of grey-brown to the Amiga's function keys. The unit has a well made, solid feel, but comes with minimal documentation.

Along one side of the Midimaster interface is a row of five DIN sockets, each containing five pins, which (as you'll see from the accompanying diagram) are ports for MIDI IN, MIDI THROUGH, MIDI OUT 1, MIDI OUT 2, and MIDI OUT 3. On the opposite side of the box is a slot through which a twenty-five way flat ribbon cable 210mm long, appears, terminating in a twenty-five pin D type plug, which is designed to mate with the RS232 port at the rear of your computer. This, through the hardware within the interface, allows the multiple midi signals to be input or output through the serial port and deciphered by software.

It is very important when ordering a Midimaster interface that you specify which model of Amiga that you will be using, since Commodore changed the gender of the port when they began manufacture of the A500 and A2000. In the case of the Midimaster for the A1000, the plug is 'male', and for the other two models, 'female'. The interface is fully opto-isolated, which means there is no chance of transmission of electric currents between computer and interface if something shorts out along the line of instruments - a handy safety feature.

Setting up and operation of the interface is simplicity itself; plug it into the RS232 port, switch on the computer, load your software, and away you go! The MIDI IN port allows the connection of a Midi keyboard (I used a Yamaha PSS680) to transmit data into the computer; set the keyboard to transmit via MIDI to the computer, play your notes in the normal way, and the software, whether a professional sequencer or a 'music processor' along the lines of Deluxe Music Construction Set (which I used), will then take this data and convert it into the appropriate notes, either in a sequence or direct onto a staff.

If you are handy with the keys, this will be the quickest way to input music to your program. The three MIDI OUT ports connect to a further instrument each, allowing you to output to three keyboards or other MIDI devices, each of which are assigned a channel number. The notes input either by a keyboard on the MIDI IN port, or directly onto the staff via the mouse, (as in Deluxe Music,) and can then be directed to these external instruments according to the channel number of the instrument and the 'preset' number of the particular voice required on each instrument.

The final port, MIDI THROUGH, is used to extend the 'daisy chain' of MIDI instruments through the Amiga and on to

continued on page 32

MI Mach

Philip Taysom, a pro-am musician and Amiga lover introduces you to the other side of MIDI music making; the instruments...

So you have bought your Amiga, MIDI interface and sequencing package that's the best on the market, you have the basis for a computer based home recording studio, but what do you use to create the sound?

If you have been reading Paul Andreas Overaa's articles on the MIDI standard, you may well be wondering "well what now?". Buying your computer and software, whilst a major step, is still only a part of the process of making music with your computer. If you have already invested huge sums of money buying MIDI synthesisers, samplers and drum machines then little of this article will be news to you. If, however, terms such as sampler, analogue keyboard, windcontroller, digital expander and drum module leave you with a distinct feeling that you have missed the boat, then read on!

Music and the Amiga

There has been a long standing battle as to which machine is the best for making music. The contenders to date have been the Atari ST (so far the leader) which is limited by its poorly implemented onboard MIDI interfaces and lack of expansion but over endowed with leading manufacturers' software and large pro user base. The IBM PC and compatibles, which despite recent low price machines still suffer from an apalling user interface, very expensive MIDI and expansion baords and over priced software. Only recently has the music industry taken the Amiga as a serious musician's machine. MIDI interface hardware by third party manufacturers is not only extremely good but very reasonably priced. The Datel MIDI interface unit offers three MIDI outs and one each of MIDI in and through all for around £45. With the new software packages coming out from all parts of the globe, which at least make full use of the Amiga's graphical user interface and powerful processing abilities, musicians are now starting to notice the Amiga.

Methods of Synthesis

Just as with the computer industry, technical innovation has meant that no sooner than one company has released its new range of synths when another manufacturer comes along with another new range with more features, better sounds and lower price. The good news is that since 1983 all synth manufacturers have implemented the MIDI interface, though to a varying degree of standardisation. Despite all the innovations only three prime methods of sound production have emerged. The oldest and most basic is analogue synthesiser. This method has been around in commercial form since the early 1960s though its origins can be traced back much earlier. Pioneered by the likes of Bob Moog, the base principle is to pass an electrical oscillation (usually sine, sawtooth or square wave) through a series of envelope generators and filters to produce a characteristically warm rich sound. As I mentioned, analogue is the oldest form of synthesis and really went out of fashion during the early 1980s. The early synths are now seeing something of a revival in this "acid house" age. However, since these machines are relatively out of date they can be picked up second hand in the classified pages of the music magazines for tiny sums compared to their price when new. The drawback is that only a few of these most recent analogue synths are equipped with the MIDI interface. A few machines can be upgraded to cope with MIDI but the cost of this added to the purchase makes the total price close to the newer digital machines now on the market. Some notable exceptions (and a few of my personal favourites) include the Korg Poly 800, Roland Jupiter 6 and Oberheim Matrix 12.

The next revolution to take place was the creation of digital synthesisers. After developing analogue synthesisers from rudimentary origins, Yamaha, formerly known for their mass produced (but amazing quality) flutes, clarinets and pianos, spent years developing the world's first commercially available digital synthesisers. Early digital machines such as the NED Synclavier and Fairlight remained the toys for the very well off professional musicians with price tags well into six figures! Yamaha's first offering, the DX series, was to set the music world alight. Using a microcomputer to pass waveforms through a series of algorithmic filtering, some of the most stunning sounds ever could be produced. Unlike analogue synths with their warm lush sounds, sweeping strings and off the wall effects, digital synths produe the most startling clean edged and percussive

"For example on Peter Gabriel's "Sledgehammer" the panpipes at the beginning are a digital recording of a real panpipe which can be played back at any pitch and with a variety of effects across a keyboard (in the case of 'Sledgehammer' it was a Fairlight CMI.")

sounds. For a couple of years the pop charts were inundated with records stuffed full of the new sounds available to musicians.

The last method I will deal with is sampling. Again, without going into too much technical detail, sampling involves the digitising or digital recording of a sound from real life. For example, on Peter Gabriel's "Sledgehammer" the panpipes at the beginning are a digital recording of a real panpipe which can be played back at any pitch and with a variety of effects across a keyboard (in the case of Sledgehammer it was a Fairlight CMI). Samplers have ony been available for general public consumption in the last couple of years. The first generally available sampler was the E-mu Systems Emulator. This soon bacame a firm favourite with many musicians despite its price tag of around £10,000 when it first hit the market. But since the fundamental internals of a sampler are that of a computer, the cost of samplers has come tumbling down in hand with micros to the sub £1000 bracket. Their usefulness is unlimited. Without my Akai S900 I would be lost. It is often used for getting that champagne cork popping at just the right pitch in a rendition of the 1812 overture or getting just the right percussive sound from a half full water tank being hit with a hammer!

Take your pick!

The first thing to realise when your buying your own MIDI setup is that it is so easy to spend much more than you need! For example I spent a small fortune buying my Akai S900 only to find that three months later it was superseded by the S1000! It pays to first read the music press. A couple of magazines exist solely to provide the pro-am musician with reviews and gossip on all the music hardware. Secondly, pay a visit to your local hi-tech music store. A number of chains and independent music stores exist and the sales staff are usually musicians themselves. They should be glad to spend an hour chatting to you about what is new and best for your set up. If your budget will not run to new hardware, then take a look at the classified sections of the music magazines. Since manufacturers are updating their machines at an alarming rate, people are constantly looking to off load their machines. Provided a synth has been looked after, and preferably not been carted from one live performance to another, then a secondhand buy should be fairly safe. If you have set your heart on the lush warm sounds offered by the older analogue synths then rest assured that the only way you will get your choice is by buying secondhand.

Many manufacturers have tried all sorts of experiments to gain more market share so do not be put off by obscure terms. Musicians love techno jargon. Remember that there are three prime methods of synthesis; analogue, digital and sampled.

Just to make things that little more difficult when you have decided what kind of sonic performance you want to produce, the machines that produce the sounds come in a number or varieties. Firstly there are the keyboard synthesisers or samplers that have the sound generation unit and keyboard built into the same box. An expander or rack mount unit is generally identical to its keyboard brother without the keyboard. Expanders receive their MIDI note data from either an external controller like a mother keyboard or from a computer sequencer. One advantage of expanders is they usually retail for a considerable amount less because there is no costly keyboard built in. A mother or master keyboard has no sound generation built in and will control a number of external expanders. For composing music with a computer, one of the best set-ups can be to have one mother keyboard controlling several expanders and the Amiga sequencer. Other units on the market include wind controllers like the Yamaha WX7 which enables MIDI instruments to be played by a clarinet like controller, MIDI guitars that convert the pitch of the string played into MIDI note data. Effects processors like the Yamaha SPX50D and Alesis Midiverb may be MIDI'd into your setup so that a reverb effect may be changed to a delay effect in the middle of your peice of music simply by including the relevant command at the correct point in your masterpiece.

The advantage of using a computer to sequence your music instead of a tape recorder are numerous, and would merit another article on its own. Apart from the ability to perform editing far beyond that possible with a tape based studio, your micro can be used to store any of the sound or perfomance data that your synth may throw at you. I personally use my Amiga to store my most often used Akai S900 sound samples on the hard disk, which means no more lost floppies and a faster loading time. All of the sound data download is perfomed via MIDI. Sound and sample editing can be perfomed using the Amiga's screen and mouse, with relevant software, saving time being wasted and ideas tried without having to fiddle with the limited controls on-board the synth. All in all my creativity has increased to the degree that music is no longer a hobby to me. Using the advanced timing features of the software I use, I can provide soundtracks with SMPTE time coding so that a local video company can easily lay down my creations with their video footage. This saves them a fortune on royalty payments for existing music and making enough money for me to pay off my overdraft for my equipment.

Above all, using a computer as a digital sequencing tape recorder I can produce the kind of music I could have only dreamed about and admired about two years ago. Remember that MIDI magic doesn't have to cost you a fortune. Your choice of synthesisers can be led entirely by your budget. There always will be a market for second hand synths, so you can try your hand at MIDI music making without breaking the bank!

P.T.

DATEL Midimaster

other instruments along the line; with the right software, such as a midi compatible sample player, the Amiga can become yet another instrument in the MIDI chain, instead of simply controlling it! Thus, the 'poor man's Fairlight' (the Fairlight is a powerful but extremely expensive sound sampling musical instrument, with which the Amiga has a number of capabilities in common) can be both the controller of a set of electronic musical instruments and an instrument in its own right.

In practice, the Datel Midimaster worked well, in fact flawlessly, with Deluxe Music Construction Set. I would anticipate no problems with using other software, such as the powerful and complex sequencers now appearing for the Amiga. The Yamaha PSS680 FM synthesiser keyboard which I used with the Amiga and Midimaster linked up and worked first time, using standard cables, and needed only the setting up of the MIDI instruments within the Deluxe Music score; after which it played six instruments (preset voices on the PSS680) flawlessly, at the same time. Because the Yamaha is capable of playing up to twelve notes or voices at once, there is obviously plenty of scope for using the sixteen MIDI channels available from within the program!

The Midimaster is not without minor niggles; granted, one can buy MIDI cables already made up (these are not supplied, but are available at extra cost of £6.99), but I would have liked very much to see a sheet with the pin connections explained for those of us with soldering irons, who could not only save a fair amount of money by making up our own cables but would be able to make them of a length to suit the job.

In addition, the individual ports are not labelled on the interface itself; to discover which is which, you need to consult the meagre instruction sheet - surely the port names could have been moulded into the casing?

These niggles are extremely minor points, however, and I have no hesitation in recommending the Datel Midimaster interface to any budding Amiga musician, amateur or pro, wishing to control external MIDI compatible musical instruments from his or her computer at £34.99 (post free in the UK), it is not only reasonably priced, but it works! You can't say fairer than that!

S.W.

Price: £34.99. Contact: Datel Electronics Ltd., Fenton Industrial Estate, Govan Road, Fenton, Stoke-on-Trent, England. Tel. (0782) 744707.

MINDWARE'S PageSync SYNCHRONISES GRAPHICS, AUDIO

Mindwae International, developers of Commodore Amiga desktop presentation and animation software, announced PageSync, a powerful new tool for creating sophisticated, timed interaction between Amiga-based graphics and professional-quality audio, including MIDI.

PageSync is a groundbreaking product in the history of Amiga-based computing because it allows external MIDI events and computer animation to control each other. Used in conjunction with a MIDI instrument, PageSync lets a computer animation advance, stop or reverse based upon signals generated by that MIDI instrument. For example, a MIDI drum machine could cause a cartoon to advance by one frame per drum beat, keeping the animation in perfect time with the music.

PageSync could also do the opposite: an animation playing on the Amiga could literally play a MIDI instrument while running the animation.

PageSync will also synchronise computer graphic events and digitized sound samples.

PageSync will see use in a diverse range of applications, including music, corporate sales presentations, training, animation and home video.

PageSync will also make it possible to integrate computer graphics and music with video, through the use of additional hardware. For example, anyoe could make their own home music video by sending synchronised graphics and music to a standard video cassette recorder. In addition, live images from a video camera could be merged with graphics into a single image through the use of a Genlock. This image, along with the synchronized music, could then be directed to videotape.

PageSync carries a retail price of $100, and will work in conjunction with two other Mindware products: PageFlipper Plus F/X and PAGErender 3D. For more information contact: Mindware International, 33 Alliance Blvd. Unit 1, Barrie, Ontario L4M 5K2, CANADA, or call (705) 717-5998.

AEGIS INTERACTIVE MUSIC DISKS

Aegis Development Inc. has released Sonix SoundTrax Volumes One & Two, a series of high-quality interactive songs for Aegis Sonix, for professionals and novices.

Written and performed by Jon Rami, these disks use clean sampled instruments for each song, which has keys carefully set on the Amiga keyboard making an off-key note almost impossible.

To his credit, Jon has worked with Stevie Wonder, Ray Parker Jr., and the Drifters, among others. Work in the past for Roland, VOX, and Marshall Amps has qualified Jon as a professional in the music field.

"I'm very pleased to say that nothing like this is available for any other music programs," says Jon. "Being able to play along with these songs will bring the musician out in everyboddy."

The SoundTrax Volumes each contain two full disks of songs. Price: $19.99 each.

Contact: Aegis, 2115 Pico Blvd., Santa Monica, California, 90405, (USA). Tel. (213) 392-9972.

Some Good News from HiSoft

HiSoft BASIC

The main reason that most people would consider purchasing another BASIC is so that they can produce stand-alone programs. And if that compiler happens to also extend the language in some way and is faster than the existing BASIC, well all the better. HiSoft BASIC includes an excellent compiler that will allow you to do just that.

As with all HiSoft products, the manual is clearly written and informative and an example of how a computer manual should really be written.

HiSoft BASIC has got a great deal going for it. It's fast, portable, compiled and ... is quite simply the best implementation of BASIC yet seen on the Amiga.

New Computer Express 28/1/89

HiSoft has managed to take AmigaBASIC and mould it into a credible product..

A nice, fully-integrated environment which reduces the time taken to get your programs up and running.

Amiga Computing 3/89

... ideal for the beginner who doesn't know a Procedure from a FOR...NEXT loop whilst still giving enough of an in-depth study to suit the advanced users.

For adding sheer speed to your AmigaBASIC programs, HiSoft BASIC is an excellent choice. Some excellent demos.

ST/Amiga Format 3/89

For most applications, it (HiSoft BASIC) will produce safe, multitasking programs which employ the Intuition interface of windows and menus and all graphics resolutions. The sprites and blitter objects (bobs) are yours to command, so some games programming is not out of the question. The only problem with this package is deciding what to write! ... why didn't it come along sooner?

Computer Shopper 4/89

HiSoft Devpac

With release 2 of Devpac Amiga, HiSoft have greatly enhanced their already excellent 68000 development system, making it quite indispensable for the serious programmer.

Transactor 5/89

Devpac Amiga is a full featured and highly professional assembly language package. It gives you a great deal of control over listings and object code and assembles at a speed you'll find hard to believe!

Amazing Computing 6/88

It's a very fine package indeed, handling all the chores of Amiga assembly language development. MonAm2, the debugger and disassembler, finds bugs very easily.

The Games Machine! 4/89

Editing, assembling, debugging and even program execution from the same place - not fantasy, but something offered by Devpac.

Fast assembly speed, powerful directives for optimising code, extensive conditional assembly options, symbolic debugging ... Devpac has it all plus a lot more. It is packed with features and has everything machine code program developers could want.

ST/Amiga Format 12/88

Just some of the things that reviewers have said about our two top products on the Amiga. *Now for the really good news*: this is the first time HiSoft has advertised in Amiga User International and, to celebrate the occasion, we are offering **£10 off** either HiSoft BASIC (normal price £79.95 inclusive) or HiSoft Devpac 2 (normally £59.95 inclusive). All you have to do is to clip out the box below and send it to HiSoft along with your remittance.

The Old School,
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Bedford, MK45 5DE
Tel: (0525) 718181

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Zoetrope

Moving towards perfection? Peter Lee tests a new and comprehensive animation package which defines new limits in expertise...

'State of the art' is one of those computer cliches which have been debased by over-use. Like the boy who cried 'wolf', people tend to disbelieve it after a time. At the risk of being savaged by the cynics, I have to say that Zoetrope, the animation program from Antic Software, is just that. It redefines standards and has so many novel features that I cannot think of a single utility which can match its output.

Zoetrope is an old fashioned word describing an early mechanical animation toy; but, this incarnation is full of new ideas and effects. Rumours of its potential have been circulating for some months, and the goods are as good as the expectations.

The program comes on an unprotected disk together with a tutorials disk. At least 1 megabyte of memory is needed, but the entire program loads in one go so there is no further disk access. There is a dark side, however, in that the version under review worked only under the NTSC system.

"Zoetrope includes some expert video effects found only on the expensive dedicated systems."

Zoetrope includes some expert video effects found only on the expensive dedicated systems. And it achieves the most complex transitions with so little fuss, and with such speed it is often astonishing. In essence, the program is a combination animator and art package. But while the graphic creation is pretty run of the mill, it is in the field of animation where Zoetrope captures the imagination, and allows access to its most innovative features.

The program's features include: cel animation; automatic travelling matte; fade blend and cycle; antialias; defocus; shatter; ripple; layered composition; autoblueing; stretch and 3D rotation.

The program can also load in files created on other 3D programs such as Videoscape 3D, Live! and Aegis Animator. This allows you to work on these with a greater degree of freedom and incorporate further special effects.

Control of the program is either through pull-down menus or keyboard shortcuts (of which there are too many to memorise!). These allow access to complex-looking large scale requestors, bristling with options and initially daunting. However, thanks to the well-structured and lengthy manual, once the tutorials are completed things fall quickly into place.

Animations

The core of Zoetrope is its ability to animate objects. This is achieved in the normal way of flipping through stored screens in sequence, using a compression technique which only saves the changes between frames instead of the entire screen itself.

The more memory you have, the greater the number of screens available and consequently the longer/more complex the animation. 1 meg is the bare minimum, and even here you could run into storage trouble. The program works only in low resolution mode which, although allowing a healthy 32 colours on screen, has the worst definition for clear video transfer.

Once the number of frames has been set, moving through them for editing is achieved by a clever control panel on screen whenever you need it. Working like a tape deck, it allows instant access to any frame, playback of frames, insertion and deletion. One of three editing modes is available - one for the current frame only, another for a pre-defined sequence, and finally all frames. It is important to check this often to avoid a simple amendment to a screen being unnecessarily duplicated across a range.

Cel animation such as this has its basis in the old pencil and paper methods of the great studios. And Zoetrope has carried over an extremely important trick of the old animators - the chance to see the image on the preceeding or next page as a guide for the current drawing. It is like having a sheet of tracing paper, allowing you to register parts of one image onto another cel before amending the portion you intend moving.

In the case of Zoetrope, changes in the image from the former frame can be displayed in blue while you draw; this dummy image will disappear once you have finished, but it can be a great help and saves constantly flicking back and forth between cels. An associated, but less useful command allows ghost images of the previous and next frame to be imposed on your current screen. This is only effective in monochrome work, so is best suited to those who prefer to draft out their animations before actually using colour.

An IFF picture, either drawn with Zoet-

continued on page 35

continued from page 34

rope's tools or imported, can be used as a background - in which case, in a stroke of genius, it can even be loaded behind your existing animation sequence - or as the basis for an animation itself.

"While a whole screen can be moved, rotated or spun, more usually you would clip out a portion into the buffer for manipulation."

While a whole screen can be moved, rotated or spun, more usually you would clip out a portion into the buffer for manipulation. This can be as simple as gliding it from point A to point B, or as complicated as you like. The animation's speed has a good range, but to avoid jerkiness you will need more frames if you intend having a slow sequence. 3D movements are in spatial perspective - your clipped image is really only a flat 2D picture, but can be brought in and out of the screen and rotated as if it were a piece of paper.

APM (Antic Pixel Mover)

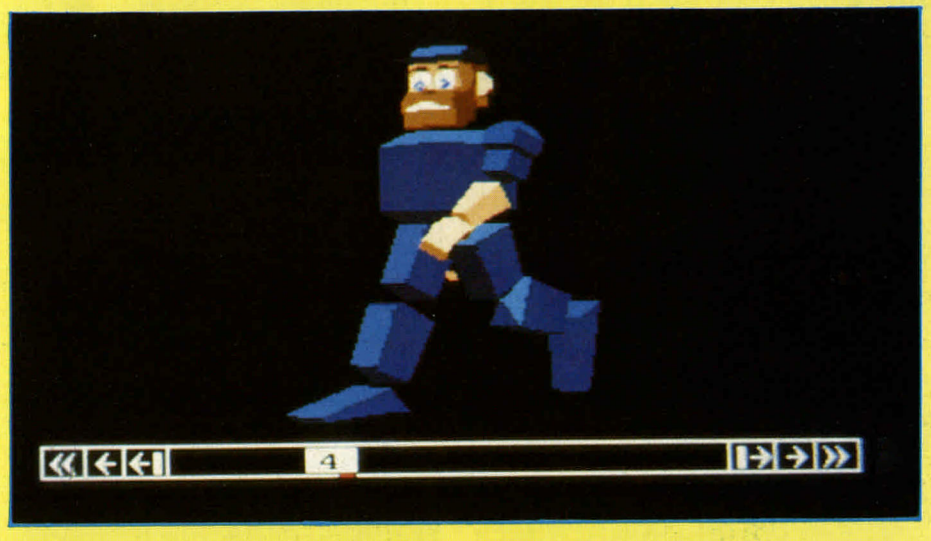
Tools exist here which will stretch your creativity thresh-hold ten fold. We are

beginning to uncover the program's power; once defined, a clipped image can be spun and rotated in three dimensions as simply as clicking the mouse button and moving a cursor. It can be stretched or shrunk, or made to follow a twisting path of your own making. All these effects can act simultaneously, and can be spread over your entire range of frames.

For instance, if you want a small star to spin out of the background, flip and then zoom towards you until it fills the screen, you can realise all this in less time than it takes me to tell you about it. Separate objects can be worked on independently, allowing complex scripts to be built up gradually in a layered technique. It is one of the most powerful and comprehensive range of movement controls I have come across on the Amiga, and certainly the best value - the others I have seen have been excellent, but far less comprehensive and a lot more expensive.

Pixel FX & Matte

Zoetrope comes complete with its own visual effects generator. To whet your appetite - you may have seen a demo disk showing the classic King Tutankhamun drawing from Deluxe Paint which shimmers when you shake the mouse. Hold onto your hats...you can achieve a similar effect using Zoetrope's ripple command. Spread over a series of frames on a static image, the effect is glorious - very like the movie effect when someone comes round after a crack on the head.



"To wet your appetite – you may have seen a demo disk showing the classic King Tutankhamun drawing from Deluxe Paint which shimmers when you shake the mouse."

Similarly, the shakes can be given a jagged edge. Other effects include a venetian blind wipe, a defocus option which can be used to create a feeling of depth as focus blurs on the background while the foreground zooms slightly forward. There are a couple of effects thrown in for good measure - crystalise and unrez, which just seem to muck up the picture, but you may well find a use for them.

For some advanced effects (the manual does let the user down on this topic somewhat) a travelling mask (or matte) is available, and the prime use I found was for animated cast shadows - overlaying the true animation slightly offset from the animated matte which is its shadow.

Drawing

Clearly you will need an image of some sort to animate. You can either import IFF files, or create your own using Zoetrope's in-built paint program. This makes a brave stab at graphic creativity, but only provides average facilities. However, to cram these into a program bursting with animation goodies is a great achievement, and something I cannot begrudge.

A variety of brushes are available, and you can define your own small brush from the screen. Painting can be in any of 32 colours available in a user-definable palette, and as well as the standard freehand mode you have streak, stipple, airbrush, fill, line, polygon, circle and box, together with text, which can be in any font you may have or the good selection which accompanies the program.

A few frills have been added, such as connected or concentric drawing mode (allowing novel designs to be created without much effort). A small area of a drawing can be magnified and worked on, which is particularly useful in that as you flip through animation frames, the same portion of each is enlarged - good for editing facial expressions or intricate and detailed movement across a range of images.

The documentation is thorough, simple to follow with a massive reference section. This is vital to encompass the wide ranging facilities. The learning process is, however, not as intimidating as the complicated special effects might suggest.

Conclusion

There are few programs around which encompass Zoetrope's range; perhaps the nearest comparison would be Deluxe Paint III. Howver, the emphasis of each program is opposite - DPaint's heart is still in its graphics, while Zoetrope has animation as its strength. Both have a similar price tag, so it depends where your interests lie. As far as animation effects is concerned Zoetrope, is a real winner, though it fails to reach the artistic excellence of Dpaint. Pity about the NTSC display - that could well be a major disadvantage once the novelty has worn off. Otherwise a major advance in the field of Amiga video presentation, and one with tremendous value - both in terms of cash and potential. Until something better arrives, Zoetrope really is state of the art.

P.L.

Price: £79.95. Contact: Digipro Ltd, Enterprise House, Howards Grove, Shirley, Southampton Tel. (0709) 707030

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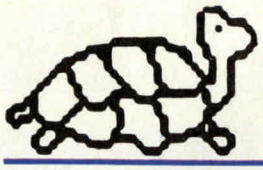

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The Budget System

Mark Smiddy looks at a low-cost high quality integrated word processor, database and mailmerge combination that defines the term "value for money..."

Word processors never come cheap. There are a few in the public domain and some shareware ones – but these often leave a lot to be desired, not least a complete lack of support when you run in to difficulties.. Anco, have long been known for their budget games software: but now for the first time they have ventured into the small business and educational world with a cheap answer to some severe headaches.

Word processing is a field which many people find rather confusing with terms like: right justification, superscript, subscript, word wrap, WYSIWYG, NLQ and so on. These features form the basis of modern word processing and all can be found lurking in Micro text. This is part of what makes it such good value – because although it lacks the refinement of larger, more costly systems it can demonstrate the rudiments of the subject – and still maintain a reasonable output. It also features an integrated mailmerge – compatible with Micro Base.

Micro Text is supplied on one disk with a simple 11 page non-indexed manual. Considering that most commercial word processors come with giant ring-bound tomes this may seem rather surprising: although some compromise had to be made regarding cost and this was obviously it. The same applies to Micro Base. However in both instances, the manuals are adequate albeit a little simplistic. Similarly the example files supplied are few and short – although they illustrate the point well enough.

In effect I would guess teachers and others could absorb the information quite quickly and make use of the systems with very little difficulty. In fact the simplicity of both products is the key to their usefulness. Rather than being bombarded with a whole host of complex options, multiple reference commands and indented menus – Anco's system is simple sit-down-and-go stuff and does produce quite pleasing results with very little effort.

Micro Text and Micro Base each present a similar screen – both look rather like television screens with contoured border. This means: firstly you can not re-size the window in any way to suit your need and secondly you have to work within the constraints of an NTSC screen which is several lines shorter than the British PAL system. The only gadgets available are push-to-front, pop-to-back and drag (by the title bar). At first this does seem rather limiting but you get used to it very quickly – and in the end it works out to be less complex.

At the bottom of the screen is the control panel for inserting special formatting codes into the document being edited. Codes appear in inverse video in the form of * followed by a letter; *J signified justification on for instance. The controls are used to switch on Micro Text into the following modes:

Justification ON/OFF: Justification ensures every line of text terminates on the right hand side of the printed page. It does this by adding extra padding spaces at various points along the line.

Centering ON/OFF: Any text after a centering on command will be centred between the left and right margin settings.

Page Break: Following this code the printer will be forced to start a new page.

Underline ON/OFF: All text following this command will be underlined – spaces included.

Bold ON/OFF: Prints text in heavy print. This may be useful for highlighting text or producing a document ready to be photocopied. Also some low-cost printers do not support Near Quality Printing – bold can often be used in lieu of this.

Superscript: All text following this command appears as half height letters occupying the top half of a character cell.

Subscript: The exact opposite of superscript is also supported.

Next up come the menus. Perhaps one of the strangest features of Micro Text is its insistence on using non-standard names for things, which is a pity. The usual project menu has been named Task for no clear reason which may give rise to some confusion initially. Also the inevitable edit menu has been renamed Text.

The project or task menu contains the usual options to load, save and merge files – although in the current version it is not possible to import or export ASCII files. In addition Anco have been thoughtful enough to include an option to format a disk *from within* Micro Text. However, useful as this option is it defaults to DF0: and does not run as a background task. In the event the machine hangs while the drive formats – a minor problem really, but something Anco may care to rectify in future releases.

Something else they may find useful to incorporate is a Quit option. Presently, the only way to leave Micro Base or Micro Text is to reset the machine! Even so the two programs will live quite happily in machines with at least 1Mb RAM and multi-task quite contentedly. Perversely, it is the lack of a quit option that may see these programs finding a use in the classroom – since an inexperienced student may well find themselves losing a lot of work simply by selecting the wrong options.

Text editing from the text menu is a little unrefined. Perhaps the worst feature being the block marking. This is how it works: Firstly position the cursor at the start of the block, press function key F1 – the screen colour goes from blue to red signifying block marking is active, now move the cursor to the end of the block and press Return. This is a very peculiar way of doing things – but it works.

Now to the best and the most useful feature of Micro Text – the mailmerge. This is obtained by a well thought out system and is perhaps the best-designed part of the package. Two extra menus control this: Mailmerge and Fields. Initially the MailMerge menu contains two items a blank bar and off. Selecting the bar calls a file selector with the search pattern designed to Find Micro Base files. Once a file is loaded the Fields menu becomes

continued on page 38

continued from page 37

active and displays all of the available fields.

Now all you have to do is move the cursor to where you want to insert the variable and selct the appropriate field from the menu. Quick, simple and effective. The result may look something like this:

‹First Name› ‹Surname›
‹Address 1›
‹Address 2›
‹Town›
‹County› ‹Post Code›

It really is that simple! Of course you have to create the database first – and that is what Micro Base is all about. It looks very similar to Micro Text, although the shade of blue used is slightly lighter. Far from being frivolous, this can tell the user at a glance which one is in use.

The main screen presented at a start-up shows four buttons defining the main options of the program, these are: Edit – edit an existing database; Create – create a new file; mask – create a new framework for a database and Format – format or initialise a new floppy.

The first thing on creation of a new database is the creation of a mask or framework in which the data will be stored.

Micro Base uses four types of field: A Text field – this can be any size and contain ASCII characters; a Key field – this is just a text field but is used to speed up sorting operations – in a database of addresses peoples surnames would be the key field;a date field – this is a preformatted box designed to allow dates in the form 24jan1989; a Numeric field – this is fixed to numbers in the range 0 to 99999999.99999.

In themselves, fields and field labels can be displayed in any mixture of plain/bold/underline. This allows the designer to show specific entry points or, perhaps, highlight say a persons name.

Once the mask has been created and saved, it is time to create the database. This is very simple but tedious – not a fault of Micro Base, data entry is a thankless task a the best of times. Before the data is saved though it is a good idea to sort the database into some kind of order thus making specific items easy to find. The 'sort' is not the fastest I have come across buit reasonably good nethertheless.

Finally the last and best option in Micro Base is the label printer. This is another thankless task that can take ages. Imagine trying to send a mailshot out to several hundred different people! Assuming their addresses were all stored on the database, it is very simple to set up a print run of labels and mail merged letters – so every one looks as if it was written individually.

As a cheap ready-to-run system. Micro Base and Micro Text are unequalled in the Amiga field. They are far from perfect, but what they lack in style they more than make up for in value for money. In these days of rising software prices they are pitched at a level which no-one – teachers, small business or private users can afford to ignore. The packages are available separately but the two work extremely well together. Definetely worth a closer look.

M.S.

Product: Micro Text and Micro Base
Price: £19.95 each (See special offer on page xx)
Contact: Anco

Micro Text
Positive points: Superb value for money, well designed, fully integrated, basic WYSIWYG in preview.
Drawbacks: Non-standard, lack of on-screen formatting, NTSC display on PAL systems.
Micro Base
Positive points: Excellent value for money, easy to use, clear display, integrates completely with Micro Text.
Drawbacks: NTSC display – not resizable, crude search ability.

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Amiga Answers

We receive hundreds of letters every week giving us helpful comments – both praiseworthy and critical. In this month's Amiga Answers, Paul Andreas Overaa talks back!

Dear AUI,

Firstly, thanks for a very informative and interesting magazine. Now down to business, I would appreciate it if you could tell me whether it is possible to connect a Plotmate A3M plotter to my A500 for use with programs such as Aegis Draw.

Secondly, I also have some advice to any Amiga owner concerned about the sound quality produced by their machine. I was unaware that my Amiga sound was not up to standard as otherwise my Amiga functioned perfectly. I then heard some samples on a friend's Amiga and was astounded by the clarity. I discovered my power supply was faulty and had it replaced, curing all my sound problems. I hope this may be of help to any Amiga owners.

Yours faithfully,

R S JONES, GWYNEDD, WALES.

Dear Mr. Jones,

As with printers, plotters need software drivers when used with most software, and unfortunately your plotter is not one that is directly supported by the Aegis Draw range of products. However, as with printers where Epson is the standard, there is a standard for plotters. In the case of plotters the standard is Hewlett Packard, all of whose plotters use HPGL (HP Graphics Language). Therefore, I would suggest that you try your plotter with the drivers provided to see if it will work.

Dear AUI,

Christmas, an Amiga at last, no manual, a dodgy space bar, but Carrier Command, Starglider and a thick black border along the bottom of the screen. So not only will I have to put up with ports over from the ST, but software that is not even compatible with the PAL display! Your screen shots showed a full screen for Carrier Command, are all your reviews as flattering? Are there any prospects for an improvement in the above situation, given that the ST is still outselling the Amiga by quite a margin in the UK, and there is little incentive for US programmers to write PAL versions? Perhaps both these irritants could be given prominent space in your magazine, or will you choose to ignore them to avoid "rocking the boat"?

My second question concerns the new chip set. I read in Amiga Computing their specification, which includes new screen modes of 320 by 512, 640 by 512 and access by the custom chips to one megabyte of memory. However, in your interesting interview with Jay Miner he mentioned that Aliga had developed a chip set which can produce a display of 1024 by something, two megabytes of chip RAM and which will be capable of using video RAM. Do you think the latter chip set will be used to end or extend the life of the Amiga at some future date?

Yours faithfully,

DAVID FOULKES, PRESCOT, MERSEYSIDE.

Dear David,

ECS or the Enhanced Chip Set was announced in the middle of last year by Commodore. As well as supporting all the current video modes it will also support a 640 x 512 non-interlaced resolution with 4 colours from 64 capable of being displayed. The major drawback is that you will need either a Bisync or Multisync monitor and more importantly you will also need the 1.4 version of the system software. 1Mb of chip RAM will also be available.

Dear AUI,

Before I say anything else, I must congratulate your magazine and staff for the excellent service. It could teach some others a few lessons. I have one magazine in mind, namely Personal Computer World. I have been trying to get a subscription from them since last October (yes October!!) and have, I reckon, spent the price of the subscription in phonecalls. No such problem with you.

I am so very pleased with my Amiga since I bought the business system last April, upgrading from a Commodore 64. I recently added 512k of memory and , money permitting, would like to buy a second disk drive. I have had some great fun with the CLI and have managed to create "boot" versions of Scribble!, Organize! and Analyze! (supplied on the Works! disk free). They're a little sloppy, but do save the hassle of loading Workbench first. Now to my queries:

(A) I would like to know if TurboPascal will run under the Emulator. I am doing a course and the course is based around TurboPascal, so no point recommending an Amiga version (can't afford it). I bought, secondhand, Version 3 of TP and only have it on a 5.25" disk. I have the use of an XT at work, but on Saturdays only. I will getœit copied to 3.5" if you say it will work on the Emulator.

(B) Is there a good adventure creator (like the Quill, or GAC, both of which I got great fun out of) for the Amiga? I rang Incentive, when I saw STAC for the ST, but they said they had no intention of releasing an Amiga version. I have a PD system from 17-bit, but it is awkward to use.

(C) On the front of the keys on the numberpad are things like PrtSc, ScrL, etc. Since they do not correspond to

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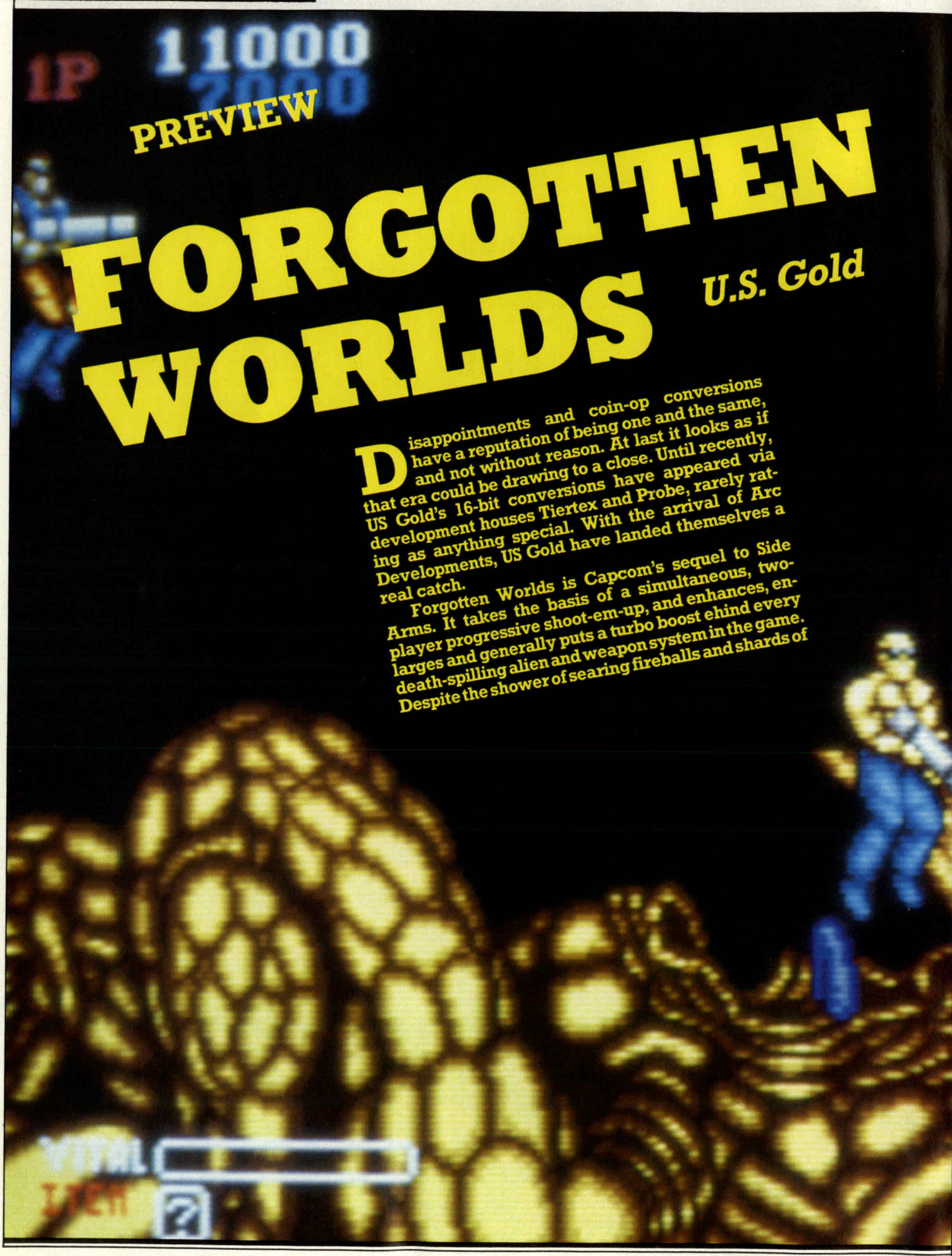
PREVIEW

FORGOTTEN WORLDS

U.S. Gold

Disappointments and coin-op conversions have a reputation of being one and the same, and not without reason. At last it looks as if that era could be drawing to a close. Until recently, US Gold's 16-bit conversions have appeared via development houses Tiertex and Probe, rarely rating as anything special. With the arrival of Arc Developments, US Gold have landed themselves a real catch.

Forgotten Worlds is Capcom's sequel to Side Arms. It takes the basis of a simultaneous, two-player progressive shoot-em-up, and enhances, enlarges and generally puts a turbo boost ehind every death-spilling alien and weapon system in the game. Despite the shower of searing fireballs and shards of



slashing steel, the two heroes enter the battle to-pless. A wierd new kind of control mode gives you sixteen directions of fire with the full roam of the screen.

As you can see, Arc Developments are no novices when it comes to graphics. None of those fancy

borders and scaled-down scroll windows here: what you get are two planes of overlaid parallax scrolling across the entire NTSC screen. On top of that you can expect a swarm of aliens and missiles, laced with guest appearances from humongous mega-monsters.

Programming is in the final stages, but unlike some exclusive-obsessed mags, we will only pass judgement on the version you buy. Make sure you don't miss the next *AUI* for the full story on the complete game.

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Preliminary Turbo Pascal

by Graham Beaumont

Published by Kogan Page in association with the National Extension College, 'Preliminary Turbo Pascal' has been designed as the first part of a self contained course aimed at those wishing to learn about Turbo Pascal.

It is a clearly written book specifically aimed at readers without any formal exposure to the world of computing. The book makes a point of identifying many of the basic general programming principles common to all languages; subsequently the early pace of the book is slow with the initial chapters dealing with the importance of program design, the use of diagramming techniques to represent the various parts of a problem, and the ideas related to structured programming. The O/S, editor and compiler environment is introduced with the first real signs of Pascal programming coming in chapter three where some straightforward assignment and I/O examples are provided. Later chapters deal with flow control, e.g. IF–THEN–ELSE, CASE selection etc., and the use of procedures and functions etc. The emphasis provided within the book makes it essentially an introduction to programming within the Turbo Pascal framework rather than just an introduction to Turbo Pascal itself.

'Preliminary Turbo Pascal' is not therefore aimed at readers who are already computer literate and just need to learn another language. It is intended audience is the newcomer who wishes to learn how to program and wishes to do so using Turbo Pascal. For this latter audience the book is particularly recommended. The book covers the fundamental problems of the 'program design' process clearly, and it introduces the reader to the world of Pascal programming. The book contains plenty of self assessment questions (with answers) and is definitely one of the best introductory texts I have seen for some time.

P.A.O.

Price: £14.95, ISBN 1-85091-744-2, Kogan Page Ltd.

Proceeding with Turbo Pascal

by Graham Beaumont

This is the second of Graham Beaumont's Turbo Pascal books. As expected, the overall format of this book is similar to the first although there is substantially less emphasis on the use of the structure diagrams which were so prevalent in the 'Preliminary Turbo Pascal' book.

The text is pitched at a slightly higher technical level than the first offering: After a brief 'what you should know before you read this book' excursion, the book spends some time explaining about Pascal's data types and the importance of 'type checking' before explaining and giving examples of the practical uses of scalars, arrays, sets etc. The examples are more involved and include a reasonable implementation of C. A. Hoare's recursive 'Quicksort' routine. Towards the end of the book the use of records and files are dealt with and a few simple database routines are developed to illustrate the important ideas.

This second volume contains more technical information than Pascal, some well presented examples, plenty of self assessment questions, and in general far more to get your teeth into. There are certain differences between Borland International's Turbo Pascal and offerings such as UCSD and the ISO standard Pascal - most of these differences relate however to advanced Pascal facilities, so they are not particularly significant as far as the material presented in either this book or the preliminary companion volume goes.

Turbo Pascal is, for many people, almost a 'defacto standard' nowadays... it is available on everything from CP/M 80 and CP/M 86 machines, to PC-DOS/MS-DOS based IBM PC's, Amstrad 1512's.... and, of course, on an Amiga with the BridgeBoard fitted - so there's quite a large potential audience. Taken together the books provide a good introduction to both Turbo Pascal and to computer programming in general.

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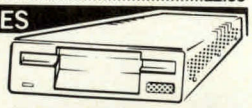

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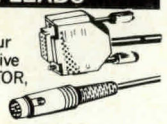

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STEVE DAVIS WORLD SNOOKER

CDS

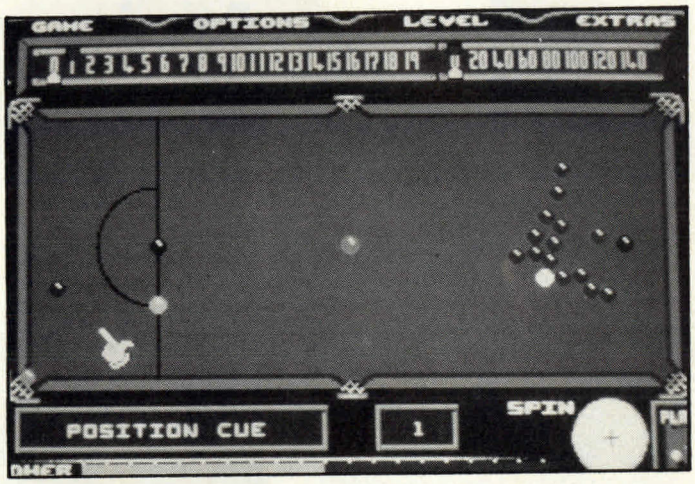
Snooker has never been a sport to set the adrenaline pumping, and Steve Davis is hardly a showman, but I have always had a soft spot for computer snooker simulations. Both originally written for the Spectrum many years ago, CDS Pool, followed by Steve Davis Snooker set the standards. Moving up into the league of World snooker, Steve now puts his name to the Amiga upgrade.

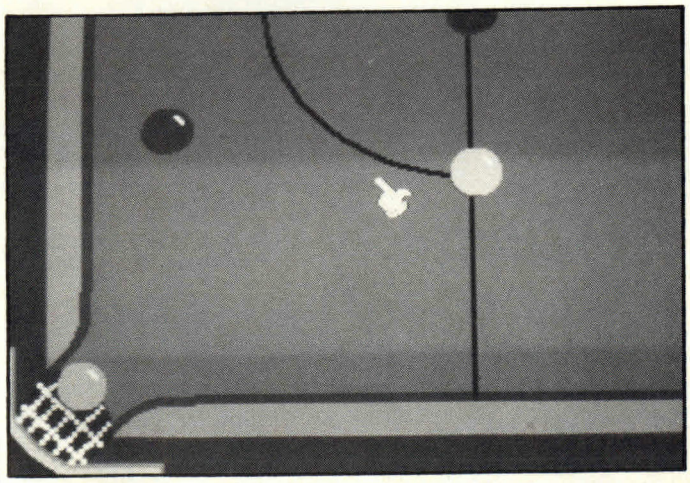
Evidently the main program accomodates little of the computer's memory. A luxuriously long sample of the BBC's snooker theme plays as the game loads, and leaving it to itself for a while brings on a few digitised snapshots of everyone's favourite player. Despite the title, you actually get five games in one: snooker (with ten or fifteen reds), UK pool; US pool; UK billiards; and carom billiards. Skill levels for the one player vs computer mode range from

"Play against the man himself and you will witness some amazing pots."

amateur through to Steve Davis. Play against the man himself and you will witness some amazing pots. His only weakness is an ignorance of positional play.

Shot selection follows the same procedure no matter which game you choose. Using a mouse-controlled pointer you direct a short line from the cue ball in the direction of the shot. This can cause a slight problem in tight situations as the line is not drawn from the exact centre of the cue ball. Set the speed and spin (screw, top or side), and the shot is played. If you pot a ball you can see it again in slo-mo. Score is marked up on a traditional board, and a digitised referee puts in occasional comments after foul shots. You can force your opponent to replay if he fouls by pressing "R", though the instructions leave that out for you to discover yourself.





The king of charisma, Steve Davis, has brought all the excitement and thrills of his unique style across to the computer game. Yes, the game could seem mundane to some, and it must be said that it makes few *real* advances. Still, I like it all the same, and with all those optional extras it should enjoy a longer than average life span.

T.H.

Graphics: 5
Sound: 6
Playability: 7
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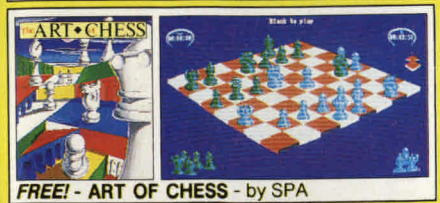

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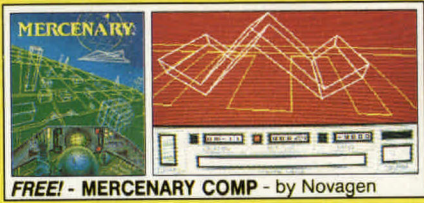

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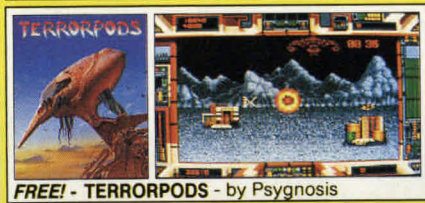

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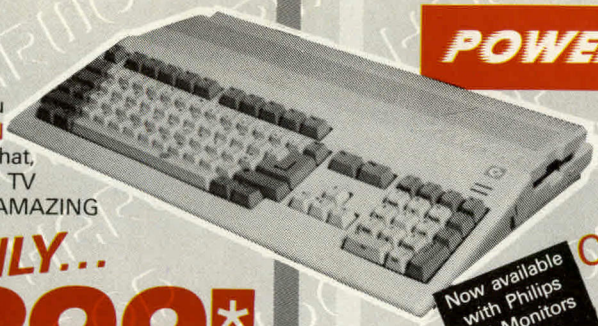

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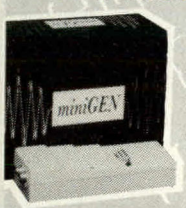

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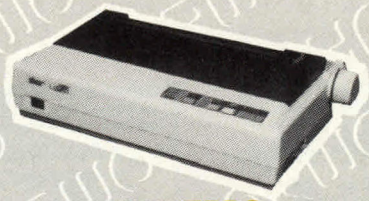

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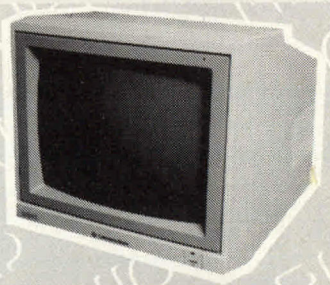

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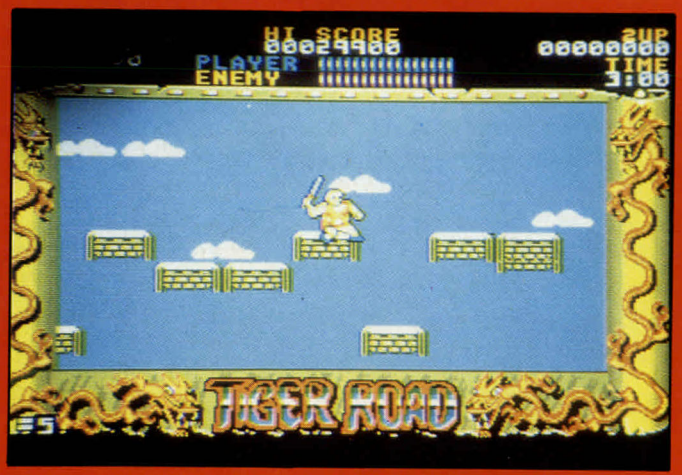
TIGER ROAD

US Gold

When news reached you of the return of Ryu Ken Oh and his kidnappig antics, you knew there was only one man for the job. If these kids are not to be brainwashed and put into Ryu's army, something has to be done.

The oriental bully has really gone to town on his security systems. No surveillance cameras and laser trip-wires here; Ryu's security comes in the form of an army of loyal warriors. Squat samurais guard the entrance to the stronghold, cautiously slashing at intruders as they approach in small gangs. A quick whirl of your razor sharp mace sorts out these indecisive little characters.



Shades of Donkey Kong show through once you get inside, where the guard on the door to the next level starts rolling barrels down the corridor. Throughout the levels the basic gameplay is the same: chop the baddies and jump the chasms as you make your way to the exit. Predictably the enemies get bigger and harder as you progress, and the graphics improve with them. There are some interesting and original foes lurking in the deeper chambers, such as the skull that swallows up piles of bones, and the freaks that drift down the screen inflating to bursting point. There is a brief diversion from the run/chop action as your character sprouts wings and takes to the air in a short vertically scrolling section.

As US Gold's coin-op conversions go, the scrolling is smooth, but as usual is limited to a reduced window with a space-filling fancy border. The hero of the game is strangely one of the weakest sprites in the game. In contrast some of the monsters you get to bash are on par with the coin-op, with backdrops to match.

Rather than a martial arts game as it is described on the box, Tiger Road is far more an oriental version of Ghosts 'n' Goblins. The platform combat mix is easy to pick up and very playable in the short term. I have doubts about its lifespan, as there is nothing much new in the gameplay. But as first impressions are not too favourable, stick with it, and you will be glad that you did. Tiger Road is by no means the neatest or most original of games, and it is certainly not cheap, but I thoroughly enjoyed it all the same.

T.H.

Graphics: 8
Sound: 9
Playability: 7
Value: 6
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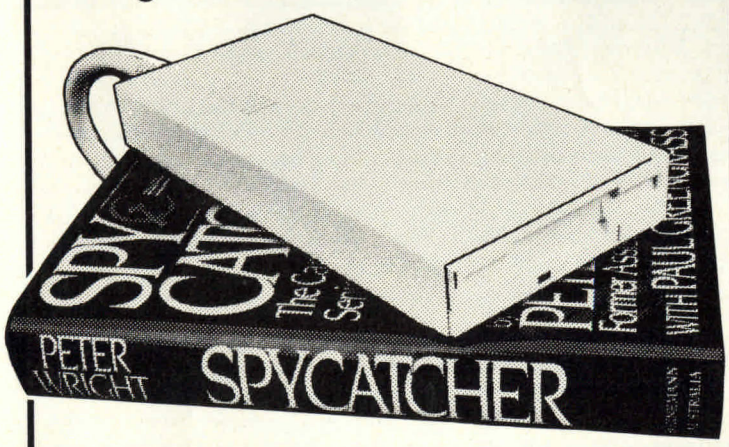

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MINIGEN

Finding the key to some amazing video effects, Peter Lee gets animated about a low-cost genlock device.

There comes a point in every computer animator's life when simply seeing graphics on a monitor just isn't enough. In the early experimental days, booting up a display and admiring it was probably enough. But as the sophistication of animation and titling packages grows, so too does a desire to do something more with these hard-earned images than watch them fade and die on some VDU.

In my case I invested in a RGB splitter, which plugs into the Amiga and sends out a video signal which can be fed directly into a video recorder. And very good it was too - but still not the stuff creative video is made of.

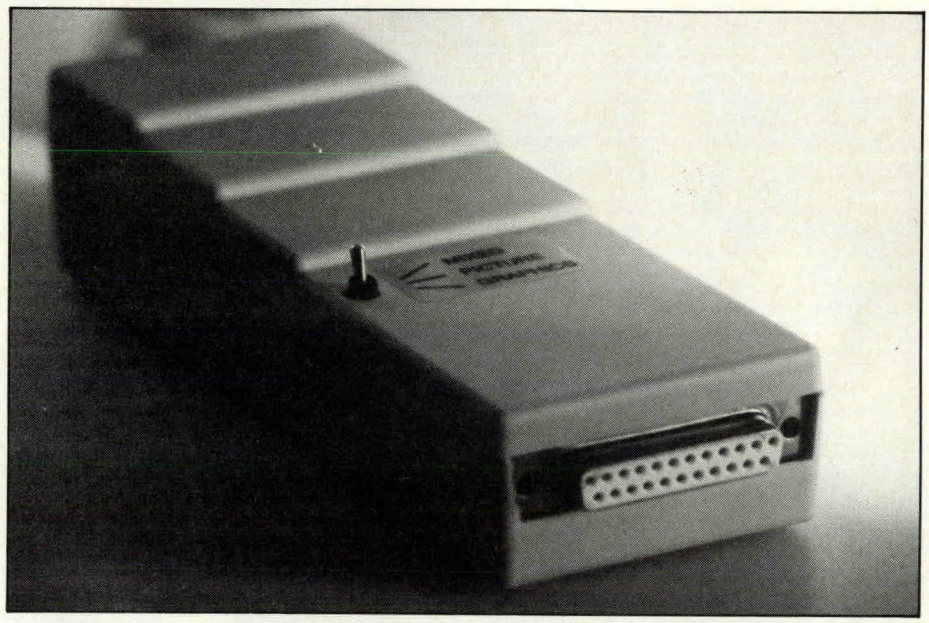
Then the world of genlock opened up - a system of overlaying computer graphics onto incoming video signals, and combining the two for output. The future had arrived - but at what a cost!

The pricing of genlock devices varies considerably, and is was not until the arrival of **MiniGen**, from Applied Systems Developments Ltd, that the technology hasten offered at more or less a hobbyist level. With it just over a hundred pounds, home enthusiasts are able to taste the thrill of creating professional-looking sequences.

Before you consider rushing out and adding a **MiniGen** to your collection of peripherals, a word first about the set-up you will need. Firstly there has to be an incoming video signal - I use a Sony Handycam, but a VCR will do fine. You then need a VCR to record the combined input and computer image, so people without a video camera will need two VCRs.

"I found the easiest remedy was to take the VCR's video out signal and pass it into the monitor's composite video in socket"

No leads are supplied with the unit, so these need to be bought; the **MiniGen** has two connections - video in and out, and has a three way switch for toggling the output from either computer, video in, or the combination.



The beige-coloured plastic unit is 15.5cm long, 5.3cm wide and has a maximum depth of 3.75cm. The length is a real handicap, however, because the 23pin connector which fits into the RGB socket of the Amiga is right on the end, requiring a 16cm gap at the back of your computer. As my A1000 is pushed against the wall, a degree of re-arrangement was necessary - until I made a short extension cable for the socket. As this port is also used by the monitor cable, the monitor is no longer connected, so I found the easiest remedy was to take the VCR's video out signal and pass it into the monitor's composite video in socket, switching the VDU to CVBS on the front panel.

While the image quality is not as good as the RGB output, it is satisfactory for monitoring the signals, and in my experience worse than the actual finished product, which far exceeded my expectations.

There was a certain loss in image sharpness, which I had expected, and the choice of computer graphic colours was critical in ensuring a minimum of colour crawl on the output recording.

Bright reds and blues cause havoc, but by reducing their intensity by around 20% the recording was improved considerably. And to my pleasant surprise I found that medium resolution gave very good results, even with text which on a pin-sharp monitor has unsatisfactory jagged edges.

MiniGen is also clever enough to detect when no composite video input signal is present, and defaults to the Amiga-only mode of operation.

Seeing a genlock screen for the first time is a memorable experience - the incoming signal replaces colour 0 anywhere on screen. This fact has to be borne in mind when designing your overlay effects - a number of my early animation sequences were unuseable because I had used other colours for the background, and these just blotted out the incoming live video signal.

But it is something with which you soon come to terms, and by using the right software, something which can create mesmerising special effects. As far as your software choice goes, a bewildering choice of animation and effect options open to you.

One thing to bear in mind is that your outgoing signal shows the entire screen, regardless of the size of any window you may be using. So unless your preferred package supports an overscan mode you should be careful not to let your animation look like it is performing in a smaller area - don't have any boundaries to your screen artwork or have a patterned backdrop, instead

continued on page 57

commodore

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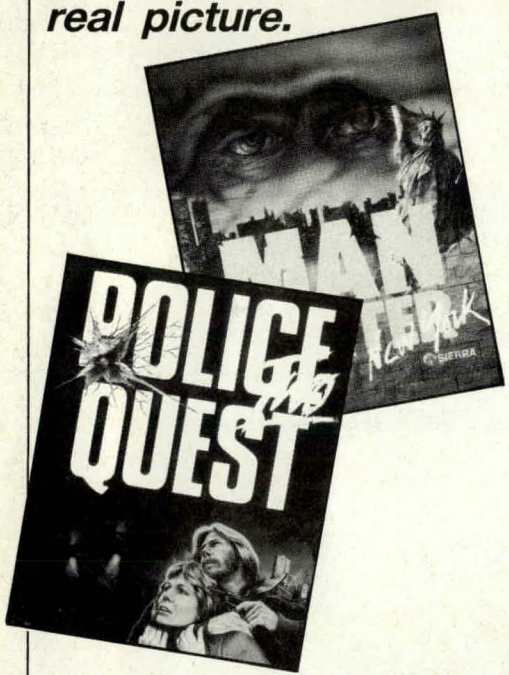
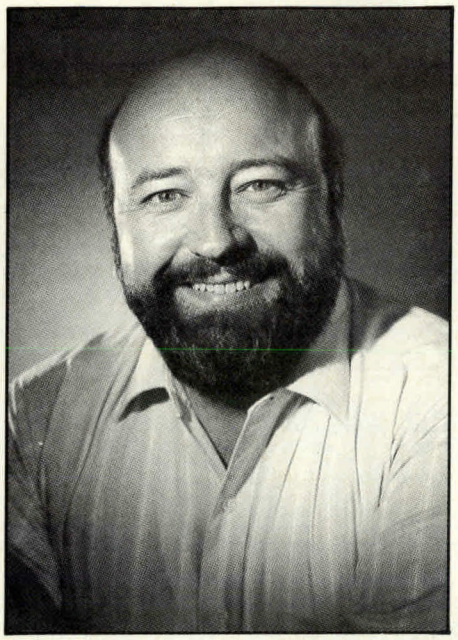
A TRIP TO THE ...SIERRA

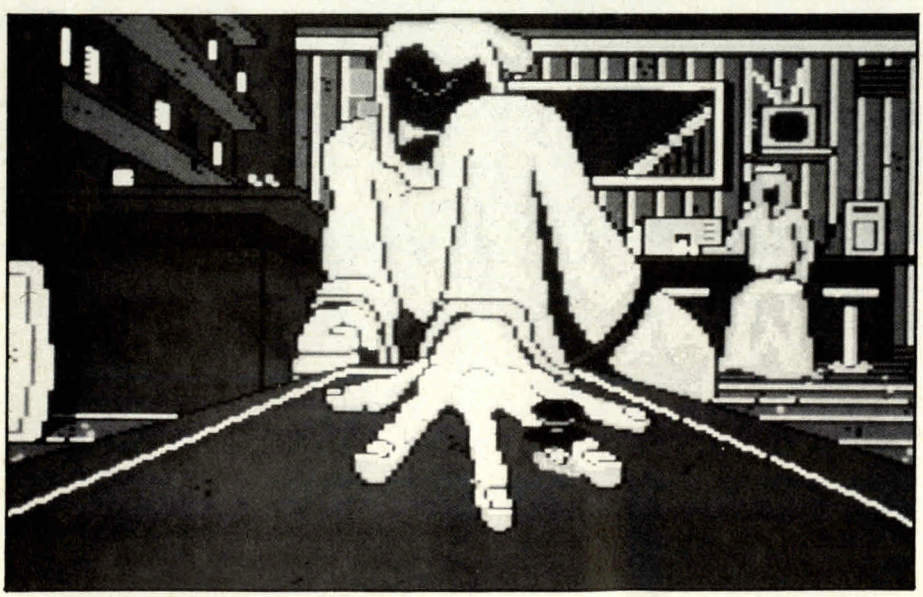
With a claimed 14% of the entire U.S. 16 Bit market, Sierra reckon they know a thing or two about graphic adventures. Andy Moss talks to Al Lowe, Sierra's own lounge lizard to get the real picture.



One thing you can always expect from Activision when they lay on a press conference, is the unexpected. This interview took place in the middle of the Thames, aboard a battle cruiser that had seen more action than Leisure Suit Larry could ever wish for.

Sierra On Line are in town, the company famous for the KINGS QUEST series of 3D animated adventures. These are a unique blend of text and graphics that allow the player to move in front of, behind or around objects on screen. Following the heady success of Kings Quest, Sierra followed up with more award-winning titles such as the SPACE QUEST SERIES, POLICE QUEST I and II, LEISURE SUIT LARRY I and II, and MAN-HUNTER. The formula is the same each time, good plots mixed with enough puzzle-solving to keep the hardiest adventurer at his monitor, and bags of humour.





The company's founders Ken and Roberta Williams soon realised the potential in 16 Bit technology back in 1984, and took the bold step to concentrate solely on that market. The gamble paid off, and startling progress was made in developing a unique custom-made writing system that would plant the company at the forefront of computer technology. This tool has proved to be Sierra's greatest asset, by allowing programs created on an IBM MS DOS system to be run on any number of other 16 bit machines without having to develop an entirely new and different program. They simply run their program through a little black box and voilà ... instant new code for Amiga, ST, Mac etc. What this means is that the programmer doesn't really have to know which computer he or she is developing for, foreign languages can be supported, including Japanese, I am reliably informed, and as the system uses English commands it can be operated by people with no programming experience – just creative flair.

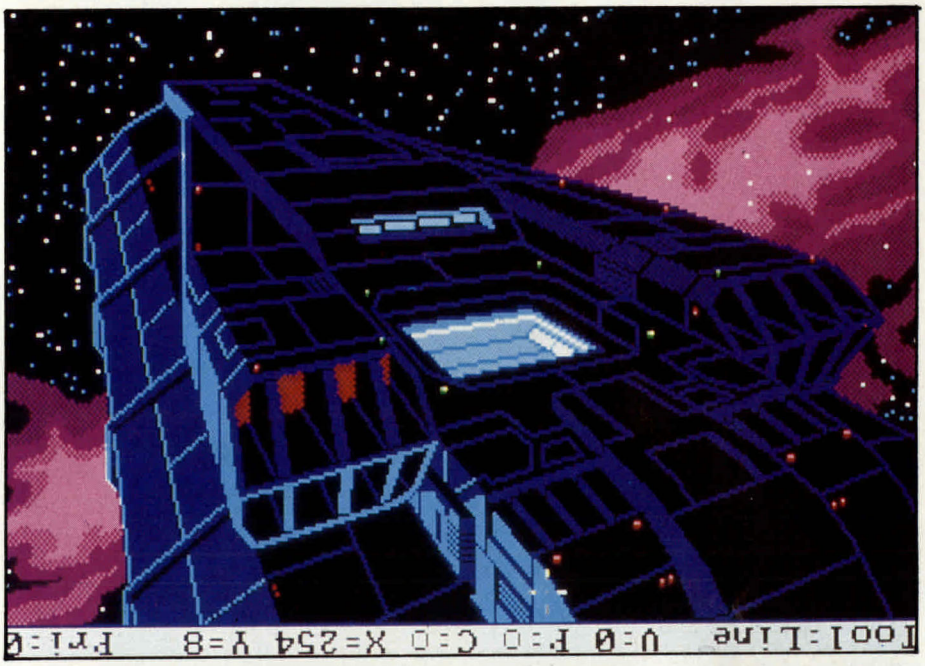
The investment in SCI (Sierra Creative Interpreter) is currently around 9 million dollars which represents a hell of a lot of computer games sold to pay for it. But as Rick Carrin, head of Product Development, says, "Our policy is simple. Excellence in everything is the only way to satisfy our customers. We give them what they want. Listen, every one of our artists and musicians have formerly been in the film business. We have guys who worked on Star Wars, Raiders of the Lost Ark, real talent that feeds on our technical expertise."

There is no denying, the people at Sierra are keen on the hard sell, motivating and impressing all and sundry. So when I spied a rotund balding guy by the name of Al Lowe quietly surveying the assembled throng, I took the opportunity to sit down with him and find out more about the inventor of the notorious Leisure Suit Larry.

"Basically, I'm a lot like Larry." says Lowe "Try working with this face and this lack of hair and you'd develop a sense of humour too". Al has been with Sierra since 1982, after spending 16 years as a School Band Director and co-ordinator, putting his Masters degree in music to good use. Though his life was not as adventurous as that of his alter ego Larry, he includes quite a bit of his own experiences in the games. "You see, to write a good game, there has to be a degree of true life, the player really has to believe that what he is playing could happen. I have made Larry II much more linear than the first, to really let the players become involved in the game in all the bits I want them to." At this point Al becomes very animated. "Larry is a loveable guy, he just wants to have fun, but keeps getting into situations that are beyond his doing. When Larry gets killed, I mean, that is a scream, the death scenes are the best bits, because OK you screwed up, but hey, if it's funny, you'll enjoy dying".

Coming from a long line of adventurers who hate getting killed I am not sure agree with him! Larry III is on its way, along with a female version called Polyester Patty, and Lowe is confident that his characters will run and run. "The end game of Larry takes around 10 minutes of play, it's got to, if you want to get the satisfaction of completing it through, and I want our customers to understand that. Have fun, enjoy it and you'll get the next one ... I hope" he says with a huge grin.

I came away from my meeting with Sierra impressed. Not only with their obvious technical commitment, but with their genuine desire to improve adventure entertainment. And that can't be a bad thing at all can it. ***A.M.***



MINIGEN

continued from page 54

have it displayed on a standard colour 0 background.

Obviously the professional packages have the edge for the greatest sophistication - software such as the new Video Effects 3D comes into its own with genlock - but there are some outstanding products at a more realistic home-user price; the Zuma TV*TEXT is an undemanding example, and Aegis' Animator (the PAL version) can still be called on for some impressive metamorphic animation coupled with image displays.

Failing any of those, you can simply opt for inputting text and images using Deluxe Paint, and showing the resulting sequence of screens in one of the freely available public domain slideshow utilities, or if you need more sophistication, trying a good effects displayer such as Lights, Camera, Action, which gives a solid base for some pretty clever transitions.

The incoming video picture should be chosen with the addition of titles in mind. A day's outing should start with a longish opening shot setting the scene, allowing you enough time to mix in the title and credits. The text to be overlayed looks better if it has either a shadow or a thin contrasting outline, to make it more readable against light or dark scenes.

"After the titles have been added, you can just sit back and wait for the transfer to finish, rather than pausing the process to make a direct video connection between the source and destination machines"

After the titles have been added, you can just sit back and wait for the transfer to finish, rather than pausing the process to make a direct video connection between the source and destination machines - the quality will be almost as good (a keen eye might spot a difference) rather than pause and re-start, with the possibility of a noticeable edit after the titles.

MiniGen comes with a disk containing a couple of nondescript demonstration foregrounds, and a manual which looks like a child of seven photocopied it.

But all the information is contained in its slim pages.

CONCLUSION

MiniGen opens up a new and exciting world of video wizardry for the home enthusiast at an affordable price. The drawback is that you will need either two video recorders, or better still one recorder and a video camera - though cameras are not as uncommon as they once were, and High Street TV rental firms do hire them out. Some kind of titling or special effects software package would also seem a necessity. I was extremely pleased with the results when transferring from my Handycam to a second-hand Sharp VCR. In my opinion, at this price for **MiniGen** it is money well spent. ***P.L.***

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Contact: Digipro Ltd, Enterprise House, Howard's Grove, Shirley, Southampton, S01 5PR (Tel 0703 703030).

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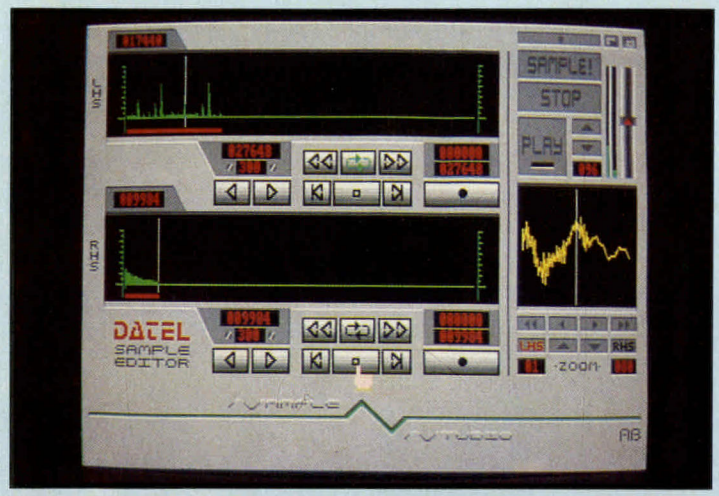

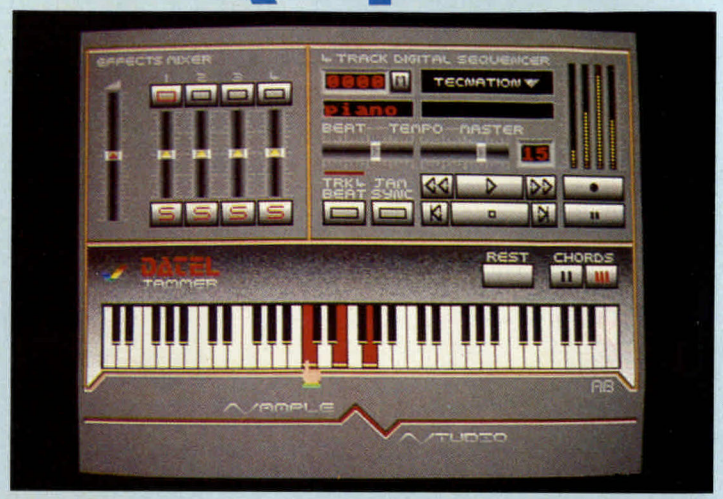

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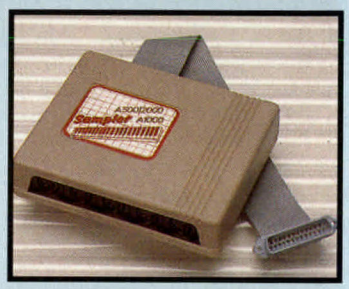

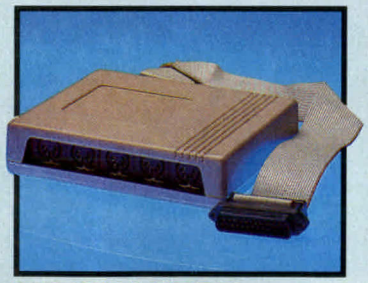

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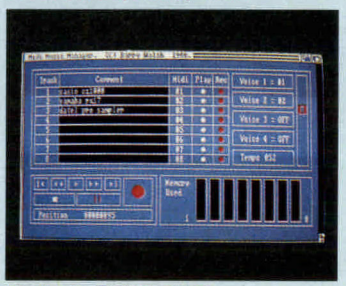

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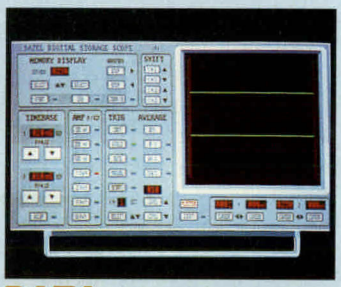

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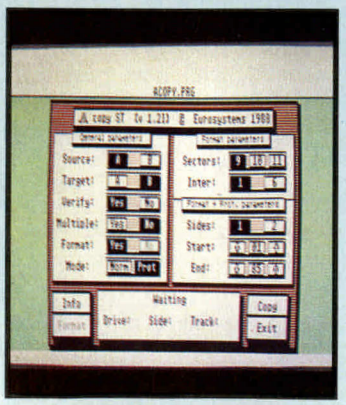

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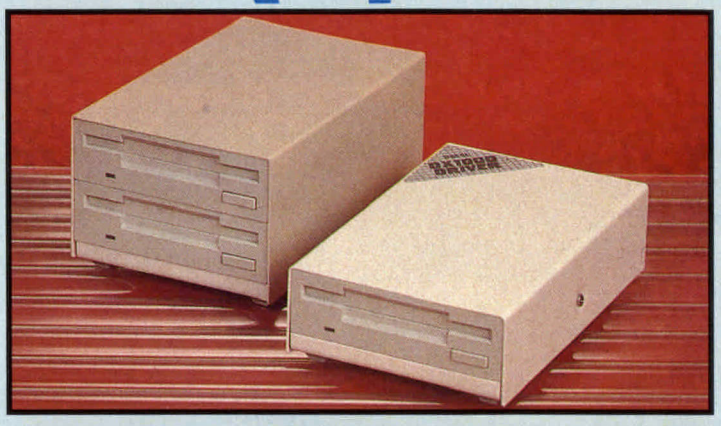

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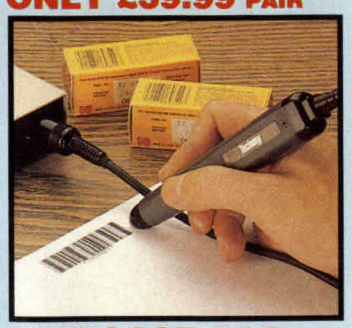

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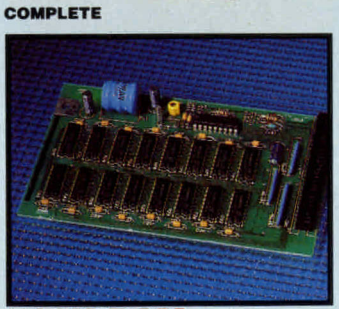

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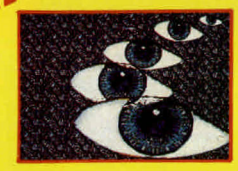

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Amiga Answers

continued from page 40

anything in the Emulator manual, are they merely for show, or can they be accessed, and if so how? (Do you understand or am I being obtuse?)

(D) I make backups of everything I buy (where possible). At the price of some programs, you can't afford not to (and they are very expensive here!). I also backup data disks, if it's important. I am considering buying a package of 100 disks, but wonder about buying unbranded – cheaper but unreliable? Can you advise? Will any DS/DD disk do for the Amiga? If I do use the Emulator, will DS/DD disks be suitable for storing programs and data?

Some comments. I want to thank 17–bit software for their prompt service. Why is C so expensive, yet you need it to really use the Amiga? Someday I will buy a hard disk! Excuse the longwinded letter.

Yours sincerely,

JOHN G McGERR, CO. LONGFORD, EIRE.

Dear John,

(A) Turbo Pascal will run under the Transformer PC emulation for the Amiga. However, it runs very slowly and will only allow you to produce

text based applications; no graphics calls will work.

(B) There is a graphic adventure creator called Stuart Williams Adventure Creator. Published by EA.

(C) The keys on the numeric keypad can be used by any program which has been programmed to access them. For example Word Perfect for the Amiga uses them for cursor control within a document.

(D) In my experience unbranded disks are on the whole reliable. However, it has been known for there to be completely bad batches of them. So, if your data is very valuable to you I would say that the extra money is worthwhile for peace of mind provided by branded disks.

Dear AUI,

Help! I just cannot seem to get the required SetMap, hard as I try. The problem is that some of the keys do not show the symbol or character that is printed on them. For example, when I press the @ key I get " instead and when I press the #@ key I get # instead. I've tried to change the SetMap but I just cannot get anywhere. Can you help?

Yours sincerely,

Frustrated of N16.

K BANKS, LONDON.

Dear Mr. Banks,

In fact, it is the KeyMap that you want to change and not the setmap. To do this you must use the program SetMap to change the KeyMap in use to the gb version, which will then correspond to your keyboard. This can be achieved in two ways:

The first way, which is the most simple, is to use the WorkBench. In order to do this you must first boot your machine with the WorkBench disk and open the System drawer. In there you will find the SetMap program, click on its icon once to select it (it will change into its inverse colours to indicate this). Then go to the WorkBench's Project menu and select the Info option. This will bring up a large window with some details about the program. In order for it to change the KeyMap to gb you must add a "Tool Type". To do this click on the "Add" gadget at the end of the Tool Type's requestor. You will then get a cursor and you must enter:

KEYMAP=gb

Be careful to use capitals for the word KEYMAP as otherwise it will not be recognised. When you have finished click on the SAVE gadget to store this information. All you have to do then is double-click on the SetMap icon to run the program and your gb KeyMap will be selected.

The above method does work, however it is inconvenient as you must run the SetMap program every time you want to use the gb KeyMap, which I would predict will be always! Thus we need a permanent solution:

For this solution we will need to edit the "startup-sequence" on the WorkBench disk. First open a CLI or SHELL (if you're using 1.3!) window. Then type:

ed s:startup-sequence

This will invoke the Amiga's screen editor and call up the startup-sequence for editing. You will see a window with a list of CLI commands in it, the cursor will be at the top. To move down the list use the down arrow key, when you get to the line:

LoadWB

put the cursor on the first "L" and press the return key to insert a blank line. On this blank line type the following:

system/setmap gb

Thus the KeyMap will be changed everytime the startup-sequence is executed, i.e. everytime you boot with the WorkBench disk you have modified. All that remains to be done is to save the file and exit the screen editor. To do this first press the "Esc" key, and the cursor will appear at the bottom of the screen after a "". Then type the letter "x" and press return. The window will close and the file will be saved to your WorkBench disk. Re-boot your machine and you will see when you call up a CLI window that your gb KeyMap is already installed!*

Dear AUI,

I have been following your "Amiga Answers" all last year and I am impressed with the effort you go to in answering questions. I buy Amiga User from our local software shop (they get it airmail) for NZ$15. I am one of those people who buy pioneering hardware (makes Commodore happy but I am not too sure about me) and I have the West German 2000 or A2000. It has a memory board (with wire jumpers) with 1 meg of RAM giving me 1.5 meg in all in the co-processor slot. I have seen the 2000 Technical Manual and realise that there are some differences between the A2000 and the B2000. Could you answer the following questions?

(1) Can the video slot in the A2000 use the Microway delacer?

(2) Is the A2000 motherboard the same as the A1000? The A2000 has the ordinary Agnes.

(3) I noticed comments in the Amiga Transactor magazine that the early boards (4.1) for the B2000 had poor video output due to overly large ferrite beads. As I have the original rev 4.0 (not used in the B2000), will the A2000 have the same problem?

(4) If Commodore brought out a 1 meg Fat Agnes will I be the same as the A1000 owners and not be able to fit it in?

(5) Any comments on the A2000 vs the B2000?

I hope you can answer these questions and thanks in advance.

Yours sincerely,

KEITH STEWART, NEW ZEALAND.

Dear Keith,

(1) Despite the differences between the A2000 and B2000 they have identical video slots, and thus the MicroWay Flicker-Fixer will work in both. However, there are two versions of the Flicker-Fixer one for NTSC systems and one for PAL. Be sure you get the correct one for your monitor!

(2) No, the A2000 mother board is nothing like that of the A1000. The A1000 had no slots just an expansion bus on the right hand side. However, the custom chips used are the same on both.

(3) The poor video output on early B2000's refers to the Composite Video output, which of course is not available at all on a standard A2000. You can if you wish get a Composite Video card for the A2000's (or B2000's) video slot. It is made by Commodore and costs approximately £100.

(4) When the 1Mb Fat Agnes is made available as part of the Enhanced Chip Set it will not fit the A2000 or the A1000.

(5) A2000 owners have been put in the unfortunate position of having the expandable, open ended member of the Amiga family, which will now unfortunately not be suitable for use with some of Commodore's planned enhancements. Commodore have not as yet announced any upgrade deals for disgruntled A2000 owners, I think they would be well advised to consider doing so!

PD – FREE GRATIS AND PRACTICALLY FOR NOTHING

Stuart Williams tours around the George Thompson Services PD Starter Pack

There seems to be a fashion for 'starter packs' among PD Libraries today; many PD libraries are trying their hand at compiling a selection of disks intended to cover a broad base of interests, from the first time user to the experienced programmer.

This month I'm examining a set of discs provided by George Thompson Services of Arran, Scotland. GTS have been on the Amiga PD Library scene for quite a while now, and are one of the biggest and best known suppliers of the 'Fish' series of Public Domain and Shareware compilation disks in the U.K.

Where 17 Bit Software have a reputation as suppliers of 'fun' PD as well as useful utilities, George Thompson Services have until recently been seen mainly as suppliers of PD intended for the 'serious' Amiga user; certainly, although the Fish library does contains games and demos, it is largely of interest to the Amiga owner interested in finding out more about the computer, learning to program it, and using it to its best advantage. As the Amiga has become more popular, a wider market of first-time Amiga users has opened up, and GTS has reacted by increasing its coverage to include more and better games (see forthcoming review of their Mega Games Pack in this column), a wide range of the best Amiga graphics and sound demos, and a number of PD compilation packs, including the Starter Pack reviewed here.

The George Thompson Services PD Starter pack is bigger than the average starter pack! It consists of NINE discs, including the two disk PD Library catalogue set. The autobooting catalogue disks include lists not only of Fish PD and shareware disks, but also the interesting AMUSE, FAUG, and TBAG libraries, as well as a series of MUSIC disks (which consist largely of music demos and Sonix compatible files) and a number of SPECIAL compilations put together by GTS themselves. All these library disks make up a formidable collection - the Fish disks alone currently amount to a series of 172! In addition to the lists, the library disks also include a 3D game (red and blue spectacles provided!), and a lengthy plug for the Jumpdisk disk-based magazine including sample articles and art, and a catalogue of earlier issues.

Gold Fish disks 1, 2 and 3 (Gold Fish are compiled from the best of the huge Fred Fish collection of PD software disks), and Best of Amicus disks 1, 2, 3 and 4, are included in the Starter Pack. There is such a huge number of programs provided that I've listed some of the best of them below with brief comments:

GOLD FISH

Disk 1 contains a selection of some of the better games and demos that have previously appeared in the Fred Fish library.

CYCLES - Simple but effective game inspired by the 'light cycles' sequence in the film "Tron". Hardly inspiring stuff, but it should keep the kids quiet!

continued on page 64

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PD

GRAVITY WARS - The object of this tricky game is for one player to hit the other's space ship with a missile, before being hit in turn. Plays a little slowly, but requires concentration nonetheless.
ROT - Generates and displays 3D graphic objects. Includes both the object and action editors. Complex to use, but intriguing results can be obtained.
SHANGHAI - Demo version of the graphically pretty but generally underrated Activision mind game. Ideal for those considering purchase to get a taster before parting with their cash.
TRICLOPS - Spectacular solid 3D graphics alien invasion game. Previously commercial product. A little on the slow side, but looks superb.

Disk 2 contains a selection of communications utilities, as well as some of the more useful developers aids, such as a text editor, "make" utility, and reasonable shell. Some of the programs require use of the CLI, but that will not put off the serious Amiga owner - however, a second disk drive will prove useful!

Comm - An excellent terminal program, easy to use and containing all you need to log onto Bulletin Boards and Email services.
Compress - A file-cruncher which reduces the size of the files using Lempel-Ziv coding.
FixObj - A utility for stripping extraneous 'padding' from the end of object files transfered with xmodem - this is not required with Comm or any commercial programs I have used, as they have this capability, but some other PD terminals may cause this problem.
Kermit - Yet another port of the popular "C-kermit" program, a flexible but complex virtual terminal and file transfer program from Columbia University. Of most interest to University students and staff.
MG1b - Release 1b of MicroGNUEmacs,a small but powerful text editor - a relative of the editor inluded on your Extras disk.
Tracker - Converts a boot-load disk (ie a kickstart disk) into a group of files for electronic transmission and reassembly. Requires the same program at the other end.
UUencode - Programs to encode/decode binary files for transmittal via mail or other text-only methods. Popular with users of the JANET academic communications network system.
Vt100 - V2.6 of terminal emulator with kermit and xmodem file transfer. Interesting, but not as easy to get along with as Comm.

Disk 3 comprises a selection of some of the more useful (and complex) utilities for enhancing the Amiga software development and execution environment.
ASDG-rrd - Extremely useful shareware recoverable ram disk (especially if you're still on Workbench 1.2 - 1.3 has its own equivalent of this).
AuxHandler - Example of a dos handler that allows use of a CLI via the serial port.
ClickToFront - Extends the user-interface so that a double click into a window brings it to the front.
Cmd - Redirects the serial/parallel.device output to a file.
Commodities - Exec library which can be opened and used by application programs to gain access to input in a very flexible way.
DiskSalv - Recovers files from a trashed disk. Can also "undelete" files deleted by mistake.
HardCopy - Creates a hardcopy transcript of any CLI session.
IconExec & SetWindow - These two tools allow execution of a program from an icon without having to recompile the program.
IconType - Change the type of an icon after editing with IconEd.
ID-Handler - AmigaDOS device handler, that generates unique identifiers.
LowMem - Low memory server.
NewZAP - Multi-purpose disk file sector editing utility. Excellent.
PipeHandler - An AmigaDOS pipe device which supports OPEN, CLOSE, READ, WRITE, LOCK, EXAMINE, and EXNEXT.
PopCLI - Provides a simple way of starting another CLI at any time without having to load workbench or exit whatever program you may be using.
SetFont - Change the text font used by a workbench screen.
Spool - Consists of 3 programs: A queue manager, a printer driver, and a SPOOL request program.

BEST OF AMICUS

These disks consist largely of a varied collection of small utilities. They also include some demos and games.
Disk 1
Celscripts - For Aegis Animator.
Waveform - Sounds Workshop.
BasicGadgets - Tutorial.
Household - Inventory program.
FutureSound - Examples, utilities etc.
AutoRequester - Call from Basic.
IFFBrush2BOB - Converts IFF Brushes to AmigaBasic Bobs.
Synthesizer - Experiment with different types of sound.
RatMaze - 3D Ratmaze game.
PerfectSound - Software for Sound Digitiser.
DiskCat - Useful Disk Cataloque program.
Disk 2
ShowPrint - IFF picture file screen dump utility.
Txt - Read text files from other systems.
PrtDriverGen2.3 - Make your own custom Printer Driver.
DougieBase - Create your own Database.
ARC - File Compressor plus Tutorial.
HP10C - Binary, Octal, Hex, Decimal & Scientific Calculator.
Disk 3
Starchart - Displays & identifies approx 600 stars, galaxies and nebulae in the Northern Hemisphere. Does Patrick Moore have an Amiga?
Hockey - Card game.
MacGag - Liven up Workbench windows as they open and close.
RSLClock - Indicates free memory,time and date.
GOMF - Makes the Guru go away for clean shutdown. Predecessor of commercial version.
PopCLI3 - Start another CLI at any time.
ExtraHalfBright - Description of this feature plus Demo.
Disk 4
IconMaker - Builds icons for those files created without them.
DU4.3 - CLI manager for the faint of heart!
SpriteMaster - Design and Animate Sprites.
CLIinformation - Help with the main CLI commands using menus.
ConMan - Replacement Console Handler. Very useful.

Phew! Certainly, enough programs to keep any Amiga user busy for a while! There is no doubt that the PD Starter Pack represents remarkable value for money at £19.99. A good buy not only for the budding Amiga programmer, but also the new Amiga user looking for something to feed their micro without breaking the bank, or those not yet into the delights of the world of PD and Shareware software.

I shall be looking at more programs from George Thomspon Services over the next few months, so watch out for many more Public Domain goodies to come.
Contact: George Thompson Services, Dippen, Brodick, Arran, Scotland KA27 8RN. Tel. (077 082) 234.

S.W.

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Commodore computer show

Britain's brightest event for Commodore computer users is back! And there's more to see than ever before.

This show has three main themes covering some of the major uses to which Commodore machines are put. There are over 70 key companies who will be exhibiting their latest products, which means that just about everything that's new in the Commodore world will be on show!

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Business

Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Commodore computers.

As well as products for the C64 and Amiga series, you'll be able to try out applications for the price-beating Commodore PC compatible micros.

And you'll also be able to attend seminars covering all aspects of using Commodore micros in your business.

Leisure

The C64 and Amiga computers are the most powerful 8 and 16 bit micros for producing fast-action arcade quality games. The range of new software on show will demonstrate how these machines' power is continually being stretched, producing faster and even more addictive games with superb graphics.

If you're a keen game player, you'll find there's so much on offer at the show you're guaranteed a real treat!

Education

Commodore micros are now used as educational tools all over the country. With the development of BBC Basic on the Amiga, and the advent of Desktop Video (combining TV pictures with text and graphics), the range of educational applications is endless.

At the show you'll see how the latest software packages are making real breakthroughs in the educational sector, and be able to try them out for yourself.

Special Events

As well as special events and presentations, you'll also be able to meet some of your favourite celebrities, and maybe get a chance to talk with them about how they use micros in their work.

So for a great day out, whether you want to see what the future holds for Commodore computers, to buy the latest software or to get advice on specific applications, the Commodore show is the place to go. And if you send in the coupon today, we'll knock £1 off the price of each ticket!

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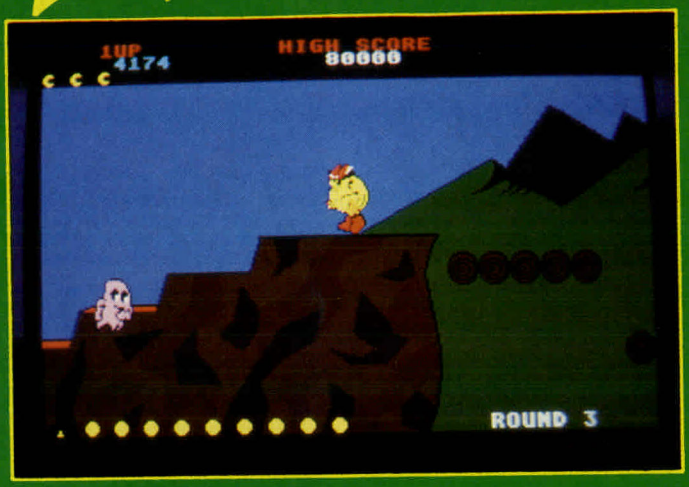
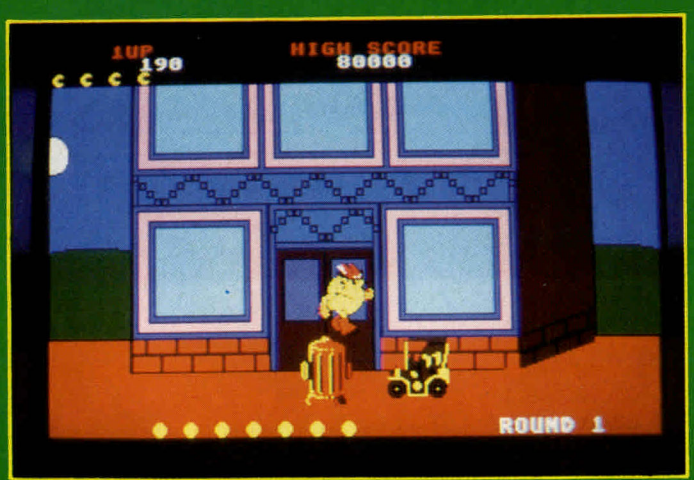


When the software world occasionally stagnates for a week or so, I need something to keep my spirits up. Time to take another delve into the diskbox inhabited by only the very few elite 64 games. Usually it's a toss up between Wizball or Pacland, two of my absolute all-time life-long faves. Pacland was originally scheduled to appear on the Amiga shortly after the 64, but despite the year's wait, the game still looks as good as it ever did.

Free from the confines of a dotted maze, Pac can now enjoy family life in a 2D horizontally scrolling cartoon world. He's offered to escort a lost fairy back to fairyland under the cover of his red trilby. As always, that band of spooks have got it in for our spherical superhero, hounding him at every turn. Since their maze-dwelling days they've learned to drive and pilot mini planes. A step outside the security of the Pac homestead leads you right up the main road. Now the spooks have developed a real mean streak. Those airborne bomb you with babies, while the car drivers just run straight into you. Eat one of the few power pills dotted along the way, and of course the tables are turned for a few seconds.

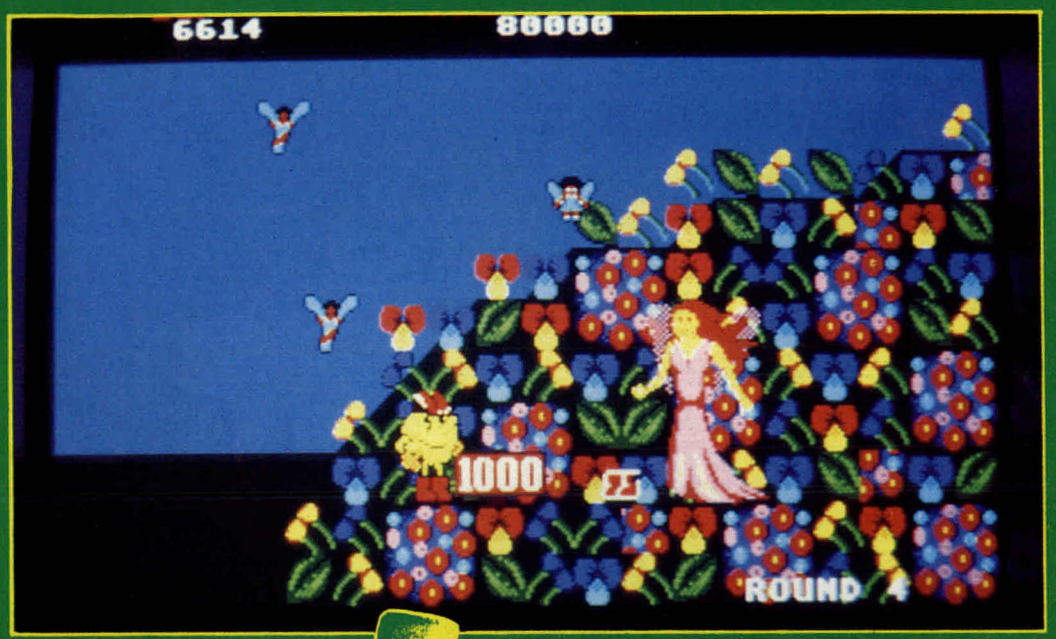
"As always, that band of spooks have got it in for our spherical superhero, hounding him at every turn."



Trips to and from Fairyland are split into comfortably short rounds. From the bustle of the town, you soon find yourself bounding through the woods. The spooks are forced to change tactics here, taking to their pogo sticks. Emerging from the forest you approach a lake. A handily placed springboard gives you the extra power to cross the water, and a magical door on the other side takes you into the flowerbed they call Fairyland. In exchange for your bravery, the Fairy Queen appears from nowhere to give you a pair of magic boots. They give you the ability to leap from non-existent platforms, compensating for the increased ghostly presence on the return journey.

Arriving back at the ranch to the delight of Mrs

LAND



and Junior Pac, you pick up another lost fairy and do the whole thing over again, only this time with a whole new set of levels.

All good harmless fun, except for one thing: the scrolling. After Grandslam's Amiga conversion of Pacmania with full screen smooth scrolling, the quality of Pacland is a big disappointment. It really wouldn't have taken much to make use of the Amiga's sprites and scrolling, but without Teque (Pacmania's original programmers) Grandslam must have had to make a compromise. Fortunately Pacland is such a great game in the first place that it still succeeds despite the constant jerking. It's especially suited to kids not yet into the Robocop massacre simulators. The Amiga Pacland is certainly good, but for me though, the 64 version still comes out on top.

T.H.

Graphics: 7
Sound: 6
Playability: 7
Overall: 7

Price: £19.95

Fright Night

Microdeal

Life for the common or cemetary vampire has never been easy, and it is getting worse. These days, the average half-witted vampire hunter can just nip down to the corner shop to stock up on wooden stakes, garlic or some holy water. Yes, vampirism just is not the life it used to be for the upwardly mobile vampire in the 1980s.

Just such a vampire is one Gerry Dandridge, anti-hero (OK, villain) of RCA-Columbia Pictures' superb 'Fright Night'. This wickedly funny film saw poor Roddy McDowell eking out a living as the star of a fading television show, dedicated to all-things-sinister. One night a fan confronts him, convinced the guy living next door is a bloodsucker. No, not someone from the Inland Revenue, but a vampire no less. So the story unfolds – with Mr. Dandridge (bloodsucker) giving Mr. McDowell (vampire hunter) a healthy run around and plenty of gruesome shocks into the bargain.

This was all fine and nice until someone got the idea to transpose this whole idea into a computer game – after all, it worked with Karate Kid II. Interestingly enough, Fright Night was developed by the same team as Karate Kid II, Steve Bak (programming) and Pete Lyon (graphics), aided and abetted by the talented musician Dave Wittaker. With a pedigree like that, you could reasonably expect a visually stunning game ... and you would be right – but, that is not the whole story.

The whole thing starts to go wrong when the player is given the part of Gerry 'fangs' Dandridge. Ordinarily, this anti-hero role works well, but here tends to belie the tone of the original film. I would have preferred to take on the role of the vampire hunter – however cliched that role may be.

Sadly it starts to go downhill from there on. The game boots from the single disk and presents an excellent title screen – beautifully rendered from the film's original and stylish artwork. Look carefully for a moment and you will discover this is yet another game which only uses the NTSC portion of the screen. Accompanying this artwork is a well sampled voice saying "Welcome to Fright Night". Unlike other games I could mention, this sample is unlikely to get up your nose.

Click the fire button and the game starts in earnest. The idea is to move around the three-levelled mansion in the six hours between dusk and dawn, and suck the blood from any of the unwary vampire hunters that may have strayed inside. However, quite why the fools are walking around a vampire-infested mansion in the middle of the night is never fully explained.

If you manage to survive the night and suck the blood of all the occupants, you can return to the relative peace of your coffin and sleep through until the next night. The first night – Monday – is a doddle, but each night you survive, the harder and more involved the game becomes.

From the second night onwards, the hunters can enlist the help of the spirits of the people you have already killed. From here on in all manner of ghosts, dismembered torsos and severed limbs jump in an attempt to drain your death force. This is of course wrog, because vampires tend to leave victims in one piece, albeit dead!

Minor moans aside, this is where the game takes on an uncanny resemblance to a format which died long ago with the early Spectrum – I refer of course to Manic Miner and derivatives. You remember, the aim of the game was to wander around rooms solving puzzles, while an assortment of baddies flew about at random and drained your energy on contact.

What makes this worse, is the complete lack of animation in the backgrounds. Psygnosis' recent hit 'Obliterator' and even their ageing 'Barbarian', for example, both feature fully scrolling backgrounds – and while this adds little to the game, it does add interest value. The backgrounds in Fright Night on the other hand are almost completely static – I suspect to make the ST version cheaper. Similarly, the packaging is reasonable, but the instructions are too concise.

That then, is the whole thing in a nutshell. As expected Bak's programming is good, Lyon's gruesome graphics excellent – and Wittaker's music suitably eerie. However, the game falls down on a hopeless lack of originality. Overall, this lacklustre variant on a theme deserves to fail, and I can only hope this talented team will consider very carefully before they embark on another turkey.

M.S.

Graphics: 8
Sound: 4
Playability: 3
Value: 5
Price: £24.95

FIRE BRIGADE

Panther Games bring you the battle for Kiev, 1943. Panther Games are another strategy software house from Australia following in the well worn steps of SSG. In fact, the two companies have close connections. Ian Trout, SSG game designer, was one of Fire Brigade's playtesters.

Fire Brigade includes an 80-page manual, a supplement which details specific features for the Amiga version and numerous additional cards that display the Order of Battle for each side for every scenario, a colour tactical map and a very helpful alphabetical list of every cioty and town in the area complete with its map reference. This feature will save frustrating map searches for that elusive town you can never find when you need it. The disk is not copy-protected.

The gameplay is strictly on a command level. You either play as the commander of the German Fourth Panzer Army or the Soviet front commander. Subsequently, you have limited control over every action which takes place on the battlefield. The game consists of three principle scenarios. The first, 3 November 1943, is the full campaign game, involving the Soviet forces making a frantic attack to free Kiev from German occupation before the German re-enforcements appear. The second scenario, 15 November 1943, details the German counter-attack against the stretched and weary Soviet Army at Kornin. The final scenario, 5 December 1943, involves another German counter-attack. This time the two sides have received new supplies, forcing a battle of attrition and delaying tactics. An additional scenario is included as a Tutorial. This is an excellent idea for guiding players into the game because, although Fire Brigade is easy to use, you do need a measure of time and concentration in order to learn the system in the first place. The step-by-step Tutorial, in conjunction with the manual, successfully avoids the minefields of confusion that high level wargames sometimes create which leads to immediate enjoyment and greater confidence for the battles to follow.

The user interface for Fire Brigade is dominated by the WIMP system. However, function keys are available for players who prefere the direct approach. However, Fire Brigade is 'open-ended' with no strict sequence of play being enforced upon you. You can, therefore, visit and re-visit any report, check any statistics and so on at any time.

After you first select Victory/Progress Report from the menu bar, the screen updates with a series of Soviet stars or German crosses on every city signifying who controls it. To the left of the map information shows Victory points, current status, etc. Next you examine the Air Activity Report. Star and cross icons will appear over those units which have been attacked by aircraft. To the left appear icons of representative bombers and fighters. Bars located above the icons show the amount of aircraft on interdiction, air superiority missions etc. Selecting Battle Report displays icons over the scenes of battle. Clicking on one of these will give a run-down on the proceedings. However, if this is not required the direction that each icon is pointing signifies who won that particular encounter, which is a good alternative if the full information is not needed. The next stage is to examine each unit, both yours and, to a limited extent, your opponents.

Once all of the reports have been examined it is time to assign objectives. This is done by selecting the Objective icon on the palette beneath the on-screen map. You then select the unit you wish to move, select the objective and away it goes. Once that is done you can assign orders. Again they are selected on the lower palette and then the required unit is clicked on. The icon will then transfer itself to the designated unit. Every time you select a palette icon the pointer will change to that icon which acts as a useful reminder. After any orders for force marching you may allocate air, combat and logistic support. The next stage is to select your frontage. This will display a HQ unit and it's subordinate units, their condition and what distance they are trying to cover as a "front". Finally you can attach, transfer and replace units then select Move and sit back and watch the action.

Graphics are colourful with clear unit and terrain symbols. Sounds is, as is always with wargames, a novelty for about 10 minutes after which it is disabled. Fire Brigade's one, slight problem is the rather slow screen update during window and menu bar selection. But this does not really detract from the gameplay. An interesting featuire which was added to the Amiga version is the ability to change the palette colours. This is done via a palette box which is similar to the one in DeluxePaint – complete with colour Range, Copy command and RGB sliders!

Fire Brigade is accessible by the expert or novice as it does not demand previous knowledge of other wargames or any historical background. However, this is a game that is too difficult to be played and mastered straight away; the breadth of options and the depth of play preclude any such notions. Studying the game's features will bring dividends, though, and many months of play. Panther Games have managed to produce a wargame that actually looks at home on the Amiga, and every inch a professional product. So go on – run into your nearest computer shop and call for the Fire Brigade!

Graphics: 7
Sound: 5
Playability: 9
Value: 9
Price: £24.99

THE ARIADNE CONNECTION

Ariadne have been developing products for the Amiga in Computer Based Training and Interactive Video for some time. Their most recent venture is into Amiga music, with the Opus–1 Music Composition Language. E.L. Rod spoke to the author of Opus–1, Jim Hawkins

Elrod: *Opus-1 is a new music package for the Amiga. How does it differ from existing packages, like Electronic Arts' Deluxe Music Construction Set?*
Jim: **The reason for Opus-1 is that there are some things which cannot be done easily with packages currently available — Deluxe Music, Sonix and the others. For example, you can't do loop structuring at all with these packages. You can repeat a section in Deluxe Music, but you can't define a small chunk of music and use it lots of times in lots of variable ways.**
Elrod: *And that's the point of a Music Composition Language?*
Jim: **Yes, precisely. There have been a number of Music Composition Languages, notably the one on the Fairlite but also on the BBC Micro, which composers have used because, although they may want to improvise sometimes, some bits need to be written down strictly and actually composed. By using a Music Composition Language, you get very tight control over what you do, and after that you can busk away over the top of it.**
Elrod: *So it's not what you might call a "me too" package — it's something quite different.*
Jim: **It'a completely different from any other music package on the Amiga at the moment. It combines the full power of a composition language with sequencing possibilities as well, so you can get the very best of pre-composing combined with live performance for your wonderful solo. Its main difference is that the music itself is written with a text editor, in a very simple language with some very powerful constructs in it. For example, it allows you to repeat a section up to 65000 times, nested up to 64 levels deep — meaning you could make an almost infinite amount of music out of a very small amount of data.**
Elrod: *So how would you go about using the system in practice?*
Jim: **Lets say for example that you wanted to create a base track with some chords on the Amiga, or using your midi equipment. Suppose you decided it was going to be in 7/8 time you might start out by sketching out your harmony, then writing a base line down. The base line would be written down and defined as a word you might do a C baseline that went C C E E G G Bb Bb G G etc which is a normal sort of boogie base. You write this literally as "C E E" etc, so you don't worry about positioning and pointing with your mouse and getting it wrong and so on — you can type it very**

quickly once you know what you're doing. Once you've got the basic base-line, you can transpose it very simply up or down and you can repeat it as many times as you like. So within seconds you can have a rough base to start working with. Then you might define another track which was a hi-pat; you end up with lots of little blocks you can stick together however you like in simple or very complex ways; change the tempo, change the sounds — do all those things with the minimum of effort, leaving you free to concentrate on the music. At the end of the day, you can show the resulting music on a stave on the screen, play it using Opus-1's own music player, or export it to another package such as DMCS.

Elrod: *It sounds like sort of "holistic" approach, thinking of a bit of music as a whole rather than note by note, and making changes that affect the whole composition.*

Jim: Yes, it's very easy to do that. Suppose you wanted to create a long repeating section for part of a first movement or something — normally you would have to write this out several times, or cut-and-paste it in, which is very boring and very prone to mistakes. With Opus, the first section would be defined with a name — like FirstSection — which you can use as often as you like anywhere in the score; if you decide to change FirstSection then the changes will apply wherever you need it. You end up with very small data-files for even very long compositions — I'd wager you could produce works of symphonic length on a 512K Amiga!

Elrod: *Is Opus-1 designed principally for Midi, or for the Amiga's own music capabilities?*

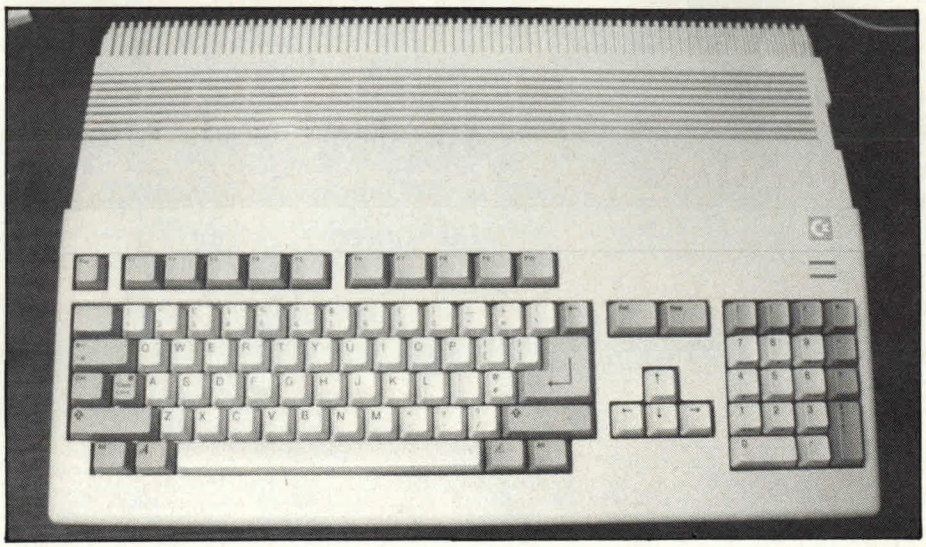
Jim: It's designed for both. A great virtue on the Amiga is file Interchange, and consideration for Opus was to make it both read and write standard Amiga music called SMUS files. These include in them a specification for using Midi instruments — this package uses them properly, so you can define a Midi instrument just as easily as an Amiga instrument, and you can swap between them as often as you like. Opus supports all standard Amiga Instrument files, and up to sixteen Midi channels — though I may be able to increase this in future!

Elrod: *So I could compose at home using the Amiga instruments, then take it to a studio somewhere and blast it out on the Midi?*

Jim: Absolutely. You can redefine in seconds just about anything using a music language — to change a trumpet-sound from Amiga to Midi, you'd just have to change the definition of one word "Trumpet".

Elrod: *We're particularly interested in applications in education. Do you see Opus-1 as having much educational relevance?*

Jim: Any flexible ways of creating music are useful in music education. To take one small example, visually impaired people find it very difficult to create music by mousing around on a screen,but can get on fine with a system like Opus — there's no need to use complex musical notation. More generally, there is a tendency to think of music only in tiny little lbits — the standard two minute thing. Composers at the sixth form level should be encouraged to deal with longer pieces — Opus provides a way of doing this without so much of the pain! It also has a lot lof time savers built into it — for example it will generate scale automatically, for major scales, minor scales — harmonic and melodic — so its very easy for students to experiment with this sort of thing by typing a few words, and having the music appear on the screen, or actually playing.



Elrod: *So it would really be useful with more advanced students — sixth form and upwards.*

Jim: Yes — especially ones who are interested in learning how actually to write original music.

Elrod: *The Opus examples are all Jazz-based — is this your musical background?*

Jim: I used to be a Jazz pianist at one time, in a life in which I've done a lot of things! I went to university as a state scholar in English and Music, and in the '60s I wrote quite a large number of orchestral works which were performed, many of them extremely badly by myself. What I like about the sort of tool we're beginning to see on computers like the Amiga is the way it frees you to work on larger projects. At one time, all you could write sensibly was a piano sonata, unless you had a whole bunch of friends you could get together with time to work on your music. Now you can create quite complex scores — tune them, work on them, and get them ready — then either leave them as computer-played music, or print the score out and give it to someone to play. This is increasingly the practice in things like film and television scores, where time in recording studios is very expensive, and you want the music as complete as possible before you go in for a session.

Elrod: *So that's the background which leads you to write Opus 1. Now, you're a man who writes compilers for fun and can say "Reverse Polish Notation" without dropping his beer-mug — where does this come from?*

Jim: Well, my actual way of making a living is writing Television plays! In the late seventies I bought an Apple to write with, and it very quickly became a major competitor for my time — as a writer, my time was almost entirely under my own control, so over about a year I was able to reach something like a post-graduate level on computing. I then teamed up with some people from Electronic Engineering at Hull University where I was at the ltime, and did a number of projects on speech synthesis and so on — then I got involved with the Amiga.

Elrod: *Is it true you have written scripts for East Enders?*

Jim: A long time ago, yes I did some of the early ones! The last thing was an episode of Boone, which featured a computer scam, where I had shifted the Amiga virus onto the ST...But that's another story...

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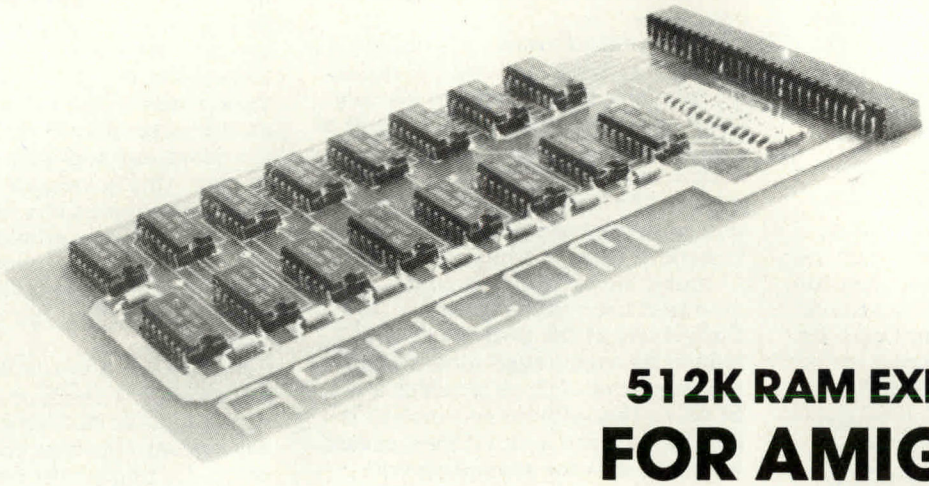

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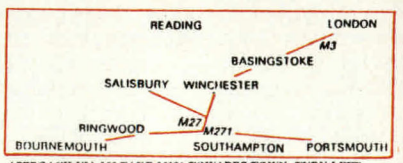
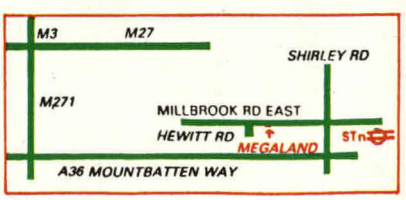


APPROACH VIA M3 TAKE M271 TOWARDS TOWN, TURN LEFT ONTO MOUNTBATTEN WAY, BEFORE STATION TURN LEFT TOWARDS SHIRLEY AFTER 50 yds LEFT INTO MILLBROOK RD MEGALAND IS 250yds ON THE LEFT, 3 MINS WALK FROM STATION.



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RAIDER

Impressions

For their launch release, new software house Impressions have gone for a safe bet with this rehash of an old favourite. This is an understandable move, as the simplest ideas are often the best.

Raider's roots go back to Gravitar, an ancient coin-op which itself was a combo of Asteroids and Lunar Lander. You will find no chrome exhausts and go-faster stripes on this ship; all you get is a miniscule triangle with a gun at one end and a jet at the other. Using either the mouse or the keyboard, you fly the thing with two rotate controls and a rocket thruster. Each of the game's planets are defended by a number of gun turrets, all of which must be destroyed to reveal a spinning cog. Pick up the cogs from each of the four planets in every solar system and place them in the powerplant to move on to the next stage.

"Pick up the cogs from each of the four planets in every solar system and place them in the power plant to move onto the next stage."

While the gameplay has had few enhancements, Impressions have at least made an attempt at updating its look. Most of the limpit guns and fuel pods are found near the surface in the earlier stages, where gravity is weak and pulls directly down. Complications arise when the guns appear down narrow mine shafts and gravity generators pull you in all directions. With four interconnected cogs onboard you are faced with the fiddly task of placing them in the generator.

Memories of the old Firebird goody, Thrust, were aroused as I played Raider. To check I had not subconciously donned those rose-tinted specs, I loaded up the 64 hit for a few games. After playing it for about an hour I came to the conclusion that Raider could not match it for gameplay. For one thing, Raider's level designs are unexciting, not just to look at but also in their layout. Detailed backgrounds are not essential in such games, as has been proven in Thrust and the ST game Oids, both of which emit an eerie atmosphere from their uncluttered graphics. Rather than make a half-hearted effort towards souping up the graphics, Impressions would have been better off either sticking with the old format or going the whole hog, maybe including some parallax scrolling, animated inhabitants or more interactive traps and defences.

Without any such enhancements, or even gameplay that compete with its predecessors, Raider looks lost on the Amiga. Until we see an Amiga conversion of Oids, it has no competition. Anyone who stil has a 64 would be far better off tracking down Thrust, which at £1.99 will make you a substantial saving.

T.H.

Graphics: 4
Sound: 4
Playabililty: 6
Value: 5
Price: £19.95

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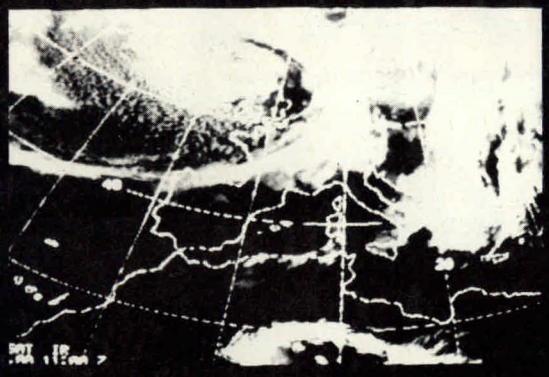

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VISA Access

Intuition - Part 4

This month, MENUS, plus the essential listings to allow you to use Intuition expertly...

Getting things going

Last month we began looking at Intuition Menus. To continue, once all the structures are set up to the satisfaction of the compiler, you need to attach the menus to the window. This is done in OpenStuff() by calling the Intuition function SetMenuStrip() with a pointer to the Window structure returned by OpenWindow() and also the address of the first member of the Menus array.

The IDCMP Handler

The input/output side of things is catered for in the now familiar doIDCMP() function which follows along the same lines as last month's example. Intuition will send menu selection messages if the MENUVERIFY and MENUPICK flags are set in the IDCMPFlags member of the NewWindow structure. The verification flag means that before displaying any menus when the right button is pressed, Intuition will await a reply, allowing your program to finish any drawing etc. To cancel the request, your program must be the active one and you simply change the Code field of the message structure to a MENUCANCEL (defined in intuition.h). Note that you can only cancel menu operations if you are active as it is not on to have some inconsiderate program sulking and terminating things simply because it isn't doing anything. You can find out if you are active by examining the Code field which will equal MENUHOT or MENUWAITING. As usual you should reply to these verification requests without delay.

The message MENUPICK is the elusive number sent by Intuition when an item is selected. It is contained in the Class field of the message and is examined with a switch statement to distinguish it from other possibilities, in this case either a CLOSEWINDOW or MENUVERIFY. The menu selected is indicated by testing the Code member of the message with some macros included in intuition.h.

The first case to establish is if the user was only joking and simply pressed the right button out of boredom and decided against selecting anything. This won't fool Intuition and the Case member is set to MENUNULL. Note that this is not the same as NULL (zero)! The program below ignores this but you could use the right button for your own sinister purposes.

The Code value is really a 16-bit USHORT number and the bits are divided up into three groups:

Bits 0 4 are the menu number;
Bits 5 10 are the item number;
Bits 11 15 are the sub item number.

Whilst encoding three numbers in one variable is very efficient, it is somewhat awkward to extract the particular value required for the switch statements. Luckily for us the #include file intuition.h contains the definitions for three macros to manipulate the Code and remove the unwanted bits. It is quite important that you use these macros, rather than your own, in case Commodore see fit to alter the setup sometime in the future (probably the next century if the 1.3 saga is anything to go by.

To recap then, we have established that some item in the menu system has been selected. Now we are in a position to determine which one it was and act accordingly. The MENUNUM macro is passed the message -› Code and the outcome of the macro's bit movements is tested with a switch statement. Each menu along the strip has a number, starting at zero but I prefer to use the constants defined at the top of the program in the listing to improve readability. So the "Project" menu has a menu number of zero, "Edit" is one and "Style" is two.

To keep the doIDCMP() function relatively small, it is probably best to avoid doing much once the menu selected has been established and call a separate routine, passing the Code value for further dissection. This is how the "Project" menu is handled as there are sub-items to be catered for. Before long you can find your indentations hanging over the right end of the page which, besides being painfully unsociable, doesn't leave you much room for manoeuver. Hence the doProject() function at the end of the program. The item selected is determined using the ITEMNUM macro on the Code value, passed by doIDCMP(), via the local variable mycode. I haven't implemented any of the items except "Quit", but each is checked for and a message printed in the DOS window to verify the selection.

The "Save" item has a small (and largely meaningless) sub-menu associated with it. Once the Item Number has been found to be SAVE-ITEM, it is necessary to extract out of the Code the value of the sub-item, using the aptly named SUBITEM macro. Yet another switch is then used to sort out the final choice.

The "Edit" menu is processed in the doIDCMP() function as all it does is to print out the text of the item selected using the macro ITEMNUM to point in the IntuiText array.

I have written a separate "Style" handler as it illustrates the extended selection business. In order to do this your function has to access the actual MenuItem structure (set up at the start) of the first item selected and check the NextSelect field which will contain the Code of the next item on the list. There is a potential little problem with this if the user selects say "Underline" and then, without releasing the right button, zips around to the "Paste" item of the "Edit" menu. Since these will have the same item code, my routine will think that "Underline" has been selected again as it assumes that the Menu number is STYLE-MENU. This is easy to solve but anyone who uses extended selection in such a manner deserves a good talking to by the Guru anyway!

How you would implement a "Style" option in a program is beyond the scope of this article but you would have to ensure that your internal status of flags corresponds at all times with Intuition's idea of things. This explains why you must handle extended selections as Intuition does.

Exiting gracefully

The CloseStuff() function clears the menu strip before exiting in the usual manner, in case the user is playing with the menus while the window is being closed. This is

continued from page 29

unlikely to be a problem unless the user has lightening reflexes or the IDCMP routine is slowed down.

I have not mentioned the other functions or macros associated with menus which are mainly involved in modification of existing menus. OnMenu() and OffMenu() are used to "ghost" an item (and therefore its sub items) when it is unavailable. The SHIFTMENU, SHIFTITEM and SHIFTSUB macros correspond to MENUNUM etc and are used to generate a 16-bit menu number of the type present in the Code field of MENUPICK messages for the On/OffMenu() functions.

You must also do a ClearMenuStrip() before modifying any of the menus' characteristics and re-submit the new MenuItems with a SetMenuStrip() call.

This whistle-stop tour of menus is really only a start to Intuition and next month, gadgets will be under scrutiny.

M.N.

```
/* menu.c: Created 20/1/89 by Mike Nelson.
   This will open a simple window in the WorkBench screen and set up
   some menus. The IDCMP is employed to see what gets selected. */

#include "exec/types.h"
#include "intuition/intuition.h"

#define MENUOFF 1
#define MENUON  0
#define FRONTPEN 0
#define BACKPEN  1
#define PROJFLAGS  ITEMTEXT | ITEMENABLED | HIGHCOMP
#define EDITFLAGS  ITEMTEXT | ITEMENABLED | HIGHCOMP | COMMSEQ
#define STYLEFLAGS ITEMTEXT | ITEMENABLED | HIGHBOX | CHECKIT
#define PROJECT_MENU 0 /* These are used when processing the IDCMP       */
#define EDIT_MENU    1 /* as they make the listing more understandable. */
#define STYLE_MENU   2 /* They also allow you to change things more     */
#define NEW_ITEM     0 /* easily, when 6 months later you can't remember*/
#define OPEN_ITEM    1 /* what on earth menu 2, item 3, subitem 5 meant.*/
#define SAVE_ITEM    2 /* The same applies to the flags calculation     */
#define QUIT_ITEM    3 /* above as each menu is different in its own    */
#define PLAIN_ITEM   0 /* little way. Aren't we all? */
#define BOLD_ITEM    1
#define UNDER_ITEM   2
#define ITALIC_ITEM  3
#define PROJECT_SUB  0
#define SETTINGS_SUB 1

struct IntuitionBase *IntuitionBase; /* So we can use Intuition library */
struct Window *Window; /* Only a pointer: Intuition supplies structure  */

/* The NewWindow is passed to OpenWindow() function */

struct NewWindow NewWindow = {
   20, 20, 300, 100, 0, 1,
   CLOSEWINDOW | MENUVERIFY | MENUPICK,
   WINDOWCLOSE | SMART_REFRESH | ACTIVATE | WINDOWSIZING | WINDOWDRAG |
      WINDOWDEPTH | NOCAREREFRESH,
   NULL, NULL,
   "Try doing this on a Mac", /* ...for some real fun and games */
   NULL, NULL, 100, 25, 640,200, WBENCHSCREEN};

/* Now we do the IntuiTexts using lots of nice arrays */

struct IntuiText ProjText [] = {
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "New", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Open", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Save", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Quit", NULL}
```

continued on page 93

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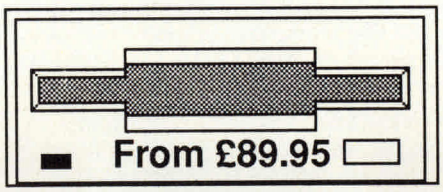

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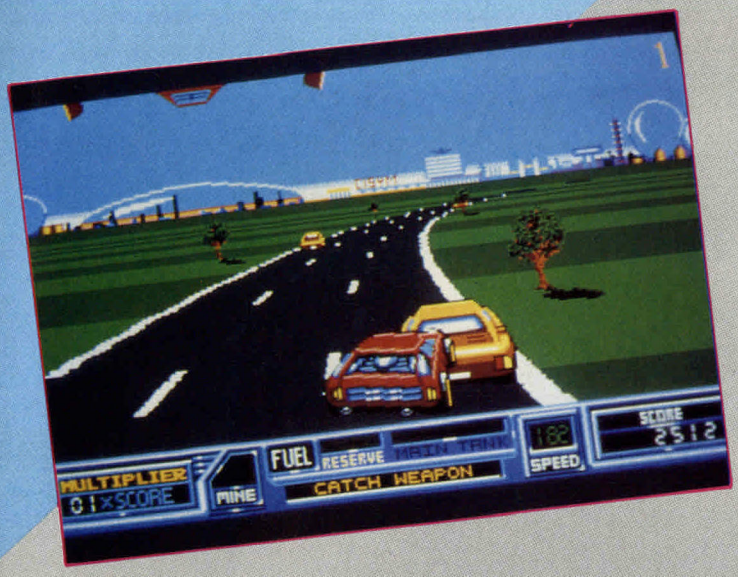
Access

ROADBL

A number of times I had passed off Roadblasters as a cheap race and shoot machine. It was not until I spent a couple of weeks in France with Roadblasters as the only coin-op within a twenty mile radius that I first played it. Little did I know that from that day my life would never be the same again. Ok, so the game is not that good, but the point is it plays a lot better than it looks, so an accurate Amiga conversion was on the cards.

You get to drive a sporty armoured car through fifty stages of a futuristic rally. Unlike today's rallies in which nature's elements are the biggest obstacles, those of Roadblasters are man made. Your ultimate objective is to reach the end of the rally; how you go about it is not quite so simple.

Just to liven up the race, a number of traps and opponents have been scattered along the course. The most common enemy is the stinger. Although not aggressive in any way, they do drive slowly and tend to clog up the lanes. If overtaking them poses a problem, simply blow them off the road



quality in the Amiga version. Unfortunately the conversion's 3D is behind the best in its field, and as a result the whole thing looks rather jerky.

All the graphics are close versions of the originals, but the absence of perspective on any of the sprites gives rise to that cardboard cut-out look again. Most of the sound effects have come across intact, though an engine roar and some of the speech would have gone down well.

Nothing much changes as you get through the game, and combined with the five lives you are given (the coin-op only gave you one) games can drag on after a while. Roadblasters is one of the few games that before long you start to play for score, as opposed to progress. If that suits you, and you are not too bothered about technical standards, by all means give it shot, but do not expect a pixel-perfect conversion.

T.H.

ASTERS

US Gold

with your on-board cannon. The smaller motor bikes follow similar lines but can be a little more tricky to hit. Command cars are distinguished by their purple bullet-proof paintwork. Rat jeeps appear from behind before lining up in front of you and slamming on the brakes.

Road-hogs are not all you have to worry about. Gun turrets line short stretches of the road, taking well-aimed shots as you pass. A light on the dashboard warns of approaching mines, and explosive spikers are hurled from opposing cars.

You can survive an infinite number of collisions so long as you keep the fuel tank topped up. Red and green fuel pods do the trick, and crossing the halfway point gives you another boost. Now and then a support plane flies overhead and drops an extra weapon. Catch it and you could be equiped with a machine gun, a shield, a rather ineffective nitro injector or a cruise missile.

Probe have managed to include all the main features of the coin-op, up to including a mouse control option for a more realistic simulation of the original's controls. However, they still have some way to go on the technical front. Compared to most 3D coin-ops which fill the screen with enormous animated objects, Roadblasters uses few items which are all quite small. The game succeeds despite this, and so I had hoped for a similar graphical

Graphics: 6
Sound: 7
Playability: 6
Value: 6
Price: 19.95

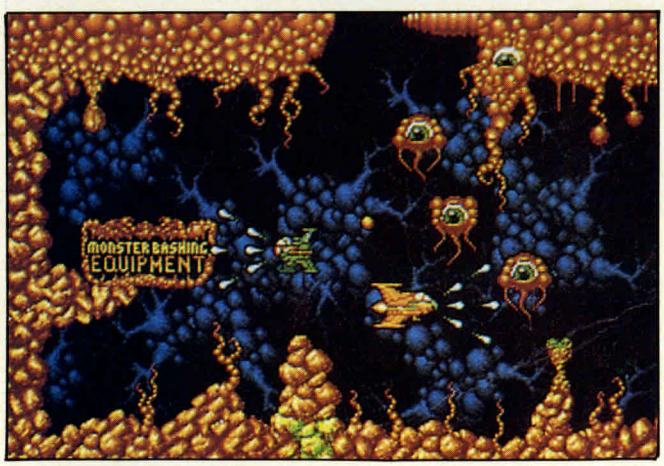
HEARD IT ON THE GRAPEVINE

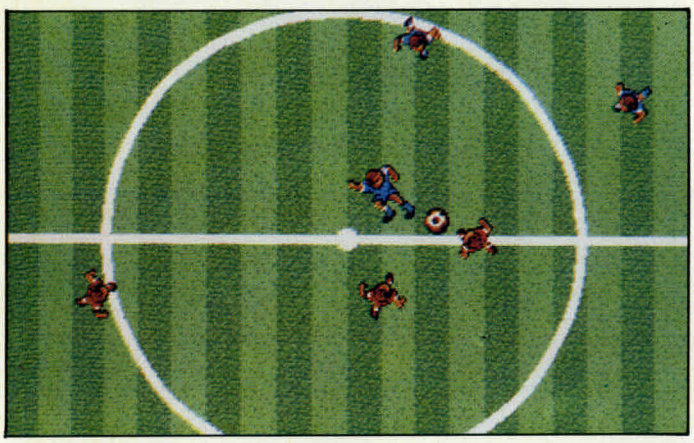
What with Denaris, R-Type and Forgotten Worlds, shoot-em uppers are becoming spoilt for choice. Just to make your decision even harder, Psygnosis are on the brink of releasing Blood Money, a cynical view of the future of safari holidays.

Alien Safari Promotions are the owners of four planets. With the help of some of the best scientists around, they've bred a bunch of genetically engineered aliens and spread them throughout the planets. Here's the deal: Thrill-seeker wants the ultimate experience, pays the owners 200 credits, hops in a helicopter and makes an unrealistic attempt to travel the four planets, mowing down every alien that gets in the way. No one has yet returned alive from a safari, but you intend to change all that, spurred on by infinite riches and universal fame that will be yours if you can pull it off.

From the programmer of Menace, Blood Money is a four-part multi-directionally scrolling blast. Extra weapons can be bought along the way with coins ejected from exploding aliens. Fact fanatics may be interested to know it offers a megabyte of graphics data and 250K of music.

Psygnosis also has Stephen Northcold (of 'Driller' fame) working on their Barbarian II (yes, Palace had ne too, and released it in the USA as 'Axe of Rage' which should avoid some confusion.)





On its way from Microprose is the Amiga version of Microprose Soccer. Not much to go on at the moment, just a screenshot in fact, but it's looking good. Let's hope the gameplay follows suit.

Getting back to shoot-em ups once again, Virgin's conversion of Silkworm is only days away from completion. As a coin-op, its conventional format and low gosh-factor graphics meant it blended in with the Pole Position and Defender machines at the back of the arcades. Virgin have brought it across to the Amiga, added some extra features and come up with a right corker. You can play either as a helicopter or a jeep with an optional friend controlling the other. There's nothing much new about the game but it out-zaps all but the cream of the shoot-em up world. Don't miss next month's issue for the final verdict.

One of the outstanding previews to reach us is Logotron's Archipelagos. Logotron have moved on from the succesful shoot-em up StarRay to a game that has virtually no shooting at all – and certainly no killing. The idea is to link up land masses over the globe while avoiding some very unpleasant catastrophes like explosive blood eggs. This may not sound exciting but it is really fascinating and will challenge Populous for the most original game of the year. Archipelagos looks excellent so far. Watch out for it soon.

T.H.

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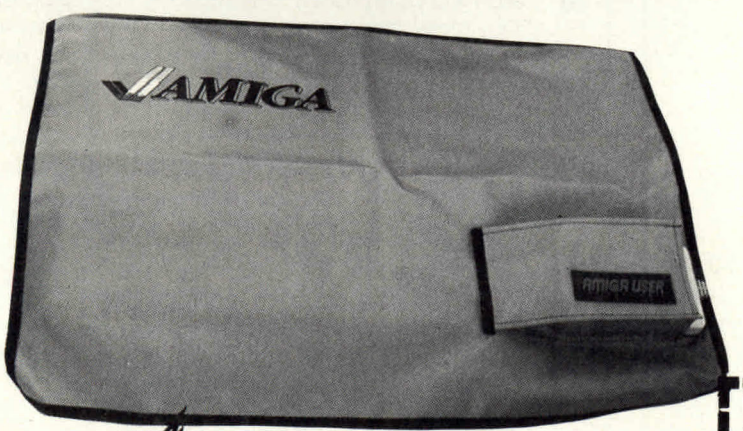

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MICRONET

Micronet is the huge 'electronic magazine' based on British Telecom's mammoth nationwide Prestel system, and contains much of interest to the average home computer user; news and views on the computer companies' activities, hardware and software, and general chat, are all well catered for.

Prestel, on which Micronet is located, uses the Viewdata system of forty column by twenty–four line 'pages' made up of simple block graphics and text, in a choice of eight colours plus flashing, similar to the 'Teletext' systems such as Ceefax and Oracle which you wil have seen on television. In principle, it is similar to Compunet, which I discussed in a recent article, in that it uses a paged system instead of continuous scrolling ASCII text; in practice, Compunet screens are rather more detailed, due to their higher resolution block graphics, and have sixteen colours available. In addition, Prestel pages tend to be displayed faster, though they are not error corected and are prone to corruption on a bad 'phone line.

Like Compunet, Prestel and Micronet are available at local call rates to 95% of the UK's population. However, apart from these similarities, the differences are vast; Compunet is far less formal, rather like a bulletin board in many ways, and follows a tree structure similar to Amiga disk directories and sub-directories, where Prestel and Micronet are held together by many menus and routes based on keying in numbers.

To access Micronet on Prestel, you need a special Prestel Terminal program, such as Y2's RubyView - in fact, if you wish to download Telesoftware, you have to use RubyView, since this is the only program available with the correct downloading protocol. On the other hand, you may find some Public Domain libraries stocking Supertex, an Australian Viewdata Terminal program, which will do the job just as well if you do not require telesoftware downloading from Micronet. In any event, enthusiastic comms users will find that the available Prestel software is disappointingly short of features compared to the available ASCII terminals; nevertheless, these programs will get you onto Micronet, which is the main thing! Since Prestel introduced the Vasscomm system, it is now possible to get online using any speed between 300 baud and 2400 baud full duplex; impoverished readers will however be pleased to hear that it is also still possible to connect via a cheap 1200/75 baud manual dial modem, as used by thousands of Micronet users from the year dot. The software does the 'speed buffering' within itself, since the Amiga hardware does not directly support split baud rates, as with all micros of US origin.

Micronet is not alone in the 'Prestel Microcomputing' area; outside Micronet itself is 'ClubSpot 810', which is an independent area also covering a wide range of interests. While this area is run by the 'British Association of Computer Clubs', in practice the majority of the effort put into it is made by independent contributors who write articles and edit 'pages' on the system purely for the love of it! There is an element of this in the actual Micronet area, more of this in a moment.

There is plenty to see in the ClubSpot area of general interest, particularly if you're a Science Fiction fan (the Earthlight section is excellent) or have other hobbies such as photography or family history, but there is as yet nothing of specific Amiga interest. To find this, we have to move on to the main section of Prestel Microcomputing, Micronet itself.

Official Micronet coverage of the Amiga has, until recently, been sparse, and even now, the majority of Amiga activity is present within the Micronet general Commodore area, 'Solely Commodore', which while it is mainly structured for the Commodore 64 and Commodore 128 users on the 'Net, has been recently restructured to provide more of interest to the Amiga owner. The area is excellent, and the Amiga section is growing steadily; hints and tips, product reviews (hardware and software) and technical articles, many contributed by readers, feature strongly. One of the most enjoyable aspects of the area, which is typical of Micronet, is the frequently updated Letters section; here, readers may comment on the Commodore scene, and ask for and give genuinely useful advice.

Micronet's 'official' combined area for Amiga and Atari ST users is generally not of the same standard as Solely Commodore, though again, it is graduallly improving; some people might say this has been due to Micronet Editorial staff's fixation on Acorn products, but I believe it is because only recently has the concentration of Amiga users on Micronet reached such a level that Micronet has considered it worthwhile making the effort to cater for them properly. Fortunately, there are signs that interest in the Amiga at the 'Net is taking a more serious turn now, as they have recently moved the Telesoftware system (Telesoftware is software encoded in the Prestel format which can be downloaded to your Amiga via your 'phone line and modem and saved onto disk) for all computers off the Prestel database and onto an Amiga 2000 running a modified version of Y2's Rubytel viewdata software on a huge hard disk! This system is accessed as a 'gateway' or external system via Micronet, and runs rather more slowly than the huge mainframes of Prestel - sadly, there seem to be a number of serious bugs in the modified software, and the setup currently has an unpleasant tendency to 'hang' and leave you with a frozen screen, necessitating the hanging up of your connection and re-dialling. Hopefully, this wil be corrected in the near future.

Of more general interest to Amiga users are the Chatlines, pages where chains of rapidly updated messages can be read and added to, enabling conversations spanning the length and breadth of the UK to take place. This is one of the most enjoyable interactive features of Micronet, and a lot of friends and contacts can be made all over the country in this way, supplemented by the Mailbox system, whereby it is possible to send paged messages to other individual users of the system. This is not really an Electronic Mail system in the full sense of the word, as Micronet does not directly connect to the outside world; however, it is now possible to access some of the facilities of Telecom Gold via a gateway, and send short messages to and from that system, as well as being able to send brief Telexes direct from Prestel to any Telex machine around the world, for a fee. While these facilities are likely to prove too limited for the serious business user, the average hobbyist will undoubtedly find them handy for occasional use.

There is much to be said for Micronet's general computer news pages, which

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often hold items of interest to Amiga users, and are updated daily during the week. There are also many other features such as areas where advertisements may be left, and it is even possible, for a small fee, to hire your own twenty-six frames, in the Gallery area, to be used as a soapbox for your own interests. In addition, there is also the popular multi-user adventure game, 'Shades', which also available in a different style on Microlink. Micronet also includes a number of business oriented information services which, while of interest to the casual business user, are of limited scope compared to Microlink's more active business areas.

Generally, if you are a hobbyist having a wide interest in computers, are looking for the latest news, and would like to be able to communicate with other Amiga owners all over the UK at low cost (and take advantage of the other general interest areas of Prestel which are also available to you with a Micronet subscription), Micronet should prove to be right up your street. User participation is encouraged in many ways (although the Editorial staff are not always as responsive as they might be!), and the service is undoubtedly one of the most interactive available. Micronet is on the whole a friendly, fun service, and has the great advantage of being cheap to run, at a penny a minute offpeak online time charge (no time charge 12 midnight - 8am) plus local 'phone call (plus your quarterly subscription, of course). On the other hand, if you are looking for extensive in-depth Commodore activity, you would probably be better off subscribing to Compunet.

MICROLINK

Microlink is undoubtedly the most businesslike of all the communications services available at an affordable cost, and is regularly frequented by business users, hobbyists and journalists of all descriptions.

Based within the British Telecom Gold Electronic Mail system, it runs, as System 72, on its own dedicated Prime 9955 minicomputer, and is very fast. Microlink is accessed either direct, on a London 'phone number, or via PSS (Britsh Telecom's international Packet Switch Stream System); using PSS has the great advantage of being considerably cheaper than a long distance call if you are outside London, and indeed enables you to connect to many services Worldwide. Indeed, many services in the United States are available via PSS, which although it costs extra over the cost of a local 'phone call, is considerably cheaper than dialling direct! Sadly, PSS (and indeed Telecom Gold and Microlink) is not the most user friendly system in the world, and I would recommend that you learn about comms by trying a few bulletin boards before you try this kind of system. It is, nevertheless, very sophisticated, and offers much to the serious comms hobbyist and business user.

When first logging on, you might be forgiven for thinking you had connected to a Bulletin Board, as the system uses simple ASCII scrolling text (though colour is now available to those using termnal software compatible with IBM PC ANSI codes); the great advantage of this type of service is that not only can you use either very cheap Public Domain terminal software, you can also if you wish use highly sophisticated terminal programs such as A-Talk III, which allow you to greatly increase the efficiency of your use of Electronic Mail (Email) services by automating their use to a great degree, even down to unmanned operation during off-peak periods outside office hours, which can save considerably on 'phone call and online charges.

The Microlink logon sequence is reproduced below:

Welcome to Telecom Gold's System 72
Please Sign On
Password:

TELECOM GOLD, a Dialcom Group Messaging and Information Service 19.4Q.11(72)
On At 19:47 25/03/89 GMT
Last On At 19:44 25/03/89 GMT

Got a problem with your PC? Then call on PC Link for help.....Key ›PCL WRI

Have fun on the brightest bulletin board in Britain...Just key ›BBNEW

As you can see, there are a wide range of facilities available from the Microlink Menu, particularly for the business user, who will find this system a real boon. Of most interest are the Electronic Mail facilities, which include, of course, the ability to send long messages between users of the Telecom Gold (includiing Microlink) system, either typed in online, or sent as ASCII text files prepared offline in your favourite wordprocessor or text editor (which saves time and money). It is possible to have unlimited mail storage (though you will be charged for the amount of storage used) as well as mail forwarding and sophisticated bulk mailing facilities.

Apart from internal Email, you also have the facility (at extra cost, of course) to send lengthy Telexes worldwide to any standard Telex machine (or indeed any Telex linked Email service), and also it is possible for you to send letters prepared as text files on your computer to appear on any standard FAX machine! Both Telex and FAX services are essential tools in today's business world, and using the Microlink service could prove a lot cheaper than investing your hard-earned capital in FAX and Telex machines! Of course, it is not possible to send images via the Microlink FAX service, so if you want to send plans or drawings, it's down to the FAX bureau! Nevertheless, a very useful facility which extends the Email concept considerably.

As well as the powerful business facilities, there are more frivolous uses of Microlink which will appeal to the home user, hobbyist or serious comms enthusiast; there is the Microlink Bulletin Board, which is a wide-ranging message area covering many aspects of computing, including a number of machine-specific areas; there are a growing number of Amiga users, but it would be correct to say that, due to the business orientation of the service, the majority are owners of IBM compatibles. Nevertheless, there is much scope for the setting up of Amiga related discussion groups here. For those with interests outside computing, there are many other discussion areas, including, most recently, family history, and Science Fiction!

As with Prestel/Micronet, there is a multi-user game, the ubiquitous Shades, which operates on this system with the traditional scrolling text display popular in adventure games (unlike the Micronet version, which uses a strange variation on the paged format to give a scrolling effect by overwriting previous text). For those comms enthusiasts wishing to go further afield (at an extra cost of 35p per minute) it is also possible to log on to the United States, via the Microlink gateway into the Mnematics database system in the US - this can be extremely interesting for Amiga users, since there is a huge amount of Amiga activity in the US, and there is an Amiga SIG (Special Interest Group) on Mnematics! And finally, for those who wish to contact their friends on Micronet by mail, it is possible to send messages to them via the Telecom Gold Gateway which exists on Micronet.

Microlink, then, is of greatest interest to the professional or business user, as well as the serious comms enthusiast. It should be looked upon as an economical way to obtain a professional Email, Telex and FAX messaging service (it is rather cheaper than the straight Telecom Gold service normally provided to business users), with a few 'fun' frills, but it will cost you a fair bit more than Prestel/Micronet if you use it a lot, as you are charged not only for your local 'phone call (as with Micronet), but also for PSS service (if you are outside the London area, this is cheaper than direct dial), time charges while online (considerably cheaper off- peak), and of course for the various extra facilities that you use while online. This means that Microlink would probably not offer a cost-effective service for the casual home user not requiring powerful Email facilities, and it not the place for the Amiga owner expecting a wide range of in-depth coverage of this machine. Having said that, there can be no doubt that if you need the facilities, a Microlink subscription is definitely money well spent.

S.W.

For further details of the latest Subscriptions and Charges, contact:
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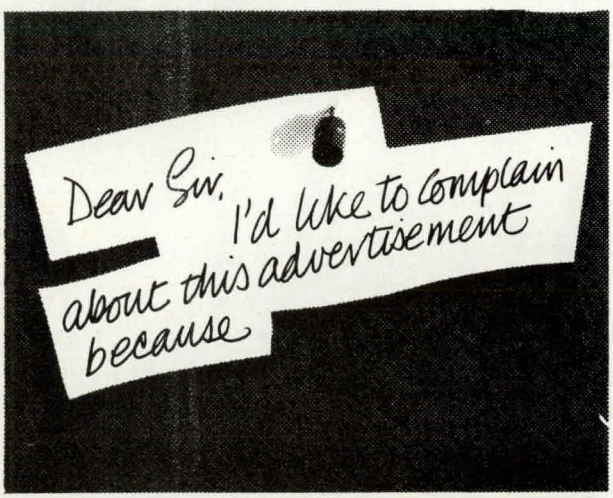

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Intuition

```
/* Project menu, Item Save has two SubItems */

struct IntuiText SaveText [] = {
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Project", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Settings", NULL}
};

struct IntuiText EditText [] = {
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Cut", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Copy", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Paste", NULL},
    {FRONTPEN, BACKPEN, JAM2, 0,0, NULL, "Undo", NULL}
};

struct IntuiText StyleText [] = {
    {FRONTPEN, BACKPEN, JAM2, 2 + CHECKWIDTH, 1, NULL, "Plain", NULL},
    {FRONTPEN, BACKPEN, JAM2, 2 + CHECKWIDTH, 1, NULL, "Bold", NULL},
    {FRONTPEN, BACKPEN, JAM2, 2 + CHECKWIDTH, 1, NULL, "Underline", NULL},
    {FRONTPEN, BACKPEN, JAM2, 2 + CHECKWIDTH, 1, NULL, "Italic", NULL}
};

/* MenuItems are next, start with SubItems which use the same structure */

struct MenuItem SaveItem [] = {
    {&SaveItem[1], 50,5,70,9, PROJFLAGS, NULL, (APTR) &SaveText[0],
       NULL, '\0', NULL, MENUNULL},
    {NULL, 50,14,80,9, PROJFLAGS, NULL, (APTR) &SaveText[1],
       NULL, '\0', NULL, MENUNULL}
};

struct MenuItem ProjMenu [] = {
    {&ProjMenu [1], 0,.0,50,9, PROJFLAGS, NULL, (APTR) &ProjText[0],
       NULL, '\0', NULL, MENUNULL},
    {&ProjMenu [2], 0, 9,50,9, PROJFLAGS, NULL, (APTR) &ProjText[1],
       NULL, '\0', NULL, MENUNULL},
    {&ProjMenu [3], 0,18,80,9, PROJFLAGS, NULL, (APTR) &ProjText[2],
       NULL, '\0', &SaveItem[0], MENUNULL},
    {NULL, 0,27,50,9, PROJFLAGS, NULL, (APTR) &ProjText[3],
       NULL, '\0', NULL, MENUNULL}
};

struct MenuItem EditMenu [] = {
    {&EditMenu [1], 0, 0, 80, 9, EDITFLAGS, NULL,
        (APTR) &EditText[0], NULL, 'X', NULL, MENUNULL},
    {&EditMenu [2], 0, 9, 80, 9, EDITFLAGS, NULL,


        (APTR) &EditText[1], NULL, 'C', NULL, MENUNULL},
    {&EditMenu [3], 0, 18, 80, 9, EDITFLAGS, NULL,
        (APTR) &EditText[2], NULL, 'P', NULL, MENUNULL},
    {NULL, 0, 27, 80, 9, EDITFLAGS, NULL,
        (APTR) &EditText[3], NULL, 'Q', NULL, MENUNULL}
};
```

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```
struct MenuItem StyleMenu [] = {
   {&StyleMenu [1], 4, 0, 96, 10, STYLEFLAGS | CHECKED, 0xfffe,
       (APTR) &StyleText[0], NULL, '\0', NULL, MENUNULL},
   {&StyleMenu [2], 4, 12, 96, 10, STYLEFLAGS, 0x0001,
       (APTR) &StyleText[1], NULL, '\0', NULL, MENUNULL},
   {&StyleMenu [3], 4, 24, 96, 10, STYLEFLAGS, 0x0001,
       (APTR) &StyleText[2], NULL, '\0', NULL, MENUNULL},
   {NULL, 4, 36, 96, 10, STYLEFLAGS, 0x0001,
       (APTR) &StyleText[3], NULL, '\0', NULL, MENUNULL}
};

/* Last but not least the Menus shown in the screen title bar */

struct Menu Menus [] = {
   {&Menus[1],  40, 0, 70, 0, MENUENABLED, "Project", &ProjMenu [0]},
   {&Menus[2], 140, 0, 40, 0, MENUENABLED, "Edit", &EditMenu [0]},
   {NULL, 210, 0, 50, 0, MENUENABLED, "Style", &StyleMenu[0]}
};


UBYTE MenuCancel; /* This is a global so all we have to do to exclude
                     menu operations is to set it to MENUOFF */

void main(), OpenStuff(), CloseStuff(), doIDCMP(), doStyle(), doProject();

void main(){       /* main() is an extravagent bit of code which does */
   OpenStuff();    /* precious little but at least that leaves room   */
   while (1){      /* for expansion... Over to you.                   */
      doIDCMP();
   }
}

void OpenStuff(){ /* Nothing special about this routine */

   IntuitionBase = (struct IntuitionBase *)
               OpenLibrary ("intuition.library", 0);
   if (IntuitionBase == NULL) exit (FALSE);

   if ((Window = (struct Window *) OpenWindow (&NewWindow)) == NULL){
      CloseLibrary (IntuitionBase);
      exit (FALSE);


   }
   SetMenuStrip (Window, &Menus); /* This turns on the menus */
}

void CloseStuff(){ /* Even less exciting */

   ClearMenuStrip (Window, &Menus); /* Manual says you ought to do this */
   if (Window) CloseWindow (Window); /* Can't be too careful */
   if (IntuitionBase) CloseLibrary (IntuitionBase);
}

void doIDCMP(){ /* Now comes the important part */
   struct IntuiMessage *message;
   WaitPort (Window -> UserPort);
   message = (struct IntuiMessage *) GetMsg (Window -> UserPort);

   if (message -> Class == MENUVERIFY){ /* Intuition asks us if it's OK */
                                        /* to initiate menus once right */
```

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Intuition

```
    if (message -> Code == MENUWAITING){  /* Mouse button is pressed  */
       printf("we are actually asleep but go ahead anyway\n");
       /* Since it is extremely rude to cancel menu operations if
          your window has been inactivated by the user, Intuition
          won't let you do it! */
    }
    if (message -> Code == MENUHOT){ /* We are active so get choice */
       printf("Ouch this thing is on... GO FOR IT!\n");
       /* We could turn off the menus here as we are active...
          but don't do it lightly and remember to turn them
          back on. (i.e. set MenuCancel = MENUON) */
       if (MenuCancel) message -> Code = MENUCANCEL;
    }
    ReplyMsg (message); /* Quite important to do this quickly to avoid */
}                       /* delaying the rest of the computer */

else {
    ReplyMsg (message); /* Deja vu */

    switch (message -> Class){ /* Still watch other IDCMP events */
       case CLOSEWINDOW:
          CloseStuff();
          exit (TRUE);
          break;

       case MENUPICK: /* When we get to here right button was pressed */
          if (message -> Code == MENUNULL) break; /* may have been */
                                                  /* released      */
          switch (MENUNUM (message -> Code)){  /*  Now which menu was it?

                case PROJECT_MENU:
                   doProject (message -> Code);  /* Process elsewhere cos */
                   break;                        /* it looks neater!      */

                case EDIT_MENU:                  /* Just to show it works */
                   printf ("Edit: ");
                   printf    ("%s\n",    EditText[ITEMNUM      (message     ->
Code)].IText):
                   break; /* Alsd you can access the original MenuItem */

                   case STYLE_MENU:              /* Again done elsewhere */
                      doStyle (message -> Code);
                      break;

                   default:
                      break;
                } /* switch menu num */

             default:
                break;
          }  /* switch class */
       }  /* else */
    }  /* Phew return at last */
```

CONTINUED NEXT MONTH...

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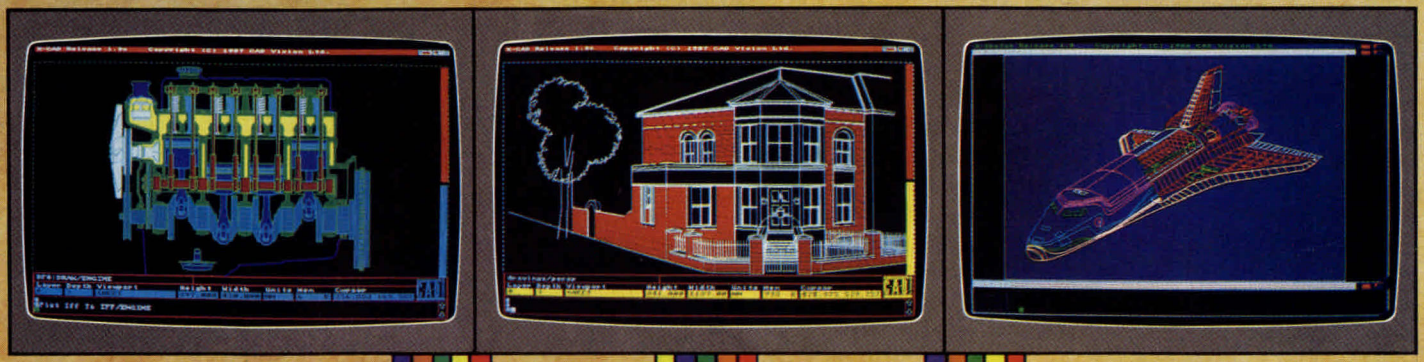

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R-Type

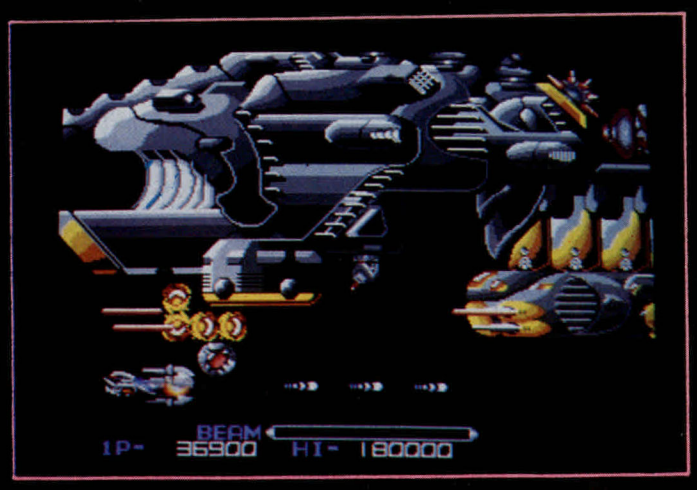
Electric Dreams

Everyone knew the Amiga was up to it. The question was whether Activision could find the programmers to match the hardware, making possible a near-perfect conversion of the stunning R-Type arcade machine. Through their legal wranglings with Rainbow Arts and their R-Type clone Denaris, Activision came across just such a bunch of programmers: Factor 5, Denaris' original creators!

For those who like to know their enemy, the name is Bydo. He has been giving the Earth some stick recently and needs sorting out. The trouble is that he vegetates at the end of a heavily defended tunnel. You and your R-9 fighter are sent in to destroy this evil being.

"A flurry of disorganised ships form the welcome party before melting on contact with your photon laser bolts."

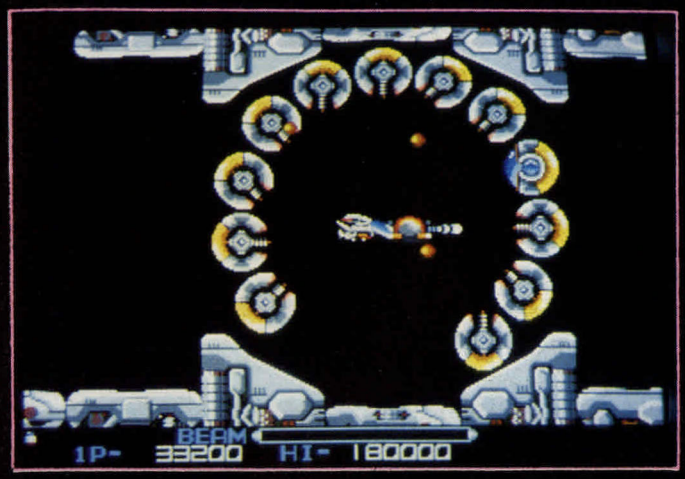
A flurry of disorganised ships form the welcome party before melting on contact with your photon laser bolts. Walkers put up a braver fight, requiring a number of standard zaps for destruction. Alternatively you could hold down the fire button, storing up a beam of energy to liquidise the mid-strength aliens in a single shot. These two weapons are enough to get you through the initial stages, but you will need the assistance of some extra death-systems once you get into the thick of it.

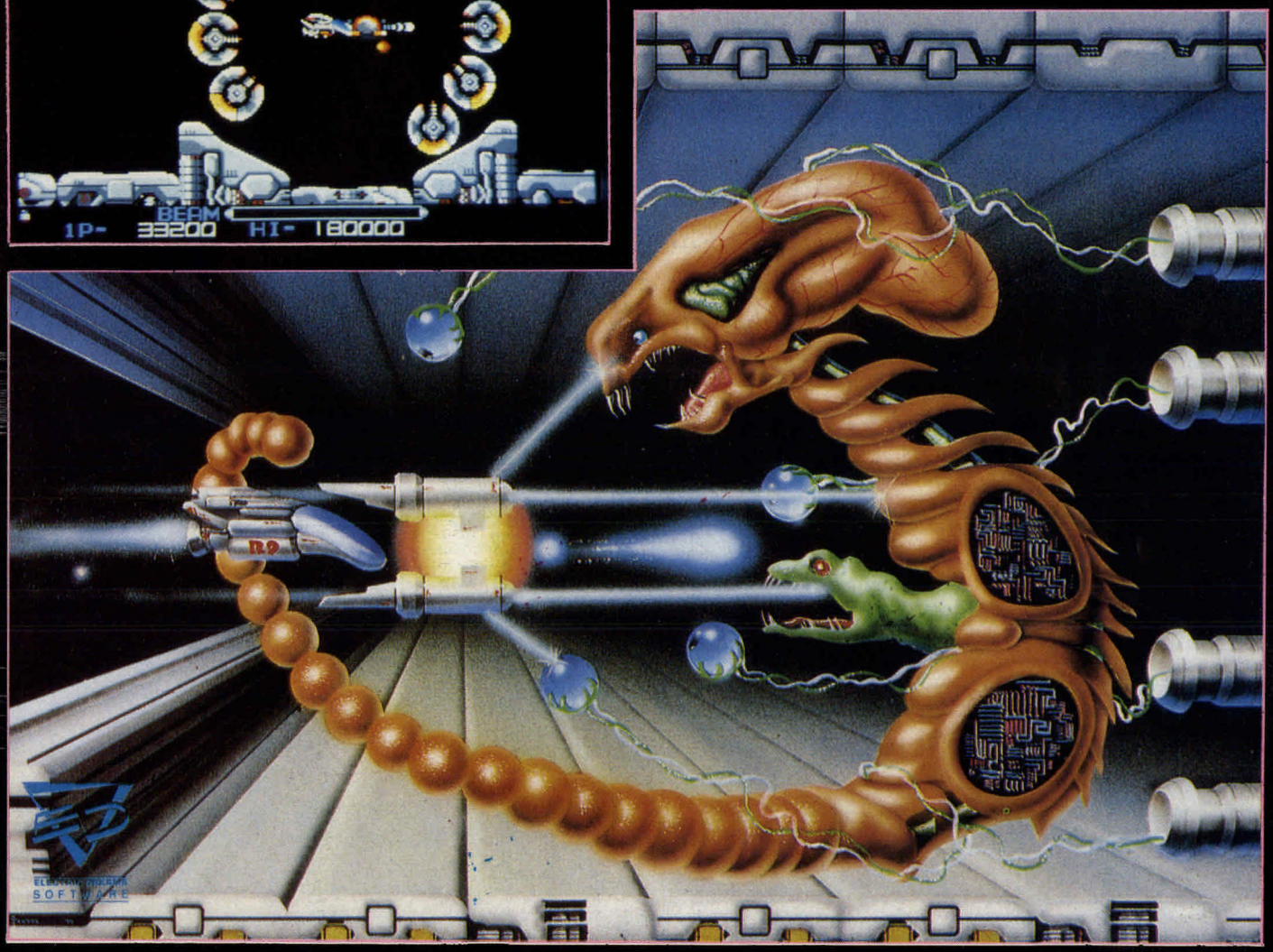


Shooting the two-legged symbols reveals tokens, which when collected equip the ship with some brilliant weapons. Reflective lasers, homing missiles, orbs and ripple lasers are a few which not only look good, but really make a difference in a tight spot. Certain weapons replace others, so at some points in the game it is essential not to collect everything that comes your way.

Although the basis of the game is nothing new, R-Type is full of original ideas. That well known circular snake of cannons mid-way through level one has been re-created well, as has the mother alien which follows. The only thing missing from the first level is the effect of the bas-relief background fading in. Variety is another of the game's better points. Each level plays and looks very different from the last, from the straight-forward goal of level two to the forced scrolling limitations of the third.

As far as sound goes, the music is nothing to





shout about, tootling along taking second place to the authentically arcade-like effects. The graphics are pretty much identical to the original but for their slightly larger scaling. This means you get a playing area a little smaller than the coin-op, but that is no real loss. What surprised me most is the speed at which everything runs and the fluidity of the sprites.

R-Type is just what a shoot 'em up should be. It has that indefinable something that makes every alien irresistibly zappable. Loads of aliens, loads of weapons, mean levels and a stock of five credits add up to one immensely satisfying game. My only grumble is the high price. Other than that, R-Type is simply superb.

T.H.

Graphics: 9
Sound: 7
Playability: 9
Value: 7
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MENTOR

C Programming - Collecting parameters via the CLI

The C language, and environments which support it, provide a way to pass command line arguments (parameters) to programs as they start to execute. AmigaDOS's command line interface is the CLI window and you are in fact using the parameter passing facility every time you type commands like this.....

```
DIR DF0:
COPY DF0:test TO DF1:newtest
```

In all such cases the first item typed is the program name (DIR, COPY etc.). Following that comes the parameters which get passed to the program in question. In the first example the DIR program receives DF0: as a parameter, in the second example the COPY program receives three parameters..... DF0:test, TO, and DF1:newtest.

The inbuilt mechanisms for command line parameter handling are dead easy to use - they rely on the fact that two standard variables are set up. The first of these enables your program to find out how many parameters were present on the command line that started your program running, and the second lets you find out what they were !

Let's deal with the count variable first. This is conventionally called 'argc' (short for argument count) and it simply tells you how many parameters were present on the command line. The name of the program itself is included in this count so our earlier examples would have had argc values of 2 and 4 respectively !

The location of the parameters are specified in an array called 'argv' and, since this is an array of pointers, the initial declarations needed at the start of your program are these.....

```
main(argc, argv)
int argc; char *argv[];
{ entry point to your program code.....
```

Let's take a specific example..... suppose you were writing a CLI based program called ANALYSE whose job would be to locate a selected file, analyse it, and then provides some statistical details concerning it's word content. If, for example, a user typed.....

```
ANALYSE DF0:LETTER
```

at a CLI window the ANALYSE program would run, would collect the filename DF0:LETTER from the command line and in so doing would identify which file it should be working with. Such a program would expect to see two arguments on the command line (the program name and the filename) - so it would expect argc to have a value of 2 otherwise something would be wrong! If the number of arguments supplied was correct the program might then convert the second parameter, i.e. the filename, into a standardised form (say uppercase) before attempting to find the file in question.

Here is some typical code which would do this sort of job..... we check the argc count value, copy the filename parameter (into a variable called 'parameter1'), convert it to upper case using some standard C functions, and then give the modified parameter to an analysis routine called analyse_file().....

```
main(argc, argv)
int argc; char *argv[ ];
{
void analyse_file(); COUNT i, length; char parameter1[30];
if (argc=2)
{
strcpy(parameter1,argv[1]); /* copy the parameter */
length=strlen(parameter1); /* find it's length */
for(i=0; i<length; i++) /* convert to upper case*/
{parameter1[i]=toupper(parameter1[i]);}
analyse_file(parameter1); /* use it ! */
}
else { perform_error_routine() }; /* wrong parameters */
}
```

★ Program Submission Procedure ★

DO NOT submit any program or routine that you do not either own or have proper authority to do so.

ALWAYS include your name, address and the date on all material and any disclosures. Do not forget to make it clear exactly which computer/s your programme or article is applicable to.

Include Kickstart or Workbench versions wherever they are pertinent.

Number all pages.

If you have to submit work which is hand-written then you must make sure it is printed clearly.

Never use stables. Use paperclips if necessary.

If possible save programs on disk twice and call the second file "BACKUP".

Remember to label all disks with your name and the title of the program.

Always ensure that disks are well packaged. They should ideally be sent in a commercial disk mailer or at least packed between two pieces of hardboard or rigid plastic.

Please allow at least 8 weeks for acknowledgement as all programmes have to be thoroughly tested and made into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your programme to be returned.

★ Programming tips ★

Try to keep instructions within the program itself at a sensible level. You can expand on them within the accompanying text if necessary.

TEST your program before submitting them or even better get a friend to test them for you.

TREES

Martin Hailey

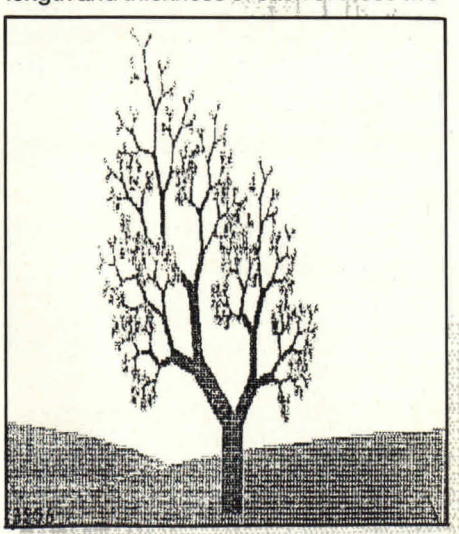
Trees may seem an esoteric subject for an Amiga user. However this is no ordinary gardening exercise but a neat idea that contains some interesting programming tips.

You can start adding trees to your Amiga enviroment without even getting mud on your wellies. There is a whole computerised forest of them here and each of them different.

You don't need green fingers and there are no long data statements to plant. Just type it in, save it and run. Once you have weeded out any syntax bugs you can sit back and enjoy the fruits of your labours.

The program runs in the section called "grow" with most of the work being done in the "branch" section. Like nature the program does not come to an end!!! However it will pause at a predetermined point and then it is up to you to play God and decide whether the tree is fully grown. The same Seed number will give exactly the same tree each time so you can always reproduce that perfect specimen of Prunus Amigadalus.

So what does it take to grow a tree? The idea is that at the end of each branch are two buds. These become two new branches which fork off at certain angles and each of them will be shorter and thinner than the branch from which it stemmed. By altering only the relative angle, length and thickness of each of these two new branches we get a large variety of tree like shapes, and a small cange to just one of the controlling factors can make a great difference to the completed shape.



The roots of the program are the arrays used to store information about each branch of the tree as it is formed. This is calcuated by taking the data from the parent branch using "gget", modifying it with one of the two sets of "genes" and saving it back to the arrays using "pput", together with the coordinates for the "buds" of what will be next two branches. The actual drawing of a branch uses compass point headings rather like a LOGO programme and the AREA command to plot the corners. A leaf is drawn at the end of each branch although this may get covered by the next branch.

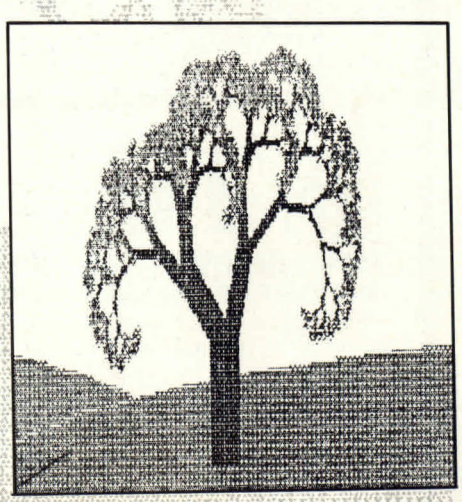
Although some of the variable names are rather long they have been chosen to help indicate their function. All the variables except those beginning with the letter "r" are declared as integers. This leads to clearer listings, a faster running program and reduces memory requirements. However two of the arrays, length() and thick() do need greater precision, so this data is stored and handled as values of 100 times the correct number and only scaled down for the plotting and drawing routines. This gives an effective precision of two decimal places and a memory saving of some 60 per cent.

Another feature of the arrays is that they are written at twice the rate they are read. Because of the "MOD" command there is a loop and soon data starts overwriting itself. The head does not catch the tail until it completes the second loop and has drawn 2000 branches, this is the point at which the programme pauses. If you choose to continue drawing there is one programme line just to prevent the mess caused by it reading and writing the same element of the arrays at the same time.

There can be confusion in writing AmigaBasic as to when to use Subprograms (CALL, SUB, and END SUB) and when Subroutines (GOSUB and RETURN). The advantages of the Subprogram have been listed in so many books and magazines that it almost seems wrong to use the "old fashioned" Subroutine. The "trees" programme uses both, and originally the "twig:" section was called as a Subprogram. The use of the "redirected RETURN" available in a Subroutine did away with the need for a flag to be tested after each call and proved a more elegant solution to the problem. It does however need treating carefully. If you nest more than one level of GOSUB and then use "RETURN label" to skip across the subroutines back to the main programme you will soon fill the stack with unused return addresses and have a visit from the GURU or even lock up the system completely.

Another point about Subprogram not usually mentioned is their lack of speed. Changing "twig" to a Subroutine ran the programme some 16 per cent faster. A similar gain in speed could probably be made by changing the "stem" Subprogram but computing, like gardening or fishing, has pleasures other than speed.

M.H.



continued on page 104

continued from page 103

```
'****************************************
'**                                    **
'**              TREES                 **
'**               by                   **
'**    Martin Hailey  January 1989     **
'**                                    **
'****************************************

landscape:
  SCREEN 1,640,260,2,2 : WINDOW 2,,,16,1

groundwork:
  CLEAR : DEFINT a-z : DEFSNG r
  DIM angle(1000),angle.gene(2)
  DIM length(1000),length.gene(2)
  DIM thick(1000),thick.gene(2)
  DIM budx(1000,2) : DIM budy(1000,2)
  radian=3.14159/180

catalogue:
  COLOR 1,0 : CLS : gget = 0 : pput = 1 : LOCATE 18,8
  PRINT "Use 'Space-bar' to pause"
  PRINT TAB(8);"or to continue drawing."
  PRINT : PRINT TAB(8);"Any other key to restart."
  LOCATE 8,8 : PRINT "Enter seed No.(1 to 32000) "
  PRINT : PRINT TAB(8);"or just press RETURN  ";
  INPUT" ",seed$
  CLS : seed = VAL(seed$) : IF seed THEN garden
  seed = (TIMER MOD 177)*(TIMER MOD 179)

garden:
  RANDOMIZE seed
  PALETTE 0,.7,.8,.95 : PALETTE 1,.2,.15,.1
  PALETTE 2,.5,.8,0 : PALETTE 3,.3,.7,0
  CIRCLE(10,250),290,2,.6,2,.17
  CIRCLE(639,255),500,2,1.5,2.9,.1
  PAINT(500,250),3,2
  LOCATE 28 : COLOR 1,3 : PRINT " Seed No.";seed;

gene1:
  angle.gene(1) = RND*40+10 : angle.gene(2) = RND*40+10
  IF angle.gene(1)+angle.gene(2)<30 THEN gene1

gene2:
  length.gene(1) = RND*40+50 : length.gene(2) = RND*40+50
  IF length.gene(1)+length.gene(2)<130 THEN gene2

gene3:
  thick.gene(1) = RND*50+40 : thick.gene(2) = RND*50+40
  IF thick.gene(1)+thick.gene(2)>130 THEN gene3
  IF thick.gene(1)+thick.gene(2)<100 THEN gene3

trunk:
  angle(0)  = 90 : length(0) = 4000 : thick(0)  = 1800
  budx(0,1) = 300 : budy(0,1) = 205
  budx(0,2) = 318 : budy(0,2) = 205
  LINE(300,245)-(318,205),1,bf

grow:
  key$ = "" : LOCATE 28,54 : PRINT SPACE$(6);
  WHILE key$ = "" : key$ = INKEY$

branch:
  FOR f=1 TO 2
    IF length(gget)<200 THEN prune
    x = budx(gget,f) : y = budy(gget,f)
    f2 = f*2-3 : IF y=0 THEN prune
    angle(pput) = angle(gget)-(angle.gene(f)*f2)
    heading = (angle(pput)+RND*30-15) MOD 360
    length(pput) = length(gget)*length.gene(f)/100
    thick(pput) = thick(gget)*thick.gene(f)/100
    long = length(pput)/100 : diam = thick(pput)/100
    GOSUB twig : CALL stem (heading,long)
    budx(pput,f) = x : budy(pput,f) = y : GOSUB twig
    CALL stem (((heading+f2*90) MOD 360),diam)
    budx(pput,3-f) = x : budy(pput,3-f) = y : GOSUB twig
    CALL stem (((heading+180) MOD 360),long) : GOSUB twig
    AREA(budx(gget,3-f),budy(gget,3-f)) : AREAFILL
    CIRCLE (budx(pput,f),budy(pput,f)),2,3,,,1.5
    pput = (pput+1) MOD 1000
prune:
  NEXT : gget = (gget+1) MOD 1000
  IF gget = pput THEN pput = (pput+1) MOD 1000
  IF gget = 0 THEN pause
  SWAP length.gene(1),length.gene(2)
  SWAP thick.gene(1),thick.gene(2)
  IF RND<.5 THEN SWAP angle.gene(1),angle.gene(2)
WEND
IF key$ <> " " THEN groundwork

pause:
  COLOR 1,3 : LOCATE 28,54 : PRINT "Paused";
  hold$ = "" : WHILE hold$ = "" : hold$ = INKEY$ : WEND
  IF hold$ = " " THEN grow
GOTO groundwork



twig:
  IF x<1 OR x>639 THEN cut
  IF y<1 OR y>255 THEN cut
  AREA(x,y)
RETURN

cut:
  AREAFILL : budy(pput,f) = 0
RETURN  prune


SUB stem (direction,distance) STATIC
  SHARED x,y,radian
  rx = COS(direction*radian) : x = x+rx*distance
  ry = SIN(direction*radian) : y = y-ry*distance
END SUB
```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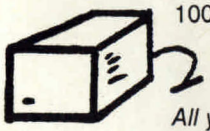

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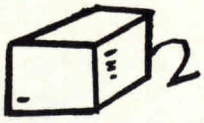

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172 NOW MUSIC #6
173 NOW MUSIC #7
174 SONIX JUKEBOX #7
175 SONIX JUKEBOX #8
176 SONIX JUKEBOX #9
177 SONIX JUKEBOX #10
178 UTILITIES #4
179 UTILITIES #5
180 UTILITIES #6
181 INTROS #3
182 INTROS #4
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184 INTROS #5
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MENTOR

Amiga Library Calls

A BASIC explanation

The Amiga's Microsoft BASIC is actually a very good implementation of the BASIC language but, like most interpreted languages, it suffers from some inherent disadvantages. Execution speed is one problem area... when you run a BASIC program each line of the program has to be interpreted into an equivalent series of machine language instructions – and this has to be done for every instruction. It is this translation overhead that makes it difficult to write good graphics programs using BASIC and leads to the adoption of other approaches. Another difficulty is that the Amiga has a lot of facilties which you just can't use via 'normal' BASIC statements.

Several things can be done! Firstly you can write your code in a compiled language such as C, secondly you can use assembly language for the ultimate control and execution speed, or thirdly you can use a 'mixed' approach. On the Amiga the first two options have distinct disadvantages... 68000K assembly language programming is complex, and if you want to write C programs you will need a compiler which is expensive.

By adopting BASIC as the main language and supplementing it with direct calls to Amiga system functions you can make up for some of the shortcomings of BASIC at a price you can afford – it will cost you nothing other than the time taken to find out how!

If you wanted to use a certain system call in the good old 'eight bit' days, the chances are that you would either use a simple function number arrangement (like CP/M's approach) or you would actually know the address of the routine to be called. As far as Amiga programmers are are concerned – those days are over... some of the routines are in ROM, some are placed into memory almost immediately the machine starts operating, and some are only taken from disk when they are actually needed! Routines which are loaded into memory will get placed into any convenient area that is available – so on the Amiga you cannot rely on their physical locations being fixed.

There are therefore two questions to answer: Firstly how do you find these system routines, and secondly how do you use them once you have found them? The answer to the first one is easy... the Amiga adopts a very systematic 'Library' based approach which requires that you supply the name of the routine rather than it's actual address. The Amiga's method of implementing libraries is complex and to understand it requires familiarity with 68K assembler or C. Fortunately, using the routines from BASIC is much easier to get to grips with – once you have seen how.

AmigaBASIC provides several statements which allow you to open and use the system libraries and it is these that are the key to the proper use of the library functions.

INDENTIFYING THE LOCATION OF THE FUNCTION

The Basic statement...

DECLARE FUNCTION name [parameter list] LIBRARY

causes Basic to search all open libraries for the specified routine. The parameter list is actually ignored by Basic (it's just used for documentation purposes) so often you'll not see any parameters specified. Let's take two examples... SetAPen() is a graphics library function which sets the colour of the foreground pen used for graphics rendering. RectFill() is another routine which fills in a rectangle using the foreground pen colour. In order to use these routines we have to tell Amiga Basic where they can be found, like this...

```
DECLARE FUNCTION SetAPen& LIBRARY
DECLARE FUNCTION RectFill& LIBRARY
```

OPENING THE LIBRARY

To open a library we use the LIBRARY statement. Each library will have a name, e.g. the graphics library is called "graphics.library" so to open it we would use...

```
LIBRARY "graphics.library"
```

When this statement is executed the Amiga will expect to find a file called graphics.bmap in the LIBS directory. The Basic Extras disk contains a utility for producing these ".bmap" files and it is well explained in the Basic manual. You will find however that a graphics.bmap file is already present in the 'demos' draw – so you can just copy that into the LIBS directory. If you want the ".bmap" file to reside somewhere else you will have to specify the path within the LIBRARY statement like this...

```
LIBRARY "RAM:graphics.library"
```

Once a library is open, you can use any function that is available in that library. These functions are documented in the "ROM Kernel Libraries and Devices" manual (published by Addison Wesley) but here are the details of the two routines which we will experiment with...

SetAPen& (rastport&, Colour)

This routine needs two parameters, Colour is just a colour number and suitable values will depend on the depth of the screen as per the usual Basic COLOR statement. The rastport parameter is a pointer (i.e. an address) to a drawing area and is obtained using the Basic WINDOW(8) statement like this...

```
rastport&=WINDOW(8)
SetAPen& (rastport&,2)
```

RectFill& (rastport&, x1, y1, x2, y2)

The four x/y parameters are the top left and lower right pixel co-ordinates of the rectangle to be filled in, i.e. they represent the points (x1, y1) and (x2, y2). To use the routine we just calculate our required co-ordinates and then pass them to the system routine along with the relevant rastport address.

TWO VERSIONS OF AN EXAMPLE PROGRAM

I have written two versions of a short text program that draws multi-coloured squares into a window. To create a working program we need to have a screen and a window available and so if we collect together all of these various requirements we end up with the general program description shown in figure 1.

```
DECLARE THE LIBRARY FUNCTIONS WHICH WILL BE USED
OPEN THE APPROPRIATE LIBRARY
OPEN A SCREEN
OPEN A WINDOW
USE NESTED LOOPS TO DRAW SOME GRAPHICS
CLOSE THE WINDOW
CLOSE THE SCREEN
CLOSE THE LIBRARY
END THE PROGRAM
```

Figure 1: The overall plan used by the example program

Well that is how it works... the first program (shown in figure 2) uses a set of nested FOR/NEXT loops together with Basic's AREA and AREAFILL commands to create a test pattern of overlaid multi-coloured squares. The second example (figure 3) is the same program written using the equivalent library calls.

S.M.

Follow that Mouse

A program can monitor the activity of the mouse simply by asking Intuition to provide the necessary details. Getting Intuition to provide such information is quite easy and this month we'll show you exactly how it's done. For our example we are going to create a 'doodling program' which allows a user to draw multi-coloured, i.e. rainbow effect, free-hand lines by holding the left mouse button down whilst moving the mouse.

In order to do this we will need to determine both the co-ordinates of the mouse and the state of the mouse buttons — so the first job is to ensure that we include appropriate flags in the NewWindow structure.

NewWindow Flags

We are going to get our messages via the IDCMP (Intuition's Direct Communication Message Ports) so we need to include MOUSEBUTTONS, and MOUSEMOVE flags in the NewWindow structure's IDCMP flags field. REPORTMOUSE needs to be set in the window flags and, since we will not be using any menu operations, we'll set the RMBTRAP flag as well. We are going to want a close gadget on our display — so we must also include WINDOWCLOSE in the window flags and CLOSEWINDOW in the IDCMP flags. These latter two flags ensure that we both get the close gadget in the window display and receive the appropriate IntuiMessages about it.

Collecting the data

Now that we are certain of being offered the right messages we need to worry about collecting and using them. The pattern used should be familiar to A.U.I. readers..... We wait() for the messages to arrive, identify their class, take out any other information we need, reply to the message, and then use the information we've extracted. Our standard approach for this is based on the use of a Switch statement enclosed in a doubly nested do-while loop.

The example code can be inserted directly into our 'Test Bed' program (see listing in the October 88 issue) which, with a few minor alterations, provides the resource handling for the example. The alterations needed are firstly that the flags in the NewWindow structure need to be changed to those given this month and secondly that the declarations for the new variables used have to be added to the source.

How the Program works

When the state of the left mouse button is altered we will get a MOUSEBUTTONS message with a code field of either SELECTUP or SELECTDOWN. This value is used to set or clear a boolean variable called 'write-flag'. When write-flag is TRUE we join co-ordinate points together using the graphics Draw() function and use SetAPen() to change the colour of the foreground pen with each new pair of mouse co-ordinates received. When write-flag is FALSE, i.e. when the left mouse button is up, the Move() function is used to just update the pen position. The net effect is that we only actually draw anything on the screen whilst the left mouse button is being held down and that whilst we are drawing the pen will continually change it's colour.

P.A.O.

```
/* ------------------------------------------------------------ */

            /*      This is the 'Doodle-Draw' test code      */

do {
    mousemoved=FALSE;
    Wait(1<<global_window_p->UserPort->mp_SigBit);
    message=GetMsg(global_window_p->UserPort);
    do {
        class = message->Class;
        code  = message->Code;
            x = message->MouseX;
            y = message->MouseY;

        ReplyMsg(message);

        if(class==MOUSEMOVE) {mousemoved=TRUE;}

        else {
```

continued on page 112

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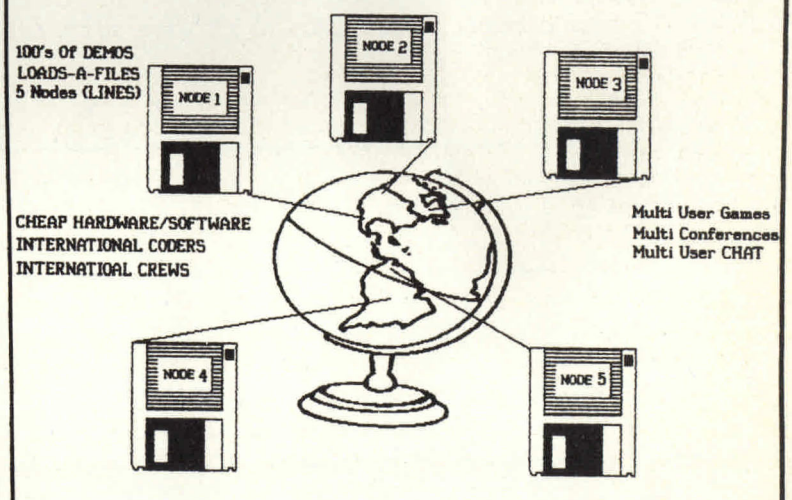

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continued from page 110

```
                switch(class)
                   {

                   case  CLOSEWINDOW: message=NULL;exit_flag=TRUE; break;

                   case  MOUSEBUTTONS:

                      if (code==SELECTDOWN) {write_flag=TRUE;}
                          else{write_flag=FALSE;join_flag=FALSE;}
                      break;

                      default: break;
                   }

                }

          message=GetMsg(global_window_p->UserPort);

        }while(message);

        if(mousemoved==TRUE)

                      {

                      if (write_flag){
                      SetAPen(global_rastport_p,++colour & (1<<SCREENPLANES));
                                  if(join_flag) {Draw(global_rastport_p,x,y);}
                                    else {Move(global_rastport_p,x,y);}
                                 join_flag=TRUE;
                                 }

                      }

    }while(!exit_flag);

    end_block(); exit(TRUE); /* give back resources and quit */

    }

    /* ------------------------------------------------------------------ */


    /* ------------------------------------------------------------------ */

         /* Flags in the Test Bed program have to be changed as follows */

    struct NewWindow NewWindow = {
       0,0,   /* window XY origin relative to TopLeft of screen */
       SCREENWIDTH,SCREENHEIGHT, /* window width and height */
       -1,-1,   /* detail and block pens same as screen */
       CLOSEWINDOW+MOUSEMOVE+MOUSEBUTTONS,   /* IDCMP flags */
       RMBTRAP+WINDOWCLOSE+REPORTMOUSE+NOCAREREFRESH+SMART_REFRESH,   /* window flags */
       NULL,   /* first gadget in gadget list */
       NULL,   /* custom CHECKMARK imagery */
       NULL,   /* window title */
       NULL,   /* custom screen - resource handler will set this at run-time */
       NULL,   /* custom bitmap */
       SCREENWIDTH,SCREENHEIGHT, /* minimum width and height */
       SCREENWIDTH,SCREENHEIGHT, /* maximum width and height */
       CUSTOMSCREEN   /* destination screen type */
    };
```

MENTOR

Follow that Mouse

```
/* ------------------------------------------------------------------ */


/* ------------------------------------------------------------------ */

    /*  Additional declarations are needed for the new variables   */

main()

{

ULONG   class,x,y,colour=1;
WORD    code;
BOOL    mousemoved,join_flag=FALSE,write_flag=FALSE,exit_flag=FALSE,
        allocate_resource(),begin_block();
void    end_block();
struct IntuiMessage *message,*GetMsg();

if (begin_block()==TRUE) exit(FALSE); /* grab required resources or quit */

/* ------------------------------------------------------------------ */
```


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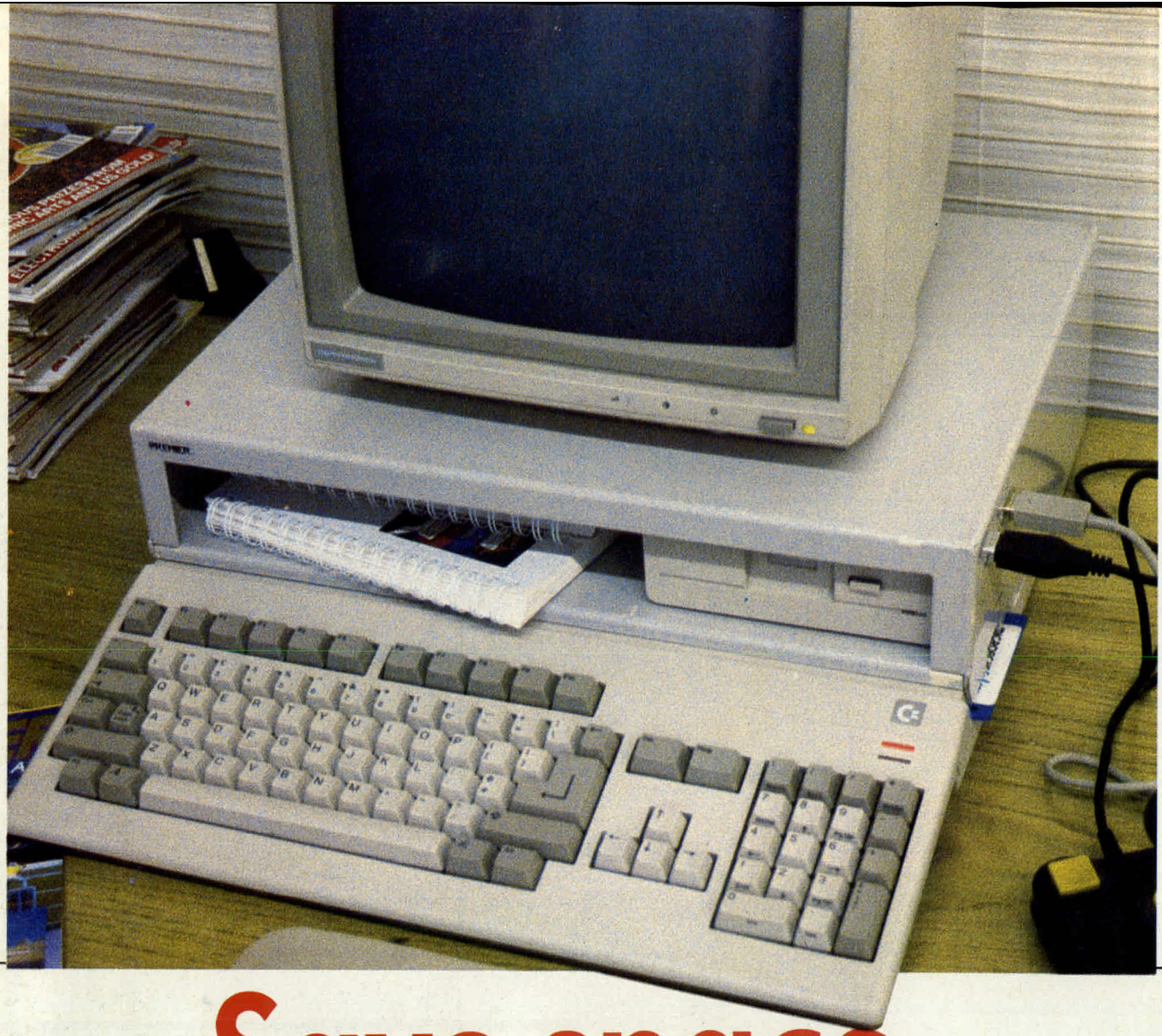

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