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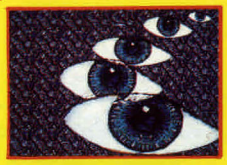

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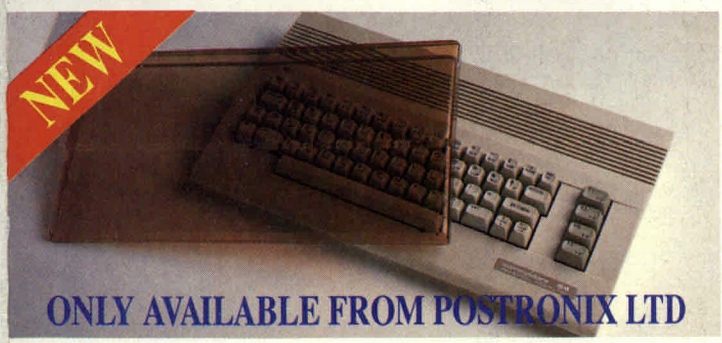

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MAY 1989 Volume 3 Number 5

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THE AMIGA DIMENSION

Like a sunburst...The spectacular glories of the Amiga are sparkling more brilliantly all the time. Some Amiga users argue that graphics and animation are the real heart of the machine. The opinion seems to be shared by many of the developers too, for in this issue, ***AUI*** has a special section covering the latest and most impressive software to arrive for the Amiga.

Much of this growing wave of visual progress was seen at the New York AmiExpo where the excitement it aroused was noticable among the packed halls. One new package, a piece of software of both historic and current importance was not there but has been launched this month and will no doubt have as wide a success as its predecessors – Electronic Arts' astonishing DeluxePaint III.

It can be argued that Dan Silva, the creator of the DeluxePaint series has had as much influence on the progress of the Amiga as any single person. Certainly when considering the remarkable graphic talents of this blitter-based computer, one can wonder whether it would have survived its substantial period of difficult public acceptance without the ease of use and immediate accomplishment that DeluxePaint I provided. Is there an Amiga user anywhere who does not posses this seminal package – even if only in "copied" form?

At its price – around £80 in the U.K and about $149 U.S., DPIII will undoubtedly make a huge impact, especially among new Amiga users for it will reach a very wide audience.

At the other end of the scale, products like Byte by Byte's Sculpt 4D are creating an increasing following in the professional field of graphics, where the Amiga is receiving an increasingly warm reception as a highly effective and astonishingly low-priced element of the high cost professional equipment used in areas such as advertising and T.V.

We have in the course of preparing the Special Graphics and Animation Section for this ***AUI*** piled up far more material than we could include so we shall be continuing to cover this excitingly visual side of the Amiga in the next issue of ***AUI***, including the possibility of an interview with Dan Silva himself and the exclusive review of a new and exceptionally interesting package about to be released.

The New York AmiExpo was not solely devoted to Graphics and Animation, there were plenty of other eye catching moments too including early views of the interesting Pagestream DT publishing package, now at last in finished form. That too should appear in the next issue of ***AUI***.

Oddly, though there was a rush of very high quality developments at the show, among those who are supposed to know what is going on, was the rumour that the Amiga sales, at least in the U.S., are supposed to have slowed down. At one time the criticism of the Amiga was that there was "no software". Now there is plenty and the computer world starts to whisper that it is the machine that the public does not want. There has, of course, almost from the beginning been at least a sufficiency of software, and from the biggest attendance at an AmiExpo ever in New York one could draw obvious conclusions as to the popularity of the computer.

The Amiga is certainly making a high impact with its graphic and animation talents but it might also be claimed that it is having equally spectacular success as a source of interesting rumours. In the graphics area, the rule is that seeing is believing. So it should be with rumours and I can assure you that in New York, with its record audience of Amiga users, the increasing not decreasing popularity of the Amiga could be clearly seen and believed.

Antony Jacobson
Managing Editor and Publisher

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NEWSFILE

2400zi Internal Modem

Supra Corporation, manufacturer of the SupraModem 2400 and SupraDrive Hard Disk Systems has announced immediate availability of its SupraModem 2400zi internal modem for Amiga 2000 series computers. The SupraModem 2400zi is 100% Hayes-Compatible and retails for $179.95(US).

The SupraModem 2400zi is a half-card that supports asynchronous operation at 2400, 1200, and 300 baud. Custom configurations are created by issuing simple commands – eliminating bothersome DIP switches. Configurations can then be stored in the modem's nonvolatile memory so that they are loaded every time the modem is turned on or reset.

Contact: Supra Corporation, 1133 Commercial Way, Albany, OR 97321 (USA), Tel.(503)967-9075.

More Neural Network News

Neural networks, it is claimed, will revolutionise industrial data-processing and ten European companies and research institutes have united in a new project.

ANNIE – the Application of Neural Networks for Industry in Europe – an EC project with the objective to pursue research into the industrial applications of neural networks. The aim of the prospect is to progress further work already carried out in this field by European industry, which lags slightly behind the US.

The UK's Harwell Laboratories has overall responsibility for the project and KPMG will act as co-ordinator. The other participants are IBP-Pietsch GmbH and the Darmstadt Institute of Technology, British Aerospace and Artificial Intelligence from Great Britain, CETIM from France and Alpha and NTU from Greece.

Neural networks differ from conventional technology by processing information in the computer in parallel rather than in series. Their natural model is the human brain and its mode of operation. Initial research in this field was done as early as the nineteen fifties.

This novel mode of data processing could lead to greatly enhanced computer performance. Data resources can be more easily accessed and safeguarded against failure owing to decentralised configuration. Data no longer reside at precisely defined memory addresses, but are stored in intelligent connections – weighted couplings of simple processor elements which can be changed. This allows the computer to modify and augment its 'knowledge' by incoming information during operation.

The main objectives of ANNIE are:

– investigating general applications in industry

– providing a convincing demonstration of the performance of network structures by comparing representative applications with conventional solutions;

– developing software tools.

The total cost of the project will be ECU 5m (approximately DM10.34m). Siemens is investing DM1.8m over a period of three years in ANNIE; some DM900,000 of this come from its own resources, the other half from EC investment aid.

HEY HOMBRE!

Over the last 18 months Gordon Harwood Computers have become leading suppliers of Comodore Amigas and associated peripherals in the mail order marketplace.

During this time more observnt readers may have noticed a friendly little Mexican tucked away in the company's advertisements who, until now, hasn't said an awful lot or even had a name to call his own.

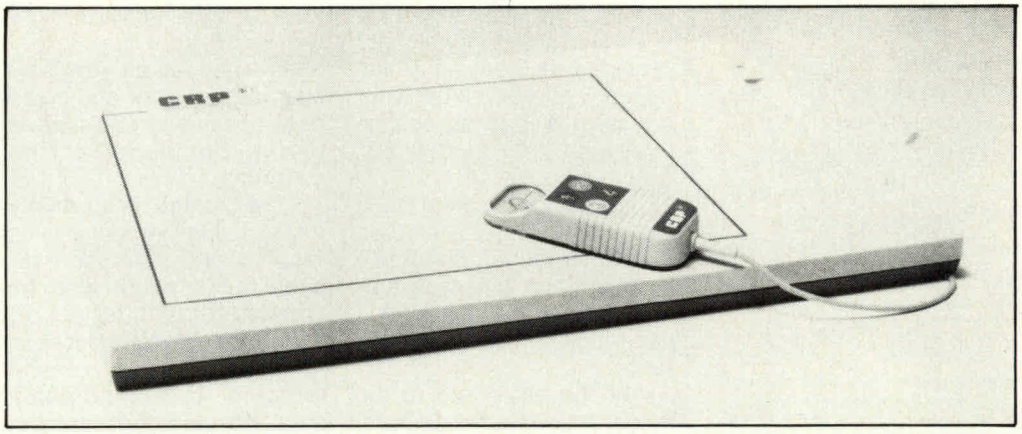
Harwood say soon you'll be seeing more of this little hombre, the only problem is that Gordon Harwoods just can't think of a suitable name for him. Harwoods are asking for suggestions, on the proverbial postcard, and the winner will be awarded a special prize of the first special offer that their hombre features!

Send your suggestion(s) of a name for Harwood's hombre to: Gordon Harwood Computers, 69-71 High Street, Alfreton, Derbys, DE5 7DP.

GRAPHICS TABLET

The world's first graphics tablet designed specifically for the Amiga is now available in the UK. Developed in Germany, the CRP Graphics Tablet comes in two models – one for A3 work, the other for A4. And because it was created exclusively for the Amiga, it will work with all the leading paint, CAD and layout software packages available for the Amiga range.

The tablet's surface is not only non-magnetic but also virtually indestructable – so allowing the likes of hot coffee to be easily wiped off without causing damage. It also features "absolute zero", the facility which enables the user to specify two points between which a line can then be drawn automatically. And the user can scale the surface and select either a horizontal or vertical aspect.



The CRP Tablet comes complete with an interface lead – for the Amiga 500, 1000 and 2000 – a steel tipped pen with an alternative ball pont nib, software driver and instruction manual. It also has a dual adaptor to connect the pen and an optional puck. When linked to the tablet, the four button puck provides a superior alternative to a mouse in that it offers a far higher degree of accuracy for precise drawing. The CRP Graphics Tablet is known as the "mouse killer" within the German computer graphics community.

The A4 model costs £395 plus VAT, while the A3 version carries a price tag of £595 plus VAT – with the optional puck adding an extra £85 plus VAT.

Exclusive UK distributors of the CRP Graphics Tablets are Amiga specialists, Burocare Graphic Design of 211 Kenton Road, Harrow, Middlesex, HA3 OHD. Tel: 01 907 3636.

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Photon Video: EDLP

What, you ask, is EDLP? Some strange new disease? The name of the diner on the corner? No. It is the Photon Video: Edit Decision List Processor (EDLP), recently announced by MicroIllusions.

Photon Video: Edit Decision List Processor (EDLP) simplifies a vital step in the creation of professionallyedited video, the company claims. On-line video editing time can be extremely expensive, so a well-prepared edit decision list can save hundreds of dollars!

It works this way: your film or video will be made up of countless bits and pieces taken from several different reels. An edit decision list tells the editing hardware which piece from which reel goes where and when. Creating such a list can be tedious when done by hand, and installing the list in the editing machine manually can create an unnecessarily high fee.

With EDLP, create your own edit decision lists off-line, even at home. Then transfer them to an on-line editing system via the serial port, or via an MS-DOS compatible floppy disk. Once the on-line editing is complete, you can transfer the list back to EDLP for printout and archival storage.

Photon Video EDLP works with 30 frame NTSC (drop-,non-drop and mixed frame modes), 25 frame EBU (PAL) and 24 frame film modes. EDLP supports the CMX, ISC, Convergence, United Media and Grass Valley Group EDL formats.

Photon Video EDLP will be shipping for the Amiga shortly. Price: $499.95.

World Snooker

Steve Davis World Snooker by CDS is a folow up to Steve Davis Snooker.

Steve Davis World Snooker also takes you into the challenging world of Pool and Billiards. You will be able to play against a friend or Steve Davis himself in the UK and American Pool, UK Billiards and Carom (what no pockets!) as well as Snooker.

Steve's skill at snooker, and other baize events, have been programmed into this superb game. Your skills will be put to the ultimate test as you compete against a formidable opponent.

Price: £19.99. Available for the Amiga.

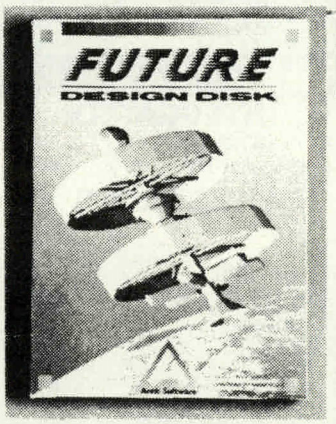
3D Design Disks

ISM announced the release of a series of professionally designed 3D models and components that can be used with Aegis Videoscape 3D and modeler 3D and Byte by Byte's and Sculpt-Animate 3D.

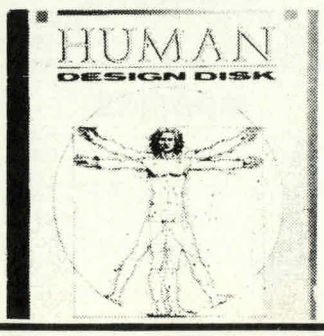
Published by Antic Software of San Franscisco they save time and give professional tools to the Amiga user.

Architectural Design: Creates 3D houses or city designs from the ground up. Includes doors, windows, arches, roofs, walls, stairways and a variety of architectural components.

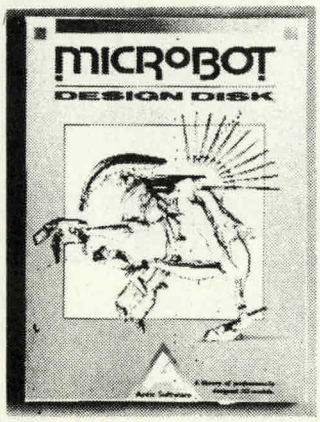
Future Design: Everything you need for your very own 3D futurescape. Build spacecraft, space stations, bases, vehicles, robots, and androids with a host of modules included.



Human Design: Populate your 3D universe. Complete male and female prototypes with complex head and hand structures for startling realism and detail. Modify figures to create infinite variety.



Microbot Design: Advanced robotic designs and component parts are featured allowing designs limited only by your imagination. Detailed construction kit to create your own personal robots.



Price: £24.95, Contact: ISM, Grove House, Ventnor Road, Apse Heath, Isle of Wight, PO36 OJT.

Intel takes a new Risc

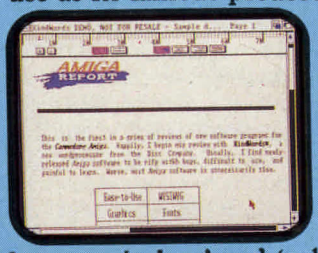
Intel has announced a 486r chip, the Risc processor codenamed N10, at San Arts on IBM.

The chip is a 64-bit Risc-based devie running at 50Mhz, and includes an on-board 3D graphics unit which will make machines using it much faster than the current generation of CAD/CAM workstations. Although initially the chip, because of its price ($750), is likely to be used in high end machines, ultimately its graphics capabilities will probably be used to produce faster and cleaner windowing interfaces for other machines.

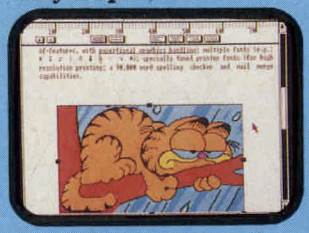
The N10 is not compatible with the 386, while the full 486, due for announcement in the near future, is, as the two new chips have a great deal in common architecturally.

KINDWORDS

Impressive reviews? They'll be lost for words when they see the new KindWords 2.0. It's still as easy to use as its famous predecessor but now boasts a new 100,000 word English dictionary licensed from Collins, a 470,000 word thesaurus and automatic hyphenation.

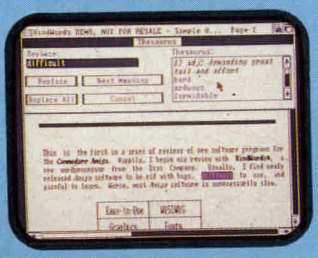


So it knows the difference between 'colors' and 'colours' and how to use them. Because with KindWords you can easily import graphics into your text documents and produce professional documents that really impress.



As it was designed specifically for the Amiga, KindWords works with your computer, not against it. Pull down menus and full help facilities are used to the maximum advantages – so advanced features such as spell checking and mail merging are easily accomplished.

There's a new extensive font library which combines with graphic editing facilities that make KindWords an extraordinary word processor at an unbelievable price.



Which only goes to prove that sometimes you should believe what you read in the press.

Existing KindWords users can upgrade their software for £14.95 inc VAT by calling 010 331 455 310 53 or write to Disc Company Europe, 1 rue du Dôme 75116, Paris, France. Visa, American Express accepted.

Dealers should call Amiga Centre 031-557 4242, GEM 0279-412441, HB Marketing 0895-444433, Microdealer 0908-74000 or SDL 01-300 3399.

Price
£49.95
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THE DISC COMPANY

MORE KINDWORDS

"The excellent KindWords includes everything you'd expect to see in an Amiga word processor with many extras."

ST Amiga Format

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Amiga Computing

"KindWords is stylish and uncluttered... simple and elegant with a lot going for it... KindWords is a program written with care, everything about it shows consideration for the user."

Amiga User International

"I found KindWords both powerful and flexible... I think most users will be delighted with KindWords' logical design and power."

Commodore Magazine

"KindWords Superfonts produce attractive, high-quality printouts even from inexpensive dot-matrix printers."

Amiga World

WHITE PANTHER SPRINGS

Following the extremely successful launch of INFINITY in March for BBC B/Master, White Panther Publishing have announced the release of 2 new programs.

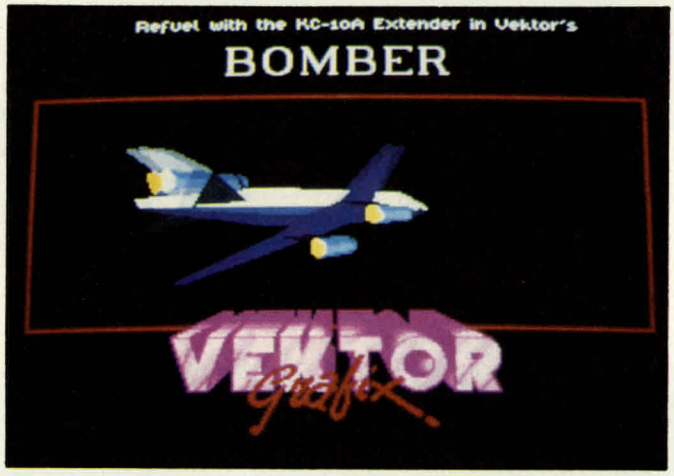
CITY is initially released for IBM/Compatible formats at £29.99. Conversions to other formats are under way and will follow in the summer. CITY is a simulation of the Stock Market and also offers an option to play the International Money Markets. The simulation allows one to four players to trade in shares at various levels of expertise up to Tycoon. Monthly, quarterly and annual results are measured. Taxes, indexes and insurances are applied as well as brokerage costs. Results are analysed and shown graphically.

QUASAR is programmed for the Amiga and will also be released in May on Atari ST format with both versions at £19.99. It makes full use of the Amiga graphic and sound capabilities to present fast moving scrolling arcade action. There are five sectors, each one presenting a different scenario, to pass through; and several modes of weapon, as well as force shields, star bombs and finally the orb.

BOMBER

Nearing completion on six formats following nine months development is BOMBER, a multi-aircraft flight simulator with the accent on action.

The game will feature aircraft as the Tornado IDS (Britain's MRCA front line strike aircraft), the F-4 Phantom, the F-111F Aardvark (the bomber which was used to attack Libya) and uniquely, the Mig-27 Flogger D (the Soviet Block low level attack aircraft).



Whereas most flight simulators concentrate on fighter aircraft, (Interceptor, Falcon, Jet etc.) BOMBER, as the name suggests, is angled towards the interdictor/strike multi-role aeroplane.

So far no confirmed release date has been decided but BOMBER will appear on the Activision label. It's first public showing is likely to be the Summer CES in Chicago.

DYNAMICS

Dynamics Marketing Limited has introduced a new joystick, with an extending connection cable, called the Competition Pro PC. Based on the Company's best-selling Competition Pro 5000, the new unit has an attractive two-tone grey colour scheme and is suitable for use with Amiga and Commodore computers. The RRP of this is set at £15.95 (incl. VAT).

Another new product from Oldham-based Dynamics Marketing is the "A-D Games Card", an easily-installed printed circuit board, designed to interface digital joysticks with computers such as the IBM-PC, AT, XT and compatibles. Featuring twin plugs for 2-joystick operation, the new A-D Games Card will do away with the need to 'fine tune' the joystick as is required with analogue versions.

Price: £24.95 RRP (including VAT). The A-D Games Card also features a switchable slow-motion action facility.

The third new product from the company is more of a package deal, with its components offering a particularly good value deal. The package consists of the new Competition Pro PC Joystick, the A-D Games Card and four top-selling computer games: Wizzball, Tai-Pan, Victory Road and Baseball. Price: RRP £49.95 (incl VAT).

Amiga Slides

A British programming team has achieved a world first by developing software to allow the Amiga to generate colour slides of its computer graphics almost instantly, Burocare Graphics Design tell us:

This breakthrough involves linking the Polaroid Palette - the best-selling slide, print and overhead transparency originator - directly into the back of the Amiga.

Whereas this operation has been attempted before using an interface box, the previous method was not satisfactory because the device drained the signals.

However, this problem has been eliminated by the new "Screenshot" software driver designed by Burocare Graphics Design, the Harrow-based Amiga specialists.

The latest innovative package from Burocare - known as the Polaroid Palette Computer Image Recorder - can produce 12 35mm slides, prints or overhead transparencies in less than half an hour. And that includes exposing, developing and mounting time.

And such is the quality that the end result can be blown up to poster size if required.

The image recorder can also generate batch files, so allowing the system to be left unattended to churn out prints to order.

Working in all modes, this means it can even utilise the Amiga specific HAM (Hold and Modify) facility which offers up to 4,096 colours.

Price: £1,495 (plus VAT), including Amiga interface, Polaroid Palette Image Recorder, Polaroid dedicated 35mm autowind camera back, Polaroid 3 1/4" x 4 1/4" print and overhead projection transparency camera, 35mm Auto Power Processor, illuminated slide cutter/mounter, software and manual. Contact: Burocare Graphics Design Limited, 211 Kenton Road, Harrow, Middlesex HA3 0HD. Tel: 01-907 3636.

Worldwide Bridge Contest

For the fourth successive year, Epson is sponsoring the one-day Worldwide Bridge Contest which, according to Epson, last year attracted over 80,000 players around the world in venues as far apart as Moscow and New York, Melbourne and Reykjavik. The UK alone saw over 8,000 players take part at 286 heats of the Contest.

This year's Contest takes place on Friday 9th June. To attract the public to the game of bridge, and as an encouragement to novice players and social players who have not taken part in a major duplicate bridge contest, in June, Epson are running special "No Fear" heats in British clubs, the company tells us.

The "No Fear" heats will play the same set of bridge hands as in the main duplicate contest but in smaller groups and without the pressure of their scores being fed into the worldwide system.

THE BATTLE LINES ARE DRAWN!

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Command vast armies of samurai warriors, defend yourself against Ninja assassins, lay seige against mighty fortresses, negotiate alliances and confront your enemies in personal combat.

All this and more in the latest epic from Cinemaware.

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Coming soon for the PC, C64 and ST.

Headway House, 66–73 Shoe Lane, London EC4P 4AB, England.

KICK OFF

KICK OFF is a soccer simulator with emphasis on the accuracy, realism, pace and tactical game play, Anco tell us.

The main features of the game are a full size multi directional scrolling pitch. The scanner shows position of all the players on the pitch. Four distinct tactics including the sweeper formation. Each player on the pitch is an individual with individual skills, a unique combination of four attributes – Pace, Stamina, Accuracy and Aggression. Five skill levels. Skill levels of both teams are set separately, an opportunity for some very interesting games.

The players can dribble, shoot, pass, head and chip the ball and do the sliding tackles. The ball take full account of the air and ground friction. At the higher levels, there is a breeze changing direction randomly. ONE or TWO players option, Practice Skills, Practice Penalties, Play Single game or Play in LEAGUE competition. A league of 8 teams. Load and Save options for unlimited number of leagues. The team names can be edited.

New Horizons Software Promotes Sales Director

New Horizons Software promoted Debbie R. Miller to Director of Sales today. Debbie joined the company in February of last year from Byte to Byte Corporation. Her duties comprise of all aspects of sales.

"Debbie epitomizes enthusiasm. She is a driven believer in the Amiga and in the New Horizons product line. Debbie has been a dedicated member of the Amiga development community for over three years and she has the contacts to prove it. She is an important asset and we feel fortunate to have her talents on our side." said Brian N. Sarrazin, Vice President, Sales & Marketing.

New Horizons Software, makers of one of the Amigas best-selling word processors, ProWrite, are adding a number of new products to their line. The first of these are ProFonts I and ProFonts II. These are high quality bit-mapped fopnts for non-Postscript printers. Currently available from New Horizons are ProWrite 2.0, Flow 2.0, ProScript, ProFonts I, and ProFonts II. Debbie Miller is responsible for both domestic and international sales of these as well as forthcoming products.

This is a new position. New Horizons attributes the need for a Director of Sales to the company's fast growth pace.

Another 'Risc'y venture?

Motorola is now a player in the supercomputer scramble with the launch of its own series of machines, the Delta Series 8000.

The machines based on Motorola's 88100 Risc chip are being promoted by Motorola as a standard for the next generation of Unix machines. Motorola will sell the machines in the US at prices ranging from $28,000 for a single processor multi-user system to $80,000 for a four-processor system. Top-end configurations can handle up to 500 users, the company claims.

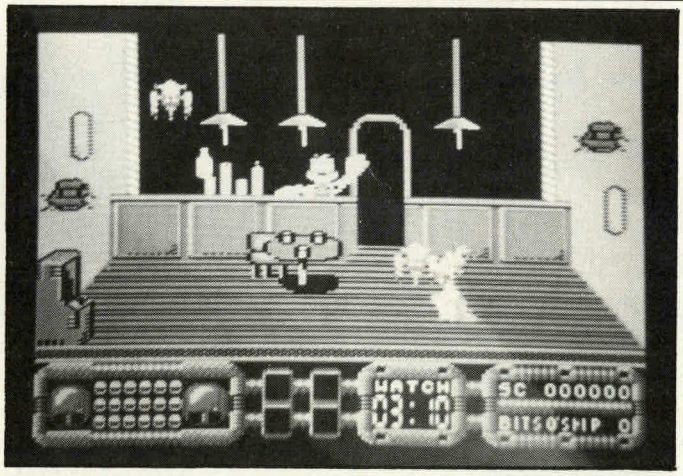
Gilbert Comes to Earth

Gilbert the Alien, star of the TV series Get Fresh and Gilbert's Fridge wants to return to Earth in order to make another TV series, but his fellow Drillians, green and slimy with envy, want to stop him. Now computer games players everywhere, thanks to Again Again and Enigma Variations, can come to Gilbert's rescue.

The game entitled 'Gilbert – Escape from Drill' was produced by new software company Enigma Variations, who are made up of Mark Greenshields and Richard Naylor, and will be marketed by Again Again.

Talk, talk, talk. Rabbit, rabbit, rabbit. Will Gilbert never shut up about his time on Earth? Luckily, even Gilbert has to stop for breath and just asa things are getting back to normal a telly-gram arrives from Earth to invite Gilbert back to do a new series. That's done it. The Drillians can take no more. They decide that the only way to avoid another Winter of Gilbert's bragging is to stop him from getting to the Tyne Tees Television Studios and signing his contract.

The Milleniums Dustbin has certain important parts removed (well wouldn't you class the toilet as important?) and spread about the planet of Drill. The Drillians remain tight lipped about it (not easy when you have a mouth the size of Gilbert's) but, being jolly sporting types,. they give him the chance to find some clue as to the whereabouts of the missing pieces. All Drillians love a good video game and so they decide that if Gilbert can beat them at their favourite arcade game they will give him a clue but if he loses then he will have an hour taken off his time.



It all sounds very easy to a being with a brainbox the size of Gilbert's until he realises that he must reach Earth within 24 hours otherwise the contract will be given to another "Superstar".

The missing pieces are spread all over the planet Drill and Gilbert must run, jump, float and swim his way around if he is to succeed. If he manages to find all the missing pieces in time he will be awarded with a new contract from Tyne Tees TV.

Gilbert – Escape from Drill, will be available in mid-April, price C64 £9.99 (C), £14.99 (D), and £19.99 for the Amiga.

Evesham Micros

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PRINTERS

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LC10

Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (with 96 print combinations) at 36cps and 144cps draft. Has a large 4K buffer and IBM/parallel interface buiilt in, includes a comprehensive front panel operation and features paper parking, allowing single sheets to be used without removing tractor paper.

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Stan NX-15 good value wide carriage 9 pin printer	£329.00
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Cameron Handy Scanner Type 4, 64mm wide, scans up to 400dpi with 16 grey scales, inc. Paint & OCR software	£329.00
Vidi-Amiga, multi-tone video frame grabber, with software	£95.00
Word Perfect	£149.95
Superbase Personal	£69.00
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Superb quality, stylish medium resolution FST colour TV/monitor to suit the Amiga or Atari ST. Features teletext, full infra-red remote control, Euroconnector, Video/Audio input and headphone output connectors, 40 tuner presets, external aerial connector and a loop aerial. Supplied with cable (please state computer type when ordering).

SPECIAL OFFER! £269.00 includes VAT and computer connection lead

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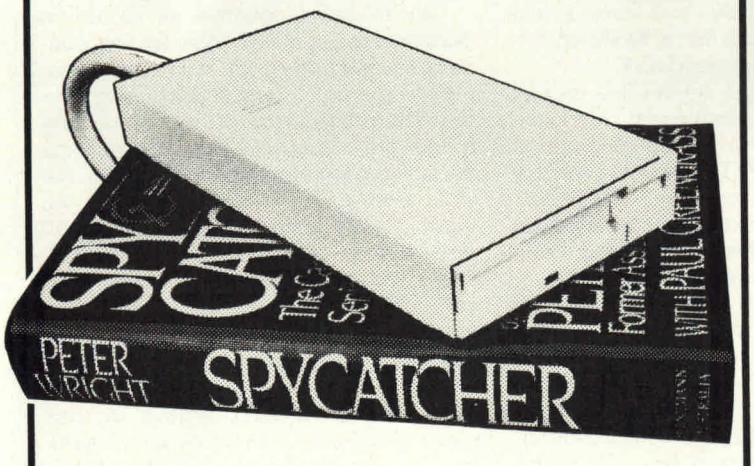

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Cumana 5.25" External Floppy Disk Drives

(model CAS 1000 S)

We are now supplying whisper quiet slimline 5.25" floppy drives for tne Amiga user from Cumana. The 'Transformer' compatible drive features an integral power supply, 40/80 track switching, 360/720K formatted storage capacity and throughport connector. It also has an on/off switch which effectively unplugs the drive from the Amiga when it is not required.

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Project D

disk backup utility

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Probably the best and most complete 3.5" disk copier for the Amiga user. Can even copy MS-DOS, Atari ST, CP/M, Xenix and Archimedes disks. Because of the high specification of the Amiga drive, this copier is probably the best for the Archimedes or ST. Also includes track editor. Updates will be available in the future as and when new software protection schemes arise.

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10 Bulk packed DS/DD 3.5" disks with labels, fully guaranteed	£11.95
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That BAD!

A new disk enhancer claims to make AmigaDOS disks run up to 500 per cent faster, Mark Smiddy investigates...

AmigaDOS is many things. At best it can handle very long filenames, has no upper limit for the number of filenames in a directory and load files at extremely high speed - provided it knows whereabouts those files are stored on the disk. The problem is AmigaDOS tends to place file information rather haphazardly on the disk, wherever there happens to be room for it, in fact.

Even directories can literally get spread about all over the place. To locate a given file or directory AmigaDOS may have to root around all over the disk to get the information. For this reason, simply getting a directory can be a major task.

In less advanced systems, most notably the Atari ST and MS-DOS, a much simpler system is employed. Here each directory can hold a specific number of entries and, as each is created, a fixed number of contiguous sectors are reserved for storage of filenames, date stamps, file lengths and the starting sector number.

In this system, filenames are limited to 11 characters in length - 8 for the name plus 3 for the extension. The advantage is, it is very easy to locate a given file quickly. Also, the directory can be listed very quickly since the whole thing is stored as a simple table.

"But, at long last there is a solution! B.A.D. from M.V. Micro, is a special program – simple enough for anyone to use – which can alleviate these problems once and for all."

For the average user of course, this information is of little use. All they ever see is the considerable amount of disk thrashing AmigaDOS goes through every time a disk icon or drawer is opened. Similarly, every time the Amiga is booted, the system executes a long series of commands stored in a special script file - Startup–sequence. This means it has to go hunting around the disk for all sorts of data - slowing the whole process down to a crawl.

But, at long last there is a solution! B.A.D. from M.V. Micro, is a special program - simple enough for anyone to use - which can alleviate these problems once and for all. The authors claim the performance of any AmigaDOS disk can be increased by up to 500 (yes, five hundred) per cent - but they would. They also add, B.A.D. is not a RAM cache system and permanently improves the speed of any disk it is used on - even a hard disk.

The B.A.D. system is supplied on 1 optimised disk accompanied by a very simple - although clear - manual. Further instructions, intended for more expert users are supplied on disk as README files.

The program loads very quickly and presents a very simple screen. There are only 5 options in total - including Blitz (start) and Quit. The first is deciding what drive type of drive will be worked on: hard or floppy. Next, if the floppy option is chosen (this is the default) the source and destination drives are selected. The system normally works by copying data from one drive to another; single drive use is possible at the cost of a severe drop in performance. Finally you can select whether to optimise for a Workbench - icon driven - or CLI based disk.

Once ready, click on the Blitz gadget and the program does the rest. During the whole process, the user is kept informed of what is going on. There is not even any need to format the destination disk, B.A.D. does this automatically if necessary. After around 3-4 minutes the process stops and the new disk is ready for action.

B.A.D. works by reorganising the data and files on a disk in a more logical order, so AmigaDOS does not have to go thrashing around just to find the information it wants. As a best case example, AmigaDOS can read everything sequentially - no need to hunt around - and it does this extremely quickly, hence the claimed 500 per cent increase in speed.

When the user decides to optimise a Workbench disk, the program gives preference to the .INFO files that make up the Workbench icons. Interesting enough though, due to the nature of the main Workbench disk, it may be better to optimise it as a CLI disk. This can - and does - streamline the boot sequence noticeably, with the desirable result, Workbench appears much faster.

Of course there had to be a catch, and here it is. B.A.D. needs at least two drives and 512k to work properly. And, if you intend to organise a hard disk, at least 1Mb is required. Finally if B.A.D. encounters a disk error during processing, it stops. This last cavil with the program should not effect too many people. If in doubt, make a backup of the disk, and run Diskdoctor on it. Better still, if you have AmiKit and two drives, use DiskSalv to rescue the remaining data.

The other catch is for people only having one drive, say an unexpanded A500. B.A.D. will work, but it can take 30-45 minutes to process a full disk. While this may seem a long time, just think how much time you can save! Also, it is an excellent excuse to go out and get that elusive second disk drive.

There is only one thing that B.A.D. can not get around - AmigaDOS. As soon as you start putting extra files on an optimised disk, AmigaDOS gets up to its old tricks again and starts to slow things down. Solution: as soon as a disk starts to get appreciably slower use B.A.D. on it again.

As an extra incentive for would-be purchasers, the B.A.D. system disk contains several other short utility programs, including a patch for the Fast Filing System. The most unusual of these however is a disk drive head cleaner. This strange sounding program steps the head of the disk drive during cleaning. Result - the head cleaner lasts up to a claimed 10 times longer. Great stuff.

I have to admit to being more than a little sceptical when I first heard about B.A.D., but I have been very pleasantly surprised. The system certainly does speed up disks by an incredible amount. Just how the authors arrived at their claimed 500 per cent improvement is debatable, nevertheless the B.A.D. system is not really bad at all. It is in fact quite brilliant, anyone who does not buy one is really going to miss out, badly! My only regret with B.A.D. is Commodore have not caught on to its delights, yet. Very highly recommended.

Product: B.A.D. System
Contact: See special offer on page 72
Positive points: Fast, very easy to use, it works!
Drawbacks: Needs two drives to work well.

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ONE SINGULAR SENSATION

High above Broadway, just a hot dog throw from the Marriot Marquis Hotel where the first AmiExpo of 1989 was being staged, hung a huge neon sign. It stated simply but emphatically "One Singular Sensation!" This referred not to the Amiga or the biggest crowd of Amiga owners in one place that the world has ever seen but to that quintessential Broadway musical "Chorus Line". Nevertheless, it was an apt description for what was happening at the enormous Marriot Marquis

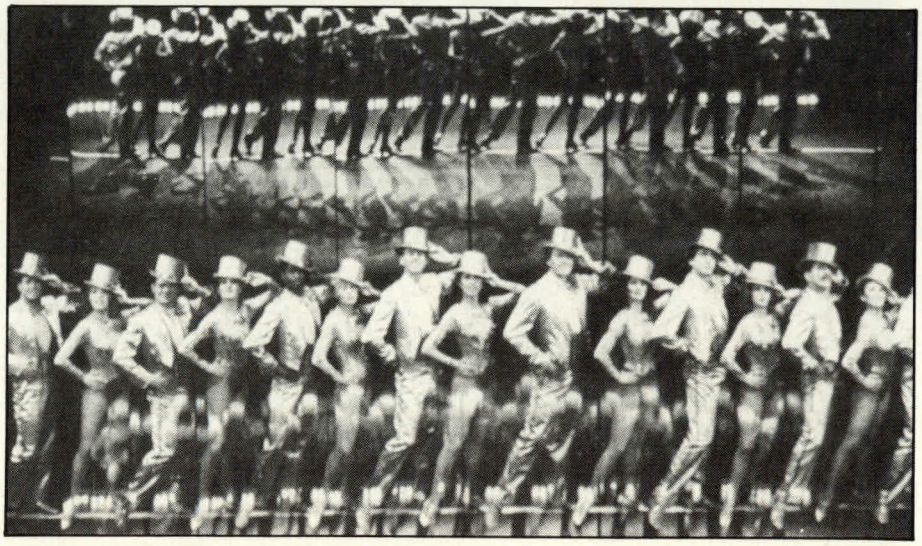
This New York AmiExpo was undoubtedly the most sensational so far, not only for the biggest attendance ever – something near 12,000 packed the halls – but also for the obviously growing number of high level products that are pouring into the Amiga dimension.

This was no market style gathering but a stimulating show where the clearly fascinated crowds of Amiga owners – mostly, unlike in Europe, of Amiga 2000s – were able to see products that are taking the Amiga into professional level activities. For example there was Arock's Masterpiece Professional Font Collection. In this for $199 you could acquire the largest font collection available for the Amiga on 20 (yes 20!) disks. It has 110 fonts – that's all!

Another product that certainly caused a singular sensation was ASDG's Professional Scanlab, based on the Sharp JX450 scanner and ASDG's Twin X general purpose board. This allowed you to turn out advertising agency standard colour pictures with 16 million colours on your screen. If 16 million colours seems a little overwhelming then you could come down to earth with the appropriately named NagPlus from Gramma Software. This is a Schedule Assistant which features an appointment calendar, 99 events per day with voice and sound reminders and it includes an autodialler for your telephone, if you live in the U.S. that is.

Brown-Wagh, long time supporters of the Amiga and still the largest publisher of business and productivity software for the machine, launched a number of products including Express Paint 3.0, TV Text Gold and TV Show 2.0, Easy Ledgers, an accountancy program, Project Master and a new word processor called Pen Pal.

One burning sensation was the team from Soft-Logik. They were wearing singed 3½ inch disks bearing the memorable phrase "I burned my Pagesetter". They had done this desperate act to publicise their new desktop publishing program,



continued on page 18

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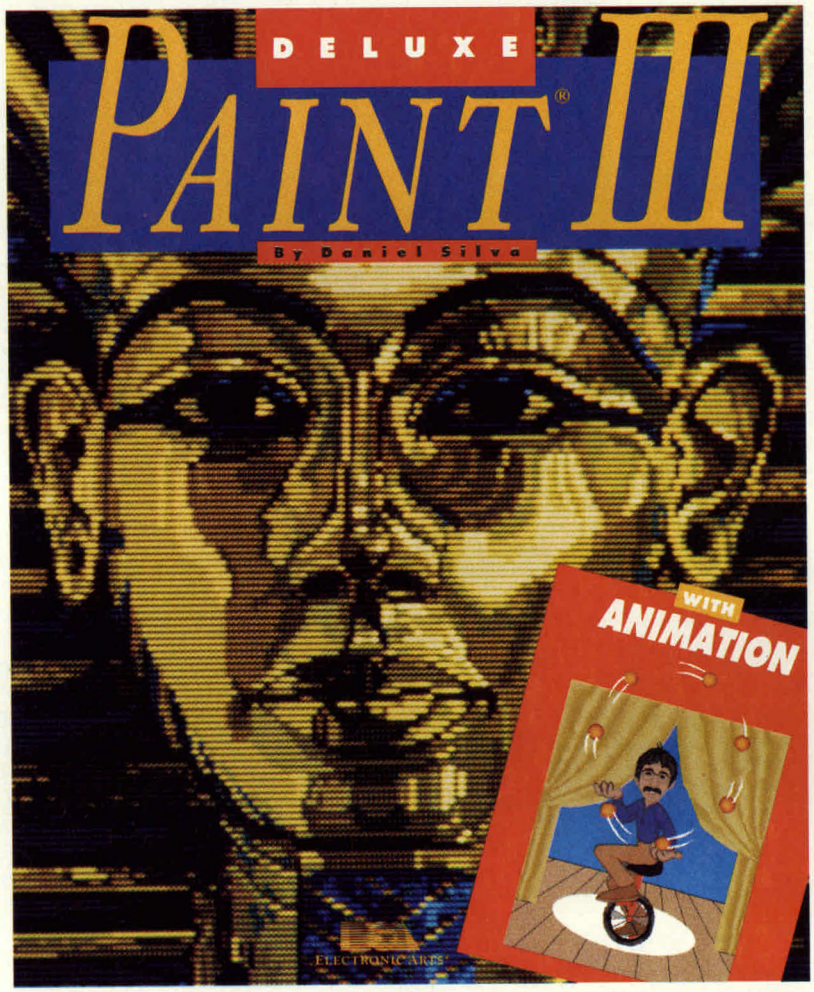

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ELECTRONIC ARTS®

continued from page 16

ONE SINGULAR SENSATION

Pagestream. Once known as Publishing Partner Plus, Pagestream has been a long time arriving but from the reception it received the wait has been worthwhile. Pagestream displays multiple on screen fonts, creates colour separations, flows text around graphics, rotates both text and graphics, uses downloadable fonts and has a big enough bundle of advanced typographical features to make it a real challenger for the reigning champion, Gold Disk's Professional Page.

Gold Disk were not exhibiting on the floor of the Show but had taken a discreetly luxurious suite about 40 floors above. There, to selected visitors, they showed a number of products both finished and under development, including the kick off for a new series of economically priced programs starting with Desktop Accounts, and a scanner which they intend to badge and sell for around $1000.

Seeing is Believing

The visual side of the Amiga is growing stronger all the time. The quality of the products coming on stream is truly astonishing. CBM told ***AUI*** that when a team from Commodore Canada recently visited a major international corporation taking with them everything that they could think of to demonstrate the Amiga's capabilities, especially in the video field, the cost of the whole hardware and software amounted to £30,000. The corporation people couldn't believe it. The software alone that they were using on a mainframe cost $80,000 and it could not achieve what the Amiga was able to do. From the products showcased at the AmiExpo their reaction was not surprising. You had to see them to believe them. Leading the pack was the famed NewTek Video Toaster, at last visible in real form and very impressive too. It is clear that NewTek has had some problems in bringing out this extraordinary video effects piece of hardware and software. Tim Jennison, NewTek's Founder told ***AUI*** that, contrary to rumours, the Video Taoster *will* be released shortly. However that is in NTSC, the U.S. TV and video standard; there is no confirmation yet that the Video Toaster will find its way into the European PAL standard, which is a pity because it does, with a reputed price of around $900 (£650) put professional video studio effects within reach of a much greater Amiga audience.

There were other highly visual packages on view also like Incognito's Optiks, a full stereo ray trace program with some innovative features. Mindware had PageFlipper Plus F/X. Progressive had FrameGrabber 256. Mission Graphics featured various video and animation systems including 68030 accelerator systems and single frame animation recording. Byte by Byte showed their exciting Sculpt 4D and their interestingly named video "The Cookbook", and there was also a new genlock from Communications Specialities called Gen/One.

There was the delightful Turbo Silver and from Syndesis, Interfont, which turns your 3D program into a video titling system and Interchange which lets you share objects between popular 3D modeling programs.

Not all however was high level professional stuff. Visionary Design Technologies, in spite of the impressive-sounding name, a just-created company based in Toronto, with, it is rumoured, an average age of 18 among its top executives, were showing a couple of as yet unfinished games. SDT's ancestry is good, for it contains among its talents the programmers of Dragon's Lair and Soren Gronbech, who created the top-selling Sword of Sodan. It will be interesting to see what this galaxy of talents can achieve with their own company after creating winners for others. Their first non-game product is to be a programming tool called CASt, that

lets you, if you really want to, create software just like Dragon's Lair, for which it was originally used.

Another hit at the Show was a much humbler but highly effective program from Centaur, B.A.D. No, it wasn't any relation to a certain M. Jackson, but a neat program that among other things reduces disk access time by 500%.

Master Classes and Seminars

An AmiExpo is not only for Amiga owners just to wander around the stands and gaze. It always offers far more than that. There are "keynote" speakers each day, in this case led by the ever-popular Gail Wellington, CBM's General Manager for Software and Product Support who spoke on no less a subject than "The Amiga and the World". Constantly travelling and probably the person who knows more of what is going on from Moscow to Manila where the Amiga is concerned than anyone else, Ms Wellington was an admirable choice to open the Show.

There were also Master Classes with such resonant titles as "The Amiga as a Pro Video Tool", "The Art of Amiga Art", "The Amiga in C", "The Amiga as an (sic) Music Tool", "To Publish from the Amiga Desktop" and "Amiga Art in Motion".

If that level of education were not enough for you, there were seminars in everything from Graphic Artists Theatre to an Amiga CLI Clinic.

"There have been good houses for AmiExpos before but never have the Amiga users turned up in such numbers."

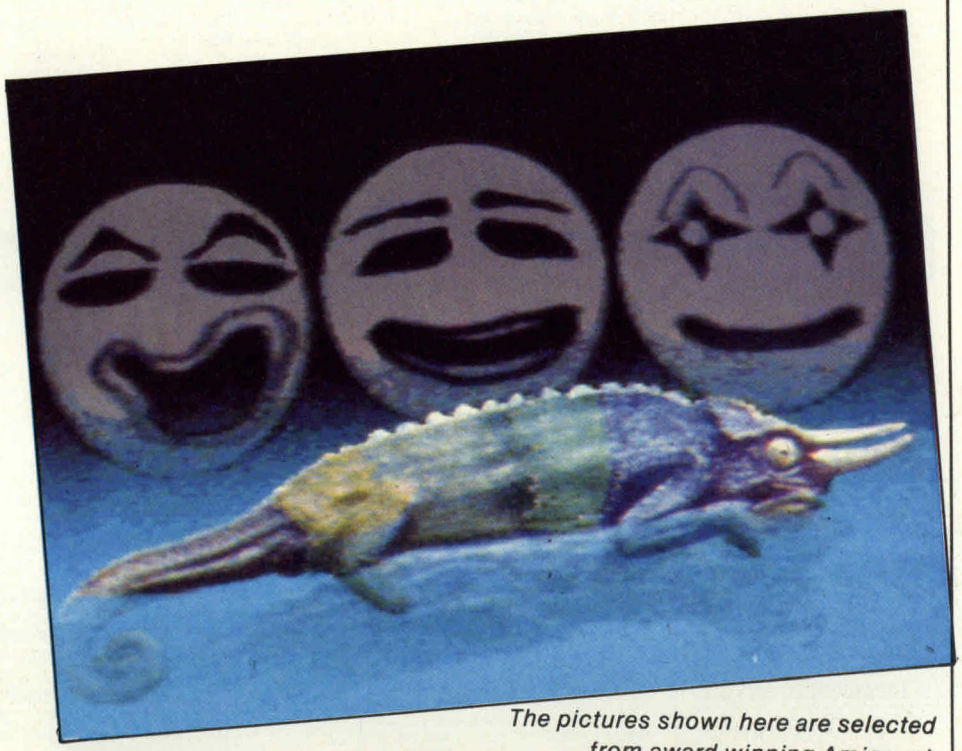
And there were people. Lots of people. Crowds of people, as if this were an opening night at one of the big, starstudded musicals drawing the 60 dollar a stall seat audiences nearby. On the Saturday, the place was packed and you had to squeeze your way through. There have been good houses for AmiExpos before but never have the Amiga users turned up in such numbers.

Strangely, the Amiga is not reported to be selling in huge numbers in the U.S.A. Certainly not in the masses of A500s that are finding homes in Europe. Yet here were almost 4000 each day arriving and staying *all* day to examine the latest and best products for their machines. That is except games, of which there were, as usual in the U.S., very few on show. (Although two British names, Microdeal and Psygnosis were there with their newest products, including from Microdeal an exciting games writing utility called Talespin).

The East Coast Amiga owners are clearly a knowledgeable and enthusiastic group, mostly in their early twenties and above. They are noticeably interested in every aspect of the Amiga, including what they could learn from ***AUI*** of what is happening outside the U.S.A.

And there is, no-one can deny, a special feeling about the Big Apple. New York has a bold glamour that does outshine everywhere else. It may be Tinseltown but it's got its pizazz. Where would you slip out for a pastrami sandwich to the Stage Deli just along the street from the AmiExpo, as a couple of members of the ***AUI*** did and recognise the face at the next table, also eating a pastrami sandwch, as Larry Hagman, TV's infamous JR from Dallas?His photo joined Frank Sinatra and other celebrities on the Stage Deli's wall. And a block or so down Broadway sparkled the neon "One Singular Sensation!" For those leaving the Marriot Marquis Hotel, you could read on their faces that the phrase didn't describe the celebrities in the Stage Deli or the hit musical Chorus Line. It was what they were feeling about a fast rising 68000 computer whose star quality is now undeniable. Yes, no matter how you measure it, and the New York AmiExpo certainly helps, the Amiga is now one very singular sensation for us all.

AM



The pictures shown here are selected from award-winning Amiga art displayed at the Ami Expo show.

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TRACK SUIT MANAGER

Goliath

At last! Football fans – and I am certainly one of them – have been crying out for a really good soccer management simulation and now, thanks to Goliath Games and Again Again, they have got one. Track Suit Manager leaves out all the boring stuff about buying and selling players, handling gate receipts, raising and repaying loans and the hundred and one other financial details and lets you get right down to the action.

In this simulation, you get to manage any one of the European national squads and take them through friendly matches and the various stages of the European Nations Cup and the World Cup. If you are feeling a bit masochistic, you can take on the managership of the England side with its built–in list of players. Or maybe you would fancy another country in which case you'll have to type in your own players – a minimum of 30 and a maximum of 100 players in all. You specify their playing position – goalkeeper, defence, midfield or forward (and, optionally, their home club) and the program takes care of the rest.

In order to maintain a reasonable semblance of reality, the program has already determined the relative strengths of each country and allocates the ability allotted to that team across all the players for that side. So picking a weak footballing country and populating it with the soccer stars of the world will not necessarily mean that you will romp home with the Cups – but you will at least have a great challenge on your hands – not to mention ulcers in your stomach!

Since you're not playing in the two competitions all the time, you can arrange friendly matches, even go on a tour, to aid future team selection and confidence building. Your squad can consist of up to 22 players and this can be changed around as you like, subject to injuries, suspensions and the home team's refusal to release a player. Options are available to allow you to watch matches, check up on fixtures and tables and scout on other teams (a report on the performance of every watched or scouted team and each player in it is on tap).

The calendar automatically advances to the next day for which fixtures have been arranged. If your team is not involved, you can elect to watch one of those matches or simply to see the results. Scorers and match statistics (such as number of attempts on goal, bookings, etc) are presented for your information. When your team is playing, the first thing you will need to do is to pick your team from the available squad. You can then elect to determine your team's tactics and the tactics of any player in it. Team tactics include formation, type of attack (fast counter, slow or normal build up; passing (short, normal or long), marking (zonal or man to man), and many others. Equally comprehensive are the individual player tactics which include taking of corners, free kicks, throw–ins and penalties, who to mark, whether to be agressive or defensive in tackles, etc., etc. This plethora of choices makes the game exceptionally interesting and provides a real test of your managerial skills.

When a match you are watching (or participating in) is taking place, a scrolling text commentary lets you know what's going on. The commentary can be speeded up, paused or slowed down at will – at its fastest speed, a full match commentary only lasts about 4 minutes.

"Track Suit Manager only appears to let you save to the master program disk which itself cannot be copied."

My most serious criticism of what is otherwise a superb program concerns the saving of unfinished games, an essential prerequisite when you have a program that has a long playing time (all the action takes place over 4 years game time). Track Suit Manager only appears to let you save to the master program disk which itself cannot be copied. Any attempts I made to save to or restore from any other disk always met with problems although the program prompts give you the impression that it can be done (yet the manual seems to imply the opposite). This is very bad news and a significant flaw on two counts. Firstly, there is a risk that you might corrupt your program disk and secondly, as a saved game overwrites any previously saved game, only one managership can be in progress at any one time.

Although TSM disappointingly makes no use at all of the Amiga's potential – it looks like a straight conversion job from 8 bit machines – it still manages to be an absorbing, addictive and stimulating game. If the above flaws could be attended to, it would be magnificent. As it is, Track Suit Manager is merely excellent. Go get it.

Personal Rating: 8 ***B.C.***

Intuition

Part III

Mike Nelson reviews in greater detail the IDCMP and menus in your Intuition programs.

Last month I examined how to use Intuition to communicate between the user and your program. This was expanded on with a program to illustrate some of the types of events which Intuition can report to your program, and also explained some of the practicalities of such coding.

Perhaps before we review further apsects of Intuition, we could explore in greater detail the nebulous entity called the IDCMP. Literally it means Intuition Direct Communications Message Port, but this is only marginally more pronounceable, and certainly not much to shout about by way of explanation. In order to understand this rather useful setup it is necessary to delve briefly into that well-known cure for insomnia or sanity – the Exec, since this is at the heart of the problem. Your program, Intuition and other allied bits of the operating system such as the input.device etc. all run as different tasks, each with their own slice of processor time and allocated resources. To keep things reasonably neat and tidy, tasks which need to talk to each other use a standard system of message ports, which Exec manages by way of several somewhat awkward functions. Luckily for us Intuition comes to the rescue yet again and does most of the donkey work allowing us to relax and concentrate on the less heavy parts of programming. When you open a window Intuition automatically allocates a message port for you, clears this with Exec, and finally de-allocates it when you call CloseWindow(). A pointer to this message port is in the Window structure returned by OpenWindow() and is accessed as Window -› UserPort. For more information on message ports, see Chapter 3 of the Exec manual.

So much for the message port but what about the message itself? The Exec Message structure is extended to contain the information which your program requests. The IntuiMessage structure is detailed on page 166 of the Intuition manual but it is worth mentioning some of the salient points here. The Class member tells you what sort of event has awoken the program. This means that your program can differentiate easily between some very diverse data types coming into the port. The full list of events which Intuition can report on is quite extensive and ranges from mouse movements and key presses to menu/gadget selections and simple timer information. The choice of which events you want to hear about and the subsequent action taken is entirely up to you but more of this later.

The Code member is a general purpose store and its contents depend on the type of event which has occurred. For instance, if a key has been pressed then the ASCII code of that letter will be present (providing you requested such data of course) or the menu item selected will be coded here or whatever. Further details on this will be included in subsequent articles on the relevant aspect of Intuition.

The Qualifier field may contain information in addition to the Code member such as whether control keys are pressed.

The rest of the structure is tied up with other details such as the X-Y coordinates of the mouse and the system time when the event occurred. These could be unbelievably useful to someone, somewhere and so I mention them for completeness rather than from personal experience.

Now onto the practicalities of using the IDCMP. Basically, all you have to do is to tell Intuition what you want to hear about. This sounds considerably harder than the reality which merely involves the IDCMPFlags; a member of the NewWindow structure that is passed to the OpenWindow() function. This ULONG variable contains the information in the form of bits which you set as appropriate. The macros for the definition of IDCMPFlags are defined in the #include file intuition/intuition.h, and all you do is to list the flags and the compiler calculates the OR value as shown in the program.

So far then Intuition has been told to inform us of certain events as and when they occur. I have already mentioned how varied these events can be and it now seems appropriate to delve into the reality of things and hopefully remove some of the shrouds of mystery surrounding the flags. There is rather a lot of them so if you are thirsty for further knowledge, as it were, then the best place to look is in the Intuition manual, Appendix A, page A52.

Broadly speaking the flags fall conveniently into six categories but I will only deal with those concerning the mouse, windows and "others", leaving the gadgets, menus and requesters until the appropriate articles. Remember that you only receive the information that you specifically request and not all of your applications will require every type of event.

The mouse can be tracked using the MOUSEMOVE and DELTAMOUSE flags. Setting these flags causes Intuition to inform you of the X-Y coordinates of the mouse when it has been moved or a relative displacement from the last position. These are handy for gaining the input for mouse-controlled games or, when used in conjunction with gadgets in drawing programs. The MOUSEBUTTONS flag can be used to see what is being hammered out on the mouse buttons. Maybe this could be the basis for a morse code program?!

The whole idea behind Intuition from a user's point of view is to provide a flexible environment which can be altered to suit the every whim of the paying customer. This admirable philosophy is backed up with a set of flags to enable the program to keep track of the window it lives and works in. To this end we are provided with a series of signals, sent by Intuition when the user has changed the window by using the system gadgets to re-size, for example. Intuition takes care of these changes

for us but asks first if this is convenient by way of the SIZEVERIFY flag. This allows the program to stop drawing until new size parameters are forthcoming from Intuition. We can also be told to REFRESHWINDOW if the depth arranging facilities have obliterated part of the program window.

The flags which come into the "other" category are the main subject of the program below. The VANILLAKEY and RAWKEY flags are used to get information about keypresses. The former will provide ASCII codes of character keys in the Code field of the IntuiMessage, according to the system keymap in use, and very little else. The RAWKEY is the other extreme, sending you everything you could possibly want to know about key presses but were too afraid to ask. This is heavy duty data which requires some meaty code to make something meaningful, so you have to be pretty keen to tamper BB BB with this. It is very impressive though to be told when a key is pressed, and released, and additionally if any combination of the control keys (i.e. Amiga or Alt etc) is being held down concurrently. The Qualifier member contains the control key information and you will need to look at Figure 8-1 of the chapter on the console device in the Libraries & Devices manual for the mapping of the key codes, and page 291 for the qualifiers. Unfortunately it seems that you cannot get both types of information (i.e. ASCII codes and details of function key presses or the Help key) without resorting to some form of CLI conjuring.

The multitasking facilities which everyone who owns an Amiga goes on about and those who bought something else wish they had, allow the user to alter the working environment substantially and globally using the Preferences program. We've all done it at some point but how do the programs running find out about the changes? The answer is in the NEWPREFS flag which signals at the IDCMP that such potentially unsociable action has occurred, so we call GetPrefs() to see what has happened and can hopefully cope with the changes whatever they may be.

The DISKINSERTED and DISKREMOVED are self explanatory and could be used when writing disk copy utilities to avoid the usual "press any key to continue" scenario.

INTUITICKS provides a simple but effective timing mechanism which doesn't rival atomic clocks in the accuracy department but is slightly more programmer-friendly. A rough estimate is that if INTUITICKS is set then your program will receive about ten messages of this type a second.

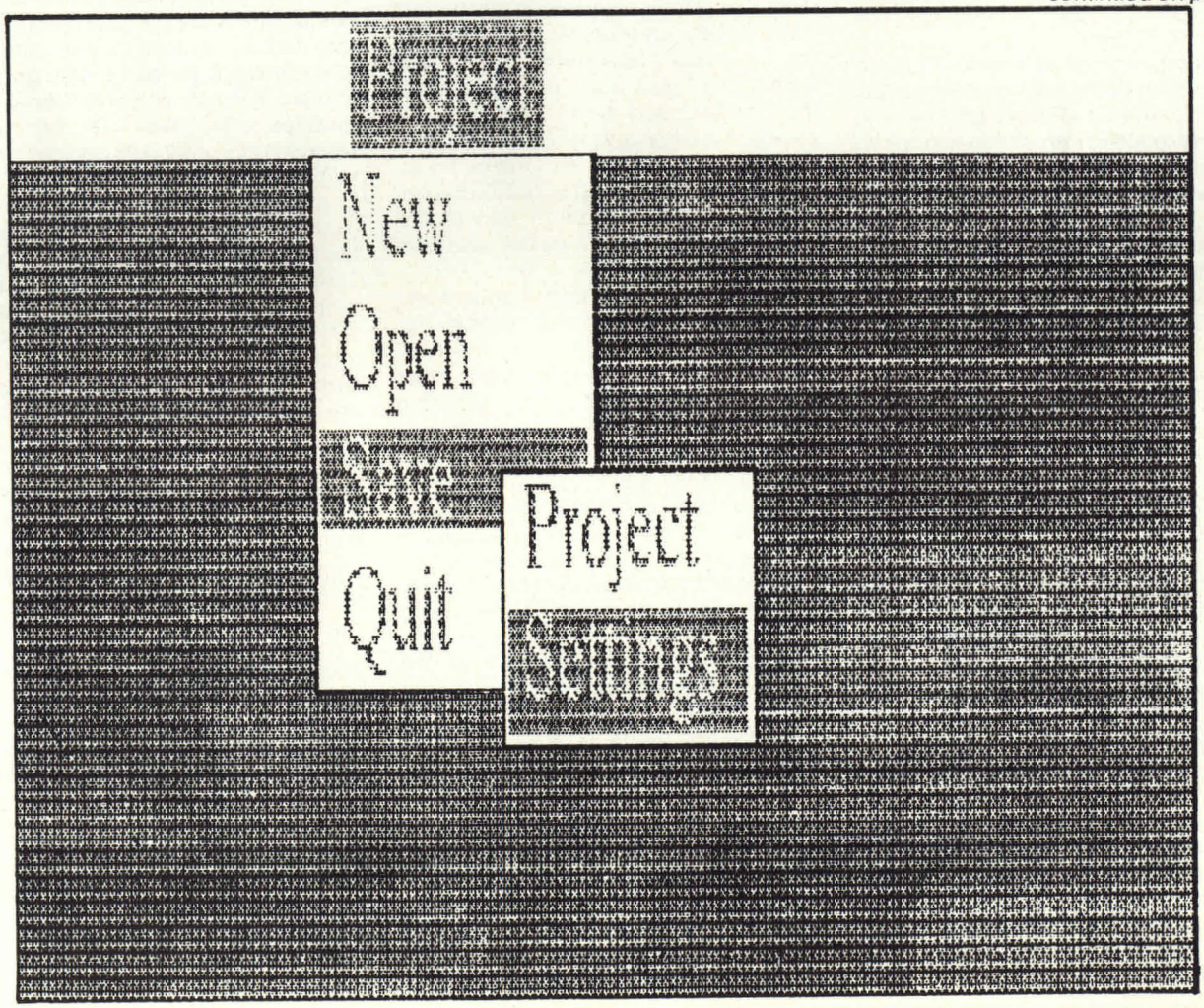
As I mentioned last month, the IDCMP is a very versatile and flexible arrangement and is relatively easy to employ; your program can find out exactly what is going on with Intuition doing all of the hard work. For a greater explanation of the various flags, see last month's article.

Intuition III Menus.

It is now time to start concentrating on the various methods provided by Intuition and the WIMP environment, and I begin with the menu selection mechanisms which are central to this. Almost every program benefits from having flexible working conditions provided by menus, specifically tailored for the application, but yet "standard" enough to encourage familiarity and hence ease of use between widely different programs.

Amiga menus are an extremely powerful means of communication in that very few constraints are placed on the programmer regarding the layout and content of menus. The IDCMP caters very well for the potentially difficult integration between Intuition, the program and the user, again freeing you from most of the processing involved whilst maintaining flexibility. Intuition allows you to have almost any combination of text and graphics in menus and provides several ways of highlighting the various components on the

continued on page 24



continued from page 23

screen. Keyboard shortcuts are automatically processed for you (if requested) which means that your program does not have to sort out how the user has selected something but merely what has been selected. You can also request that no menus are to be available if you wish to use the right mouse button for your own purposes. Intuition is perfectly happy with all this, and more, and some of these features are implemented in this month's program which sets up three different menus in the WorkBench screen and prints out the results of various selections made. I have tried to include a variety of features in the program and provide a skeletal IDCMP processing function so you can easily lift out any pieces of code which you find applicable.

Data Structures

So how do you start? You define your menus in a series of statically allocated (i.e. generated at compile time) arrays of structures. (we will publish the entire code in next month's article). The IntuiText structure: is simply a means by which you represent textual information to Intuition and crops up throughout Intuition)based programs in various guises. In addition to the text itself, the structure also contains "RastPort" style details about which pens to use, the method of rendering, and some coordinates. For further details see pages 185)189 of the Intuition Reference Manual by Addison Wesley.

A menu consists of a series of items each of which may contain sub items (see Fig. 1). The details of these are stored in arrays of MenuItem structures and will be examined presently.

Finally, the menu has a title, linked to the list of MenuItems. This title has its own data structure called, suprisingly enough, the Menu!

Before actually exploring these structures more closely, it is worth mentioning the ways of generating them. The most impressive technique is to use one of the commercial programming aids to do it for you, or maybe to find one in the Public Domain software mountain. Being a traditionalist at heart, and without any of these conveniences, I have to hand code them (which is no fun really.) You get used to the compiler churning out infinite streams of entertaining error messages as you miss out the odd semi)colon or get the data in the wrong order. The most cunning way is simply to steal other peoples' as the repetitive nature of the data means that any self)respecting cut 'n' paste merchant can usually get by.

The order of the data is particularly important in that the compiler must know about the IntuiText structures 2before3 the MenuItem structure includes a pointer to it. If this is incorrect it can generate a perplexing list of errors. The Amiga operating system utilizes linked lists on a fairly regular basis and Intuition is no exception since each MenuItem etc. points to the next so you have to be quite careful in the setting up stages. Also remember that C arrays all start at element zero and not one as in BASIC!

The Menu Data Structures

Figure 1. is a representation of a portion of the screen when the first menu has been activated. The layout of the menu is actually dictated by several different sets of coordinates in the various data structures. The "Project" title appears 40 pixels from the left edge of the screen and its "hot" area, (i.e. the region of title bar in which the pointer must be placed by the mouse to activate the menu) extends for a further 70 pixels. This is set in the Menu structure, the highlighting is set in the IntuiText structure at the top of the program and Intuition automatically enlarges the highlighted area to surround the text, and also calculates the dimensions of the menu boxes displayed.

The Items constituting the main menu follow roughly similar rules; the MenuItem structure, in combination with IntuiText contains the necessary information. The "hot" area is set to be about 10 pixels per character and 9 pixels deep for the standard ROM based font. The "Save" item has a sub menu so an appropriate pointer to the first component's MenuItem structure is set. One word of caution regarding sub menus is that the box must overlap the "hot" area of the parent box so that there is a direct and easy route for the pointer into the sub menu. Furthermore, the hot area for the "Quit" item must end before that of the "Project" sub item as Intuition will remove the latter as the pointer is dragged down, favouring the "Quit" option. Try increasing the Width from 50 to 70 in the last member of the ProjMenu[ ] array and all will be revealed (or not as the case may be!).

The "Edit" menu is fairly standard and serves to illustrate the coding for keyboard shortcuts. Pressing the right 2Amiga3 key with the appropriate letter will cause Intuition to send a selection message to the IDCMP as if the mouse was used. The flag COMMSEQ is used to inform Intuition that the character in the Command field of the MenuItem will substitute for the that menu item. Once this is set, the selection method employed by the user is transparent to the program as the message is the same for a menu and keyboard event. Intuition will also append the character and fancy 2A3 symbol to the text on screen for you.

Mutual Exclusion and Extended Selection.

The "Style" menu is rather different to the others in that it uses attribute items. These differ from the action items above in that they exhibit mutual exclusion. This jargon means that one item is always current; in this case the style must be one of the items even if only "Plain". This is signified by a checkmark placed before the current item and modified according to a set of logic rules laid down in the MutualExclude field of the MenuItem structure. This rather wild concept is best explained by using the example provided. The "Plain" item must clear all the others when it is selected. However, any one of the rest must clear only "Plain" and leave the remainder alone, thus allowing any combination of "Bold", "Underline", or "Italic", but excluding "Plain".

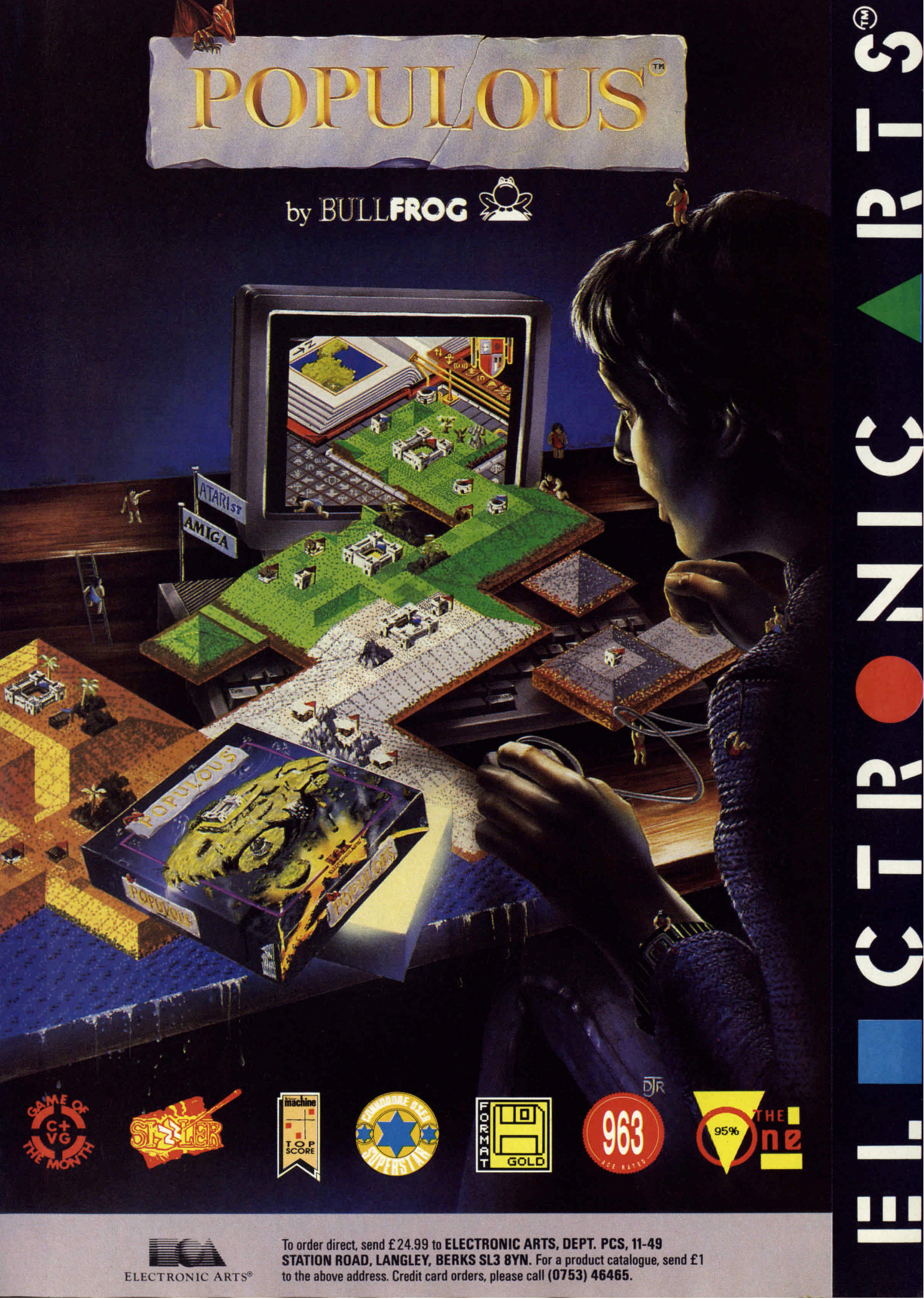
The MutualExclude member is a 32 bit ULONG value with each bit corresponding to an item to be excluded when this item is selected. The "Plain" field contains the hexadecinal value 0xfffe which means that only itself is "checkmarked" when it is selected. The other items contain 0x0001 and so they only affect the first item in the list, "Plain". If you wanted item 3 to exclude item 2 (and 1 still) then the MutualExclude value would be 0x0003, and vice versa would be 0x0005.

Mutual exclusion requires that you leave enough room at the left edge of the menu box for the Checkmark to be inserted automatically by Intuition. This is coded in the IntuiText structure by allowing 2 + CHECKWIDTH pixels on the Med)Res WorkBench screen. In order to inform Intuition that it is dealing with attribute items the flag CHECKIT is set when submitting the menus. The "Plain" MenuItem also has CHECKED set as the default when the program is first run so this item appears with the checkmark. Incidentally, if for some strange reason you are not satisfied with the aesthetic qualities of the checkmark, then you can always define your own and set a pointer to it in the NewWindow structure.

If you are going to implement mutual exclusion then you should think seriously about handling extended selections. These are made by clicking the left mouse button in a menu or dragging it. Each click will generate a separate menu event but Intuition will only signal it once and the NextSelect field of the MenuItem points to the next item. This is quite a convenience to the user so in the example above "Bold" and "Italic" may be selected with only one press of the right button. The "Style" menu is only a simple example but imagine if there were ten available attributes in a menu and you had to keep selecting each one individually.

M.N.

Next month, we will get things going with the menu structures we have established. Until then, as a challenge, try and solve this little poser: imagine you wanted to set up the "Style" menu but without the "Plain" item. Instead, selecting a checked item would simply switch it off. Intuition will not allow this directly and you will have to fool the system. Maybe a hint is in order the answer lies in the MutualExclude field and getting an item to exclude itself! Answers on a postcard...



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Paladin is a fantasy, tactical combat game for one player. Published by Omnitrend, who are relatively unknown in this country but who are very well known in the United States for Universe RPG-type series of games. Paladin is based around quests in the same way as a wargame revolves around battle scenarios. Therefore the player may play as long as he or she likes using game-rules that are relatively easy to learn. The player can then concentrate more on strategy and less on the instruction booklet. Thus, Paladin can be freely explored without a great deal of puzzles thrust in the way of the player or a commitment to follow a complicated plotline.

Although Paladin looks like a fantasy wargame (which, in fact, it is), it also has role-playing features. You actually play the Paladin in question leading a party of men, who have a range of different professions and skills, through a series of ten different quests. While the immediate task is to complete each quest and get out alive, the overriding task is to improve your Paladin character. This can only be done by actively participating in each quest. So only by using your present skills will you be able to improve them. If you survive each quest, your character's statistics will be saved and loaded into the next quest, with the ultimate aim is to reach the standard of "Knight". As a Knight you will be given extra training, improved weapons and better armour; necessary to undertake "Knight" level quests, the most difficult quests in the game.

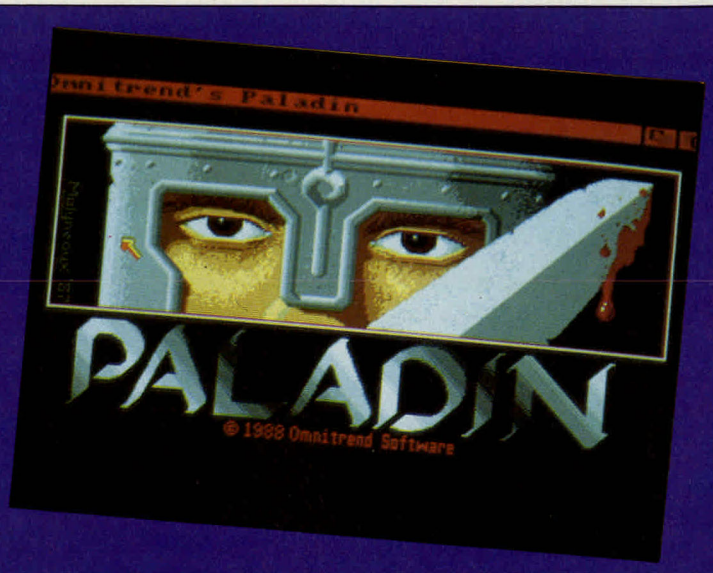
Playing Paladin is straightforward as the movements and actions are all controlled via the mouse and icons. A magic pentacle forms the beginning of your quest and you move the currently active character in any one of the four cardinal points from the pentacle.

"If the character has enough movement points available he will scamper up to the area you clicked on."

If the character has enough movement points available he will scamper up to the area you clicked on. Actions, such as opening doors and climbing stairs are all done via icons.

After the first character has been moved from the pentacle to the final position another member of your team will appear on the same pentacle.

You command four different classes of character; swordsman, mage, thief and ranger. Each character has different skills and weapons. Rangers, for example, are very mobile with light armour and a limited ability in spell casting. Spells vary from "mind stuns" to "detect doors". Enemies come in all shapes



and sizes. From Dragons and Trolls to Sorcerors and Spirits who, literally, scare you to death.

Objects can be "picked up" and "used" depending on the situation. But only a limited amount of objects can be picked up by one character because each object has its own

PALA

weight and takes up a certain amount of room when carried. This aspect contributes towards teamwork and strategy. For example, do you send a character, who is only able to carry a crossbow and some bolts, after those trolls alone or send someone who has a healing potion with him in case he runs into any trouble?

Graphics are simple but effective. They are clear and precise and give the player all the information he needs. Paladin presents an excellent graphical front-end that other wargames would do well to emulate. Too often strategy games have an excellent computer-opponent with poor graphics losing that initial "grab-value". Sounds are represented by digitised spot-effects such as a scream when a

ADIN

Omnitrend

character dies. They are not plentiful, but if you are using an Amiga with 1 Meg of RAM you can hear extra sounds.

"Paladin loses a little realism because movement and offensive actions can only be made in four directions as opposed to Laser Squad's eight."

Paladin is only available from limited outlets in the UK because it is an American import. This may explain its high price. However, the game includes 10 quests which keeps it fresh. Even when they are exhausted there is a very powerful "Questbuilder" within Paladin which allows you to create new scenarios. In addition, a scenario disk holding around 16 extra quests has just arrived, unfortunately too late to be included within this review, so you can see that your initial outlay is more of an investment.

Paladin compares to Laser Squad, which first appeared on the Sinclair Spectrum and which has a similar game system.

Paladin loses a little realism because movement and offensive actions can only be made in four directions as opposed to Laser Squad's eight. The manual could be more informative too especially when explaining the Quest-building sequence.

However, this does not denegrate the play too much.

In conclusion, therefore, you will find Paladin to be a well designed program and one which will give you hours of pleasure and a sense of achievement when you complete a quest. While role-playing aspects of the game ties each quest together negating the rather cold feel that a wargame gives with its scenarios being separate entities. Also, because the system is so open-ended with new quests appearing alongside the Do-It-Yourself option you will get value for your money.

P.R.

Graphics: 8
Sound: 5
Playability: 8
Value: 5
Price: £35.00

Because Paladin is an American import it can be purchased at the following mail-order shops:

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BREACH

Omnitrend

"We Want You ... For the Federated World's Special Forces". So says the title heading on the box of Breach, Omnitrend's SF, tactical combat game. At first sight Breach is remarkably similar to Paladin. In fact, what Omnitrend have done is develop one basic game system and then apply two different, stand alone, game worlds to that system. Paladin being the fantasy adaptation while Breach fulfils the SF quarter. All the basic qualities are there. So if you are a Paladin veteran you could easily load up Breach, with no previous knowledge of it, and start playing straight away. Only cosmetic changes occur. For example, in Paladin you would select an icon to swing your sword. Within Breach you would select the same icon to fire your laser rifle.

In Breach you become a Squad Leader (SL) commanding a group of men through a variety of scenarios. As in Paladin each scenario is a means unto itself but the main target is for your SL to reach "Star" level. Active participation being the only way to improve your character. For example, with each opponent that your SL kills your Accuracy rating increases by one percent. Using cracking and detector units will increase those ratings, and so on. The improved ratings only come into effect at the end of each scenario, however. A well-developed SL qualifies for extra training and equipment which then enables you to undertake "Star" level scenarios. Your men are divided into Marauders (basic marines), Scouts (with similar weapons but with lighter armour for greater manoeuvrability), Infiltrators (similar to Scouts with a lighter gun) and Psionic Talents (who have poor quality weaponry, light armour but have the ability to "mind-stun" the enemy). Your opponents range from Overlords (a sort of Darth Vader character) to Beasts (who are basically a set of teeth on two legs). Weapons differ from Paladin in that the swords are replaced by lasers, healing potions by Medikits and crossbows by rocket launchers.

The combat area of the game is resolved as follows: The power of the Laser Rifle, the common Marine weapon, and the protection from suit armour are given as percentages and are listed within the manual. Thus if your man fires his Laser Rifle, with a Gun Strength of 55%, at an enemy with a Suit Protection of 30%, the victim's health will drop by a total of 25%. Obviously this will vary with different weapons and differing opposition. Similarly, if you weigh down one marine with a variety of equipment his encumbrance value, that is how much he is carrying, will increase, but his movement points will decrease. In addition to these factors are each marine's personal skill abilities. They are measured in percentages and cover the marine's accuracy with a rifle, his ability to operate a cracking unit and his ability to operate a detector unit.

Breach encourages you to delegate tasks among your men. This is because each class of Marine displays a variety of skills and weaknesses. It is up to you, therefore, to decide where and when to apply a particular section. Marauders, for example, form the basis of your squad. Generally, they show a good rate of accuracy with a rifle but cannot move too far. In addition to which they are rather poor operators with cracking and detecting units. Scouts are far more mobile. They can be useful in transporting equipment and in reconnaissance. They are also proficient with a detector. Psionic talents are poorly equipped with poor shooting accuracy but they have the ability to stun opponents, thus rendering them paralysed for the next turn. Infiltrators are not really fighting men. They are most useful when operating cracking units. Used adjacent to a computer, these units show the interior floor plan of any building along with any enemy who is in hiding.

A useful additional feature is the briefing which is available before each scenario, detailing the background of the task in hand and the essential criteria needed to complete the scenario. An example may be to inflict 50% casualties while rescuing all of the hostages. This useful feature can be accessed throughout the game to check if all of the necessary tasks have been completed.

As with Paladin graphics are simple but effective. When throwing a grenade, for example, a bright red explosion is followed by all of the surrounding structures being reduced to rubble. Sound is kept to spot effects of powered doors opening, Beasts roaring and so on.

In conclusion, therefore, Breach is ideal for all those players who liked the look of Paladin but who could not stomach yet another fantasy game. Criticisms, good and bad, can be referred to the Paladin review as Breach is basically the same game.

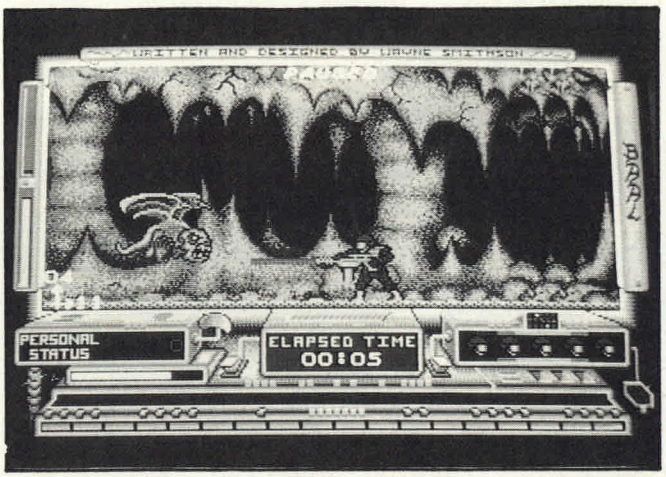
Price: £35.00

P.R.

BAAL

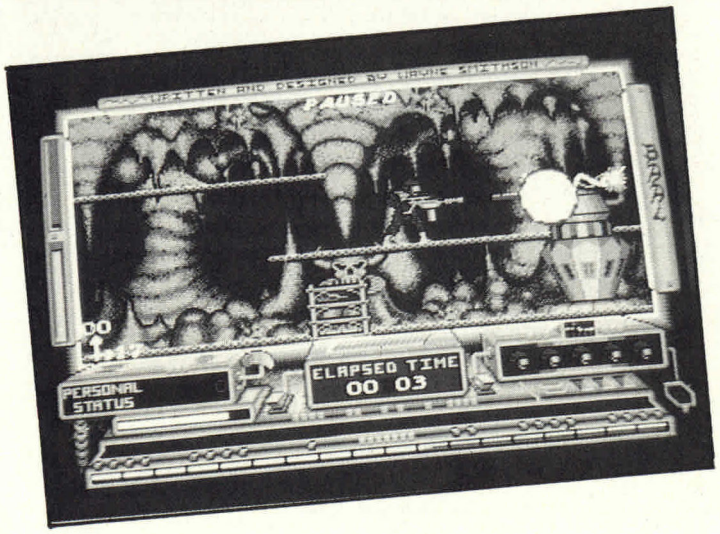
Psyclapse

A thorough workout for your joystick and your brain from the creators of Obliterator



You are no novice when it comes to archeology, but when you unearthed a giant stone slab covered in wierd engravings, even you were at a loss to come up with a theory of its origin. Over the preceeding days you had received some barely legible scrawlings warning of great danger, though you put them down to some old crank with nothing better to do. You managed to track down an ageing professor you knew from university, who told you of myth he heard about such a stone which acted as a doorway to the underworld. Tragically, as you and the prof were working out all this, your merry team were busy digging it up down on the site. As hell erupted from its grave, it somehow managed to get hold of the "War Machine" and take it back down with them. This weapon must be retrieved, so switching roles from archeologist to futuristic superhero, you nervously enter the tomb.

Once inside you find network of disconected walk-ways and ladders. To make progress you need to find the out-of-order phone boxes which house the jet packs. Fuel supplies for these can be found hiding behind electrified force-fields, so before you can get to them you have to find and destroy its corresponding generator. Iratic breaks in the walkways call for a very precise somersault, as do some of the tougher-skinned monsters. As you begin with a hefty but low powered laser, the small rhinosaurs and wingless ducks are better avoided than confronted.



All these gaping holes and monsters leave no room for mistakes, so it is a good job there are opportunities to save your position at certain points, although it could do with a few more of them. The thing to do is to practice getting from one power/save point to the next until you can make the trip without losing a life. That way you can keep up a good stock of lives throughout the game.

The mix of demonic creatures in a sci-fi setting results in a hybrid of Psygnosis' previous arcade adventures Barbarian and Obliterator. However, the highly-criticised jerky animation and static screen format of those earlier games has been replaced with four-way scrolling. This is still not all it could be, and blurs uncomfortably, often slowing down when things get going.

Two-tone footsteps and hums from the generators go some way to exploiting the sound's potential, but still too much of the game is played in silence. On the other hand, the two pieces of loading music are well up to scratch, it is just a shame they are not included in the game itself.

If you get off on frustration you'll find a barrel of excitement in Baal. Below the virus warning, the instructions carry a another: "This game is tough!". They're not kidding! It's just a bit too derivative and unrewarding for my liking, but it's worth considering if you want a thorough workout for both your joystick and your brain.

T.H.

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

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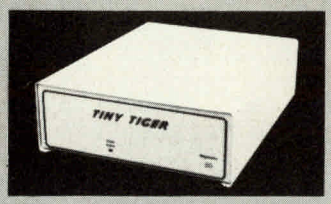

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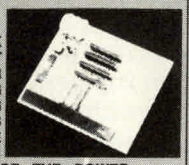

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Tetrix — Addictive game of speed, skill and luck. Based on a game originally called Tetris.
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FISH 174
Castle — Simple graphics adventure game suitable for beginners.
Iff2 Sun — Takes an Amiga IFF file and converts it to a Sun rasterfile format. S only.
Print1.2 — CLI-based printing utility with several nice features including the ability to print ASCII or HEX. I/S.
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Tunnel — Hypnotic graphics demo. TDI-Modula 2. I/S.
FISH 175
Elements — Very nice interactive display of the Periodic Table of Elements.
Furnish — For those of you who may have ever used the "scale size cut and place" method of determining your next living-room arrangement, this may be just what you wanted.
Plot — Compute and plot 3 dimensional functions.
SafeBoot — Very handy program to read and save custom bootblocks. These can be later restored should the disk become virus-infected.
SendMorse — Brush up on your morse code with this simple program that will read an input textfile and output the characters at an adjustable rate.
VirusX — Version 3.10 of the popular virus detection/vaccination prog.
WBDepth — Allows you to change the number of bitplanes for the WB screen on the fly. Very useful for A500/A2000 users.
Zippy — A "Graphical Shell" Opens a medium-size window and attaches a menu-strip for performing all sort of disk/data manipulations. Recommended.
FISH 176
Contains version V23-2A of Glenn Everhart's large and powerful spreadsheet called AnalytiCalc and his program Hypernet.
FISH 177
ASpice — A version of the SPICE 2G.6 circuit analysis program which has been modified to run in the Amiga environment.
DiskSalv — V1.32 of the popular "undelete" and file recovery program.
Jask — An intuition-based replacement for the ASK command. I/S.
Merge — Simple CLI utility to add a specified number of spaces or tabs to the left side of every line in a file. I/S.
Path — Allows you to selectively control or assign your systems search path using script files. I/S.
FISH 178
AmicForm — Creates a phonebook containing only those areacodes and exchanges reachable through PC-Pursuit.
Blackbox The black box is an 8x8 grid in which several "atoms" are hidden. You job is to find the atoms.
CIATimer — Two versions of ciatimer routines to provide precise timing for applications requiring a high accuracy real-time clock. I/S.
Cosmic — An interstellar multiplayer game of War and Peace. I/S.
Ls — V2.0 of the popular UNIX style V2.0 Directory lister. Revised for lattice 5.0/V1.3 OS.IS.
RemLib — Removes a specified library or displays some information about all available library. I/S in ASS.
RexxArpLib — V2.0 at the rexxarplib. library with a large number of ARexx macros.
FISH 179
Die — Diet planning aid to allow the user to compile lists of ingredients (recipes) and automatically compute calorie totals etc.
Dmake — Beta release of a version of the UNIX make utility. I/S.
Exception — A set of error handling routines that provide a programmer with the ability to easily handle often difficult to implement routines.
KickFont — Will permanently replace the topaz font on the A1000 K/S disk with a font called "look". Inc IFF pic and SumKick.
Launch — Sample program showing how you can load and execute a program in the workbench environment, then return to the CLI. I/S.
Regexp — A nearly-public-domain reimplementation of the V8 regexp (3) package. I/S.
TSnip — Very nice "cut and paste" type utility with lots of uses and functions.
UnixUtil — CLI utilities, including some functionally similar to the UNIX utilities of the same name — Wc, Head, Tail, Tee, Detab, Entab, and Trunc.
FISH 180
Browser — V1.6 of a programmer's "Workbench".
GeoTime — Two interesting "clock" type programs based on the "Geochron". Observe the earth's shadow scroll across a map or globe in real-time.
GPrint — A black & white graphics print utility for Epson compatible printers. Options allow several different print qualities and densities.
Jed — Nicely done, intuition-based editor that is quite user-friendly.
NoVirus —Anti-Virus utility that features known and new detection.
RepString — Nice little CLI utility to replace any type of string in any type of file with another string of any type.
TrekTrivia — Very nice mouse-driven trivia type program for Star Trek fans.
FISH 181
AMXLISP — Amiga-ized version of an XLisp interperter. I/S.
Bally — Amiga port of the former arcade game named Click.
Tracker — Useful debugging routines.
FISH 182
AMC — "Amiga Message Center". Scrolls a message from a text file across the screen on a colourful background.
Edimap — Allows you to read in an existing keymap file, modify it and save it as a ready-to-use keymap. I/S.
HR136 — An IFF file containing a chart showing every possible mixture of the sixteen basic palette colours. Also included are optimized and monochrome palettes along with several tips and techniques for using them with various paint programs.
Iconmerger — Takes any two brush files and merges them into an alternative-image type icon.
Sam —IFF sound player.
SetFont — Allows you to change the system font with various command-line options. I/S.
FISH 183
FixFd — Utility for assembly programmers. I/S in ASS.
Mklib — Example of building a shared library. I/S.
PCQ — A subset implementation of a freely-redistributable Pascal compiler. I/S + Sample progs.
FISH 184
BI — A small brush to C-code image converter.
CardMaker — A programmer's aid for creating card image data that can be used in any card game that uses the standard 52 card deck.
DPS — Demo of a program that will allow you to take any IFF file and save it as a totally self-contained executable file, without the need for any IFF-viewers.
MouseUtil — Intuition based program to allow you to change your mouse speed without having to go through preferences. I/S in ASS.
Print — Very useful print utility designed to replace the "copy <filename> prt:" command and a status bar showing percent completed. Also includes an abort gadget.
VacBench — Amusing screen hack will "clean up" your W/B screen.
World — Text adventure game similar to the Infocom adventures of Planetfall and Starcross. Quite large with a tremendous variety of responses. I/S.
FISH 185
Copy of the official November 1988 Commodore IFF disk.
FISH 186
A68k — A 68000 assembler converted to accept Metacomco-compatable assembler source code and to generate Amiga objects.
Cards 'O' Rama — Simple game played with a deck of 32 cards grouped in 16 pairs. Your goal is to pick up as many pairs as you can. I/S.
Qt2 — A cute program that gives the time the way many people actually do, ie. "it's nearly ten to five". I/S in ASS.
SimCPM — A CP/M simulator for the Amiga Simulates an 8080 along with H19 terminal emulation. I/S.
FISH 187
Diskperf — A disk benchmark program which runs on both Unix and the Amiga.
HackLite — The latest version Hack, with lots of enhancements and neat graphics. Recommended.
Mackle — A versatile cli/macro-key initiator based on POPCLI with a unique method of "screen-blanking". I/S.
SetCPU — A program designed to allow the user to detect and modify various parameters related to 32 bit CPUs. I/S.
FISH 188
BootIntro — Creates a small intro on the bootblock of any disk which will appear after you insert the disk for booting.
DiffDir — Diffdir compares the contents of two directories.I/S.
ExeDis — A disassmebler comment generator program for the 1.2 Kickstart ROM exec library image.
FastGro — A fractal program, simulating Diffusion-Limited Aggregation (DLA) I/S.
FracGen — Generates fractal pictures from "seeds" that you create. This is unlike any of the other "fractal generators" I have seen.
MemoryClock — Clock program that shows the amount of free fast ram, free chip ram, as well as the time and date. I/S in ASS.
MinRexx — A simple ARexx interface which can be easily patched into almost any program. I/S.
Null — New DOS device that behaves like "NIL:" but unlike "NIL:", it is a real handler. I/S.
TextDisplay — A text display program. like "more" or "less", but about half the size and handles all screen formats.

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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,

I am presently a final year student at university studying computer science. Part of the final year work, involves building a logic analyser for the Amiga. The analyser basically allows the testing of integrated circuits up to a speed of 10MHz. I've decided to display the output from the analyser via Intuition on the Amiga. So far I've managed to work out how to use menus and draw images in windows.

Essentially my problem is that I am drawing a graph (basically square waves) larger than the window. I know that the window needs sliders so that I can pan the window contents horizontally/vertically. This is where I'm getting stuck. Could you possibly show me how to do this. I have discovered how to get sliders on the window but not much else.

Also, if it's possible could you advise me how to do 'rubber banding' so that I can blow up a portion of the screen and lastly get up file requestor boxes.

Thanking you in anticipation,

B.Panda, Essex

Dear B.Panda,

Let's deal with the last part of your letter first! File requestors are quite complex entities containing maybe twenty or thirty different gadgets. Typical ones have boolean gadgets for df0:, DF1:, DH0: and RAM: devices, and perhaps ten or so 'horizontal' bar type boolean gadgets which are used to hold the file or directory names. In addition to this there will be OK and CANCEL gadgets, a slide control type proportional gadget and perhaps a string gadget which would be used to let a user move back to a parent directory. All of these gadgets need to be placed into a suitable Intuition requestor structure. If you have access to tools like 'KGadget' or 'PowerWindows' the setting up of these types of gadget sets is a relatively easy process.

Intuition provides all the building blocks for setting up the necessary gadgets but, as you've found out, it doesn't provide a lot of help as far as use of them goes (AUI August 88 issue might provide a bit of help here). Using gadgets sets, such as those found in the file requestor, is essentially a logical problem – you need to be quite sure of the logical basis of your program's requirements before you try to write any code! Several people I know use Warnier diagrams for this type of work – work – but any technique which produced similar results would do.

Here's the typical outline of what needs to be done once the file requestor is up and running: first read your selected default AmigaDOS node and create a list of names which represent the files and directories present in that node (see March 89 issue) – don't forget to store information about the type of entry as you build the list. You will know how many 'bar type gadgets' are in the requestor – so your program will know how many of these entries can be displayed. Display as much as possible of the list by placing the appropriate file and directory name text pointers into the IntuiText structures that are associated with the gadgets used to display the file and directory names.

Your program must cater for two possibilities – firstly having the same or fewer entries in a given node than there are horizontal bar gadgets, and secondly having more! In the latter case the user will need to be able to move through the list of names by moving the proportional gadgets slider control. As this knob moves the Pot variable will change – see pages 95-97 of the Intuition Reference manual for a detailed example. Your program needs to use the Pot variable value so that it can recognize an appropriate subset of file and directory name pointers – it then has to modify the text content of the horizontal bar gadgets to reflect the current name sub-set that has been recognized. It's best if you pad out the filenames to the maximum character length (currently 30 characters) and don't forget to add (dir) to the end of directory entries before you display them.

The user will make selections by clicking on one of the horizontal bar type boolean gadgets. You've already collected details about the type (i.e. whether it's a file or a directory) so, if it's a file, you know that you have a potential target file available. If one the other hand the user has selected a directory entry above operations all over again. At some stage the user will either select the OK gadget, or they'll cancel the operations.

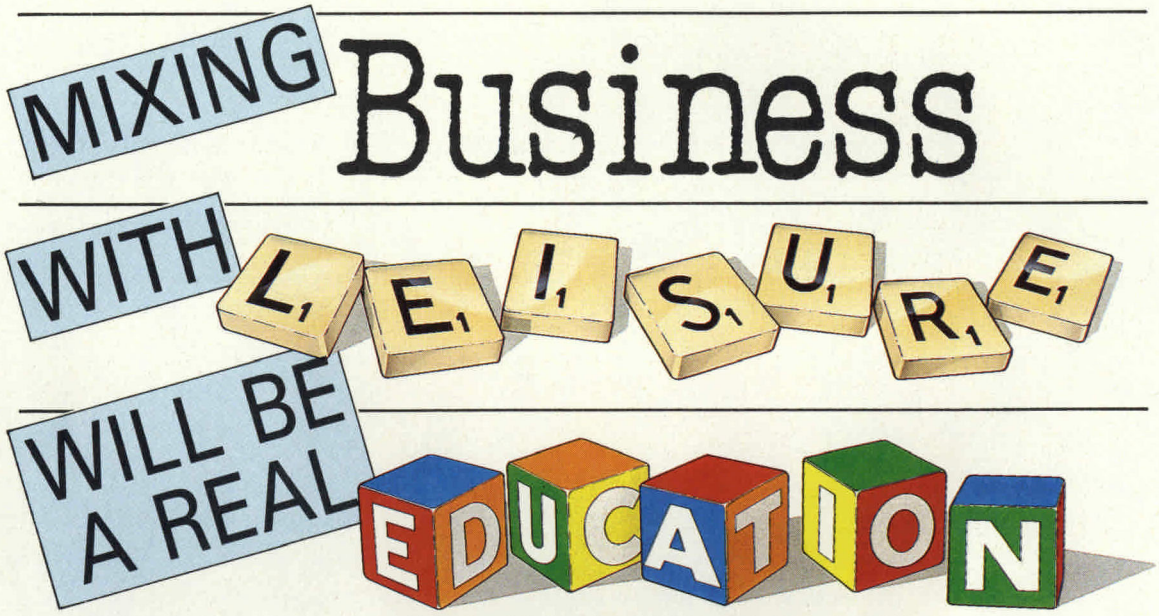
Using the window scroll gadgets is a problem which is broadly similar to that just mentioned, i.e. it comes down to monitoring those 'Pot' variables. Your rastport scrolling idea could be made to work but I wonder whether there is not a simpler alternative! You don't go into much detail but it looks as though you've opted for a 'large area scrolling technique' when the data plot you are dealing with might not need it – much of your effort looks likely to go into scrolling a plain background! If your data is simply a stream of high-low logic states relative perhaps to some given timebase, then it can be represented as such internally, i.e. as a list of 'state versus time' co-ordinate pairs.

Why not use your 'window scrolling' gadgets to select sections of your collected data.... any given portion could be displayed by tracing the appropriate subset of co-ordinates – Intuition can easily handle the joining of a set of co-ordinate points with it's DrawBorder() function. Changing the display would just involve complementing the existing trace and redrawing the display using some new set of co-ordinates.

There would be two benefits to this approach. Firstly you'd avoid moving vast numbers of pixels, and secondly you would have your data in a form whereby matrix transformation techniques will let you modify the co-ordinate values before you display them – this would give you means of providing your 'rubber band' scaling manipulation of an existing display.

Good luck with the project,

P.A.O.



Commodore computer show

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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!

● ***For the first time we are offering a family ticket for just £11 allowing entry for two adults and two children – saving up to £7 off the usual entry price!***

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DELUXE PAINT III

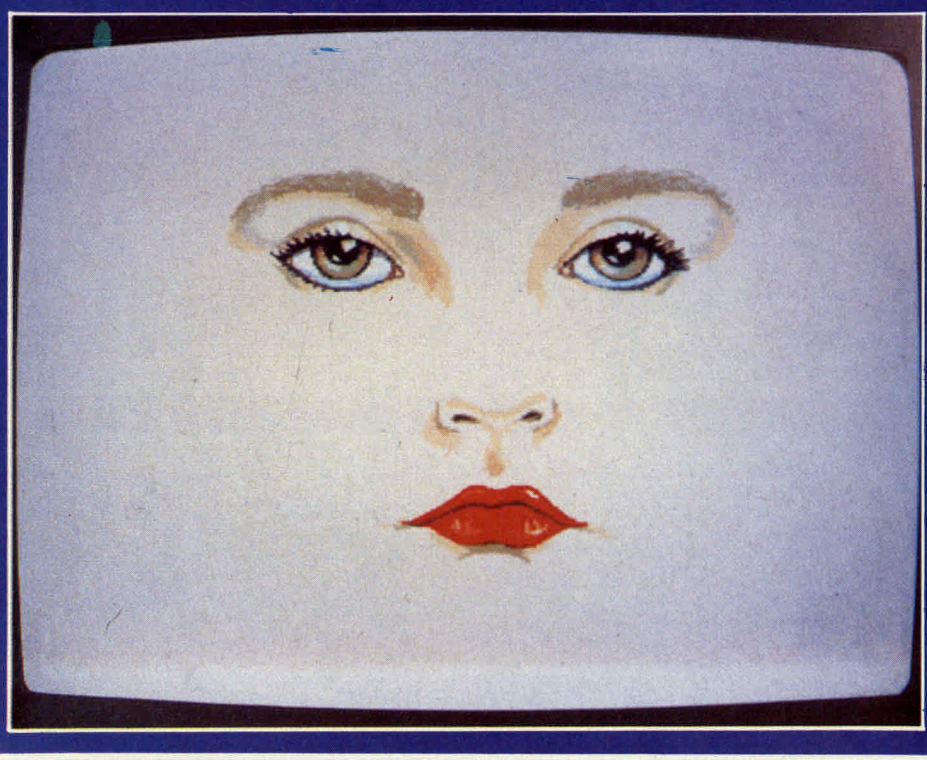
Electronic Arts

Oscar time or Golden Turkey? Film sequels are rarely as entertaining as the original, is this true of software too? Mark Pickavance views Deluxe Paint III from an animators angle

Golden Oldies

For many Amiga owners the first piece of 'serious' software that they used must have been DeluxePaint. Conceived as 'Prism'—an in house graphics editor for Electronic Arts – it first appeared in its current form in November 1985, released as 'Deluxe Paint' for the dynamic new super-micro the AMIGA. This was before most UK developers even had machines!

Not content with what was instant success for Dan Silva, (author of the DeluxePaint series), immediately began to improve and extend the capabilities of his original design concept. In 1986 his efforts resulted in the release of DeluxePaint II, a more rounded and extensive version of the initial software. Within a relatively short space of time it bacame a home and industry standard for graphics editing on the AMIGA, and an Art package by which all others were graded and marked.



Two years have passed since DeluxePaint II and more graphics packages are available for the AMIGA than almost any other micro computer. They mostly attempt to surpass DeluxePaint in either using HAM ('Hold And Modify') or a range of 'unique' features for which the majority of users can rarely see a practical use.

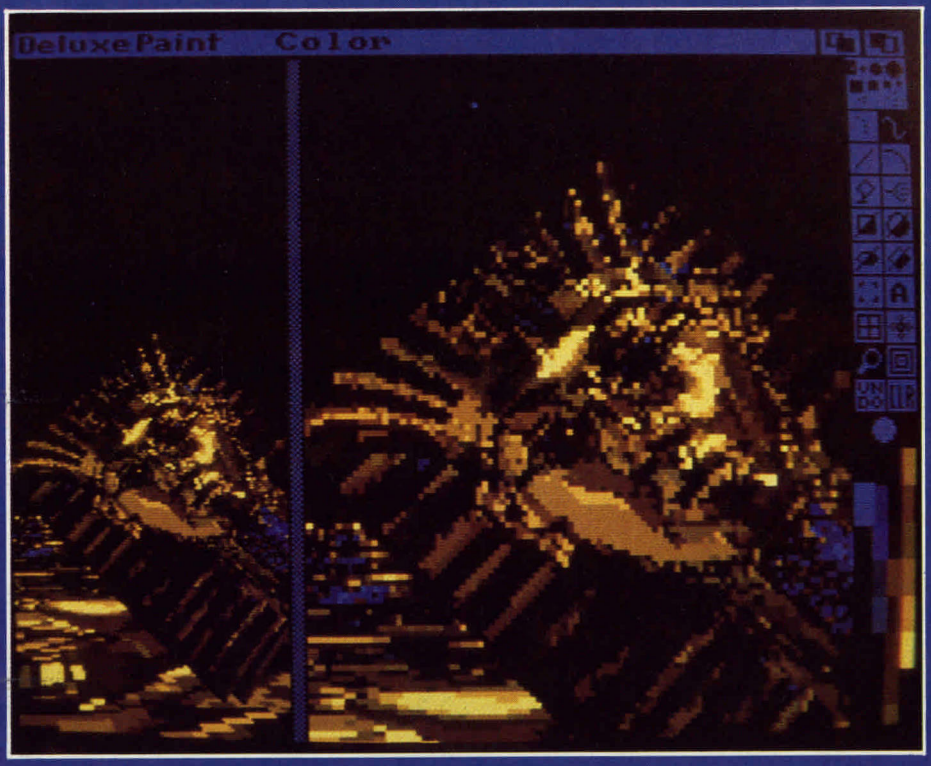
Confidence in his original product has stimulated Dan Silva to continue his work with DeluxePaint, this work has been incorporated into the new, improved, bluepwhite, DeluxePaint III. So is DeluxePaint III ahead of the field, in the way that that both the DeluxePaint I & II were?—and some might say still are. This is not an easy question to answer, but in this and in the next month's issue I will try to give you all the relevant information, plus a few personal opinions regarding the use and successful exploitation of DeluxePaint III.

The Presentation

For the purpose of this review I am going to assume that you are all familiar with DeluxePaint, if you are not then your either not interested in graphics or your fingers have been super-glued to the fire button on your Amiga mouse.

DeluxePaint III comes in a very flash A4 box which contains 3 disks, and an excellent manual of over 240 pages.

Disk one holds DeluxePaint III and the Colour Text program. Disk two is the



'ART' disk; this contains lots of pictures and brushes which demonstrate just how good DeluxePaint is in the right hands. Also on this disk are files which relate to tutorial sections of the manual.

Disk three is the Animation disk and supplies the user with a selection of animation files with which to experiment.

This may seem hyper-critical but, all the screens and animation files were created on American Amigas, and in ther resolution that they run. It would have been gratifying for Electronic Arts to have commisioned some PAL graphics to accompany the UK launch. The files would have taken up more disk space but exploited the machines correctly.

The animation disk contains 4 animations, however only two can be fully loaded and run on my 1 meg Amiga 500. This left me a little disappointed, especially when I saw 5 frames from the suitably entitled 'Cry' (Figure 1). I couldn't see any more because this was all my machine could handle. Those Amiga owners who posess less than a meg are not even going to get that far. At the launch Dan Silva said, "You need at least a meg, two is nice, four is O.K., and eight isn't bad". Need I say more. The documentation assumes no previous knowledge, so first time users need not worry thst they must master previous DeluxePaint's before tackling this one.

The facilities of DeluxePaint II were comprehensive – to say the least – so what extra features are now on offer?

Technicolour or Extra Halfbrite?

The display mode known as 'Extra Halfbrite' is now supported, and some additional features are included specifically for its use. This mode can be used in low-res only but gives 64 colours – these are the standard 32 colours plus the same 32 colours at half their brightness. If used with a little forethought this can make a big difference to the quality of low-res images. If you wish to experiment with this mode I suggest you take a favourite 32 colour picture and add shadows using the extra 32 shades.

This is made very easy by using te new halfbrite option on the MODE menu, enabling you to use a brush to either lighten or darken the picture – depending on which mouse button you press.

Not all AMIGA's support this mode (thanks to Commodore), some of the early AMIGA 1000's need a chip replacement, so I would contact your dealer if the second 32 colours bear an uncanny resemblance to your first 32.

Big Screen Entertainment

You may have recently noticed several AMIGA games which do not have screen borders (PACMANIA and SPACE HARRIER) are good examples). This is another special display mode called 'OVERSCAN'. The technique does not expand the existing display but actually increases the resolution to account for the borders. A typical low-res, PAL 'Overscan' graphics has a resolution of around 352 x 282, which enables you to paint off the edge of the monitor top and sides. This feature can be used in medium and Hi-res but you must remember that you do not get this extra resolution for nothing, it all takes up extra memory.

If you were forced to edit the graphic on the edge of the display you might become very frustrated and mioss pixels not shown on your screen but clearly visible on others. This is neatly circumvented by using the Ctrl and cursor keys to pan the display around the screen (a similar feature to that in preferences).

A Brush with the Stars

In addition to the halfbrite brush mode mentioned above you now have the option to tint. This uses your existing palette to best effect by replacing the hue and saturation levels of the brushed colour with the selected colour. The process

continued on page 38

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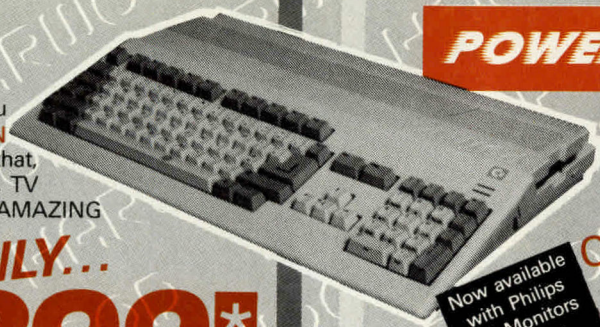

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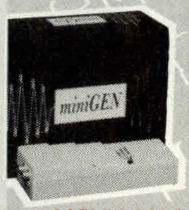

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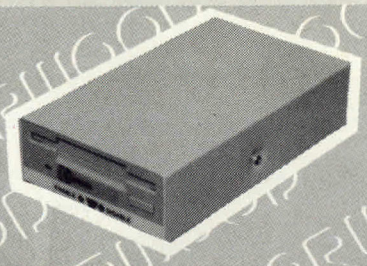

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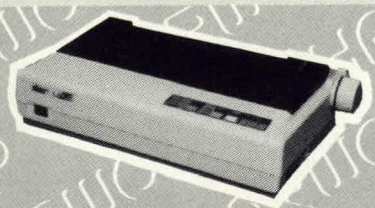

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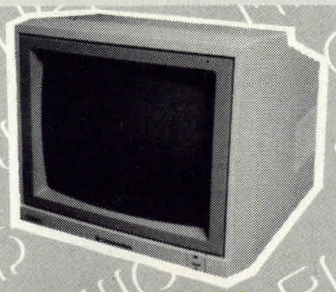

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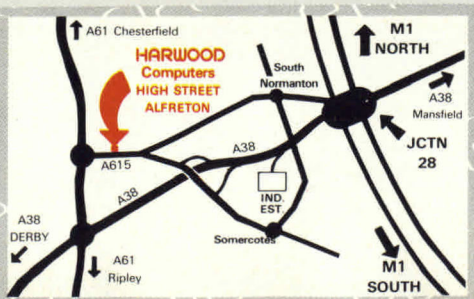

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continued from page 35

calculates the correct RGB (red, green, blue) values and matches them to the nearest colour in your existing palette range. How well this works wil be very much dependent on the number of colours you have and how you have defined them. Although not exclusive to extra halfbrite this feature makes best use of this mode.

Both tint and halfbrite are also included as two of the four new fill modes. The others are Brush and Wrap. This enables the screen to be filled with brushes (even perspective ones) and any shape to be mapped onto any other. The results of the last feature can be described as ranging from bizarre to the very weird.

'Gorillas in a twist' is a landscape created from wrapped versions of a Gorilla picture supplied on the art disk.

Walk on Parts

The list of tiny changes to DeluxePaint III are almost too many to mention here, but here goes:

The continuous freehand tool is now divided into the continuous freehand tool and the filled freehand tool.

Filled and outlined shapes can be selected by holding down the Alt key while selecting the shape tool.

Printer controls have been improved.

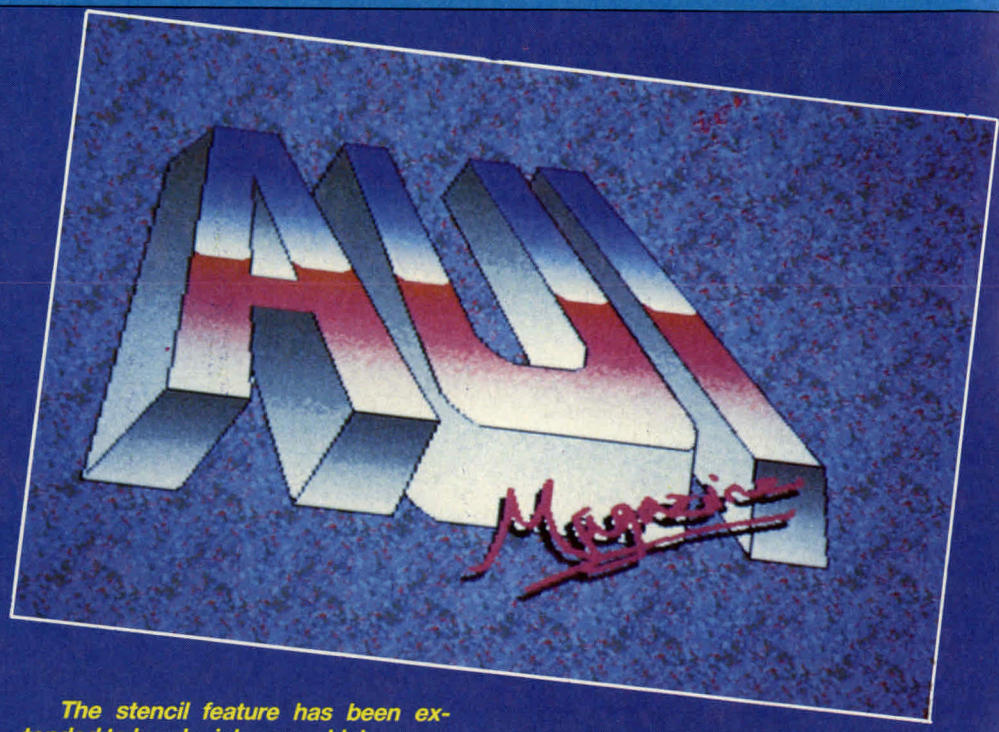
The entire svreen can be flipped without making it into a brush.

Info is now more informative.

Any brush can be outlined or trimmed by one pixel, from a menu or with a key press.

When using a brush the 'handle' may be repositioned to any corner of the brush.

With an additional program you can now load and use colour fonts.



The stencil feature has been extended to brush pickups – which means you pickup only the colours you want to.

You do not have to cut brushes from background colour to get a transparent surround – Autotransp will assume any solid colour under your brush is to be treated as transparent.

And finally a great many standard features have been improved by being re-coded in assembler (they were originally in 'C').

The general impression of DeluxePAint III is of speed when compared with its predecessors.

Leading Light

All the new features are overshadowed by one major addition, that of ANIMATION. Their are a great many animation and graphics presentation packages available for the the AMIGA – so what makes DeluxePaint III any better or special?

Firstly, the technique employed, which I describe in some detail later and secondly, the fact that it is integrated with all other Dpaint features. This makes – potentially – a very powerful system for producing animation. The obvious usage is for video and presentation, but many games houses might also find time to develop game animations usng this software.

The animation system functions in two modes: Compressed and Uncompressed. They have different memory requirements, if you use the Uncompressed mode then don't expect to get more than 10 frames of animation in a single meg machine (low-res, 32 colours). In the compressed mode the situation is less exact in terms of how many frames you can have, it is very much dependent as to how much is happening on-screen. Example: You create a red and white checkerboard with which you fill the entire screen. Picking it up as a brush you go to successive frames and paste down the brush with a one pixel offset to create a scrolling background. The squares were 32 pixels wide so you create a repeating cycle in 31 frames.

This animation should take up 40k X 31 frames which is about 1.3 megabytes. It doesn't. Each frame is only stored as the changes from the frame before it. The whole 40k of the first frame is stored and then only the data necessary to change it into frame 2, 3, 4 etc. The end result is that when I tried the above example it took up only 180k, which is

quite fortunate for me because of my one meg to play with.

The whole animation process of DeluxePaint III is a memory trade off. You have a choice, lots of colours and resolution or a great many frames of animation – but not both. This is not as big a drawback as it might first seem, once you get to know the limitations of your memory setup you can tailor your objectives (and expectations) to suit the enviroment.

The controls you would associate with animation packages are all present. You can quickly add and delete frames, set the display speed and obviously work onto individual frames.

The features which are unique to DeluxePaint III are the Move requestor and the facility known as Animpainting.

The Move requestor is the heart of the animation system. In this brushes can be made to perform an imaginable movement. You have control over all three planes of motion and can be set over how many frames your action will take place. The 'Tut' animation shows what is possible. When used in conjunction with the 'perspective' effects this can create some stunning special effects.

The features on the Move requestor can be loosely termed as the 'Automatic' animation functions. Once you have set the parameters then just sit back and watch DeluxePaint do the animation.

If you are more creative – or not so lazy – then animpainting is for you. This is a curious option which makes producing animation very easy and quick. If you wish to 'hand' animate an object as it traverses the screen then by holding down the left Amiga key the frames will auto-flip as you paint. The result achieved with this feature are more natural than those generated with the move requestor. Animpainting can also be done with the strange creatures called animbrushes. But more of animbrushes next month.

In part two of this review I will give you my final assessment of what so far is an impressive package, and also some tips that using DeluxePaint III has taught me.

M.P.

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Price: £79.95
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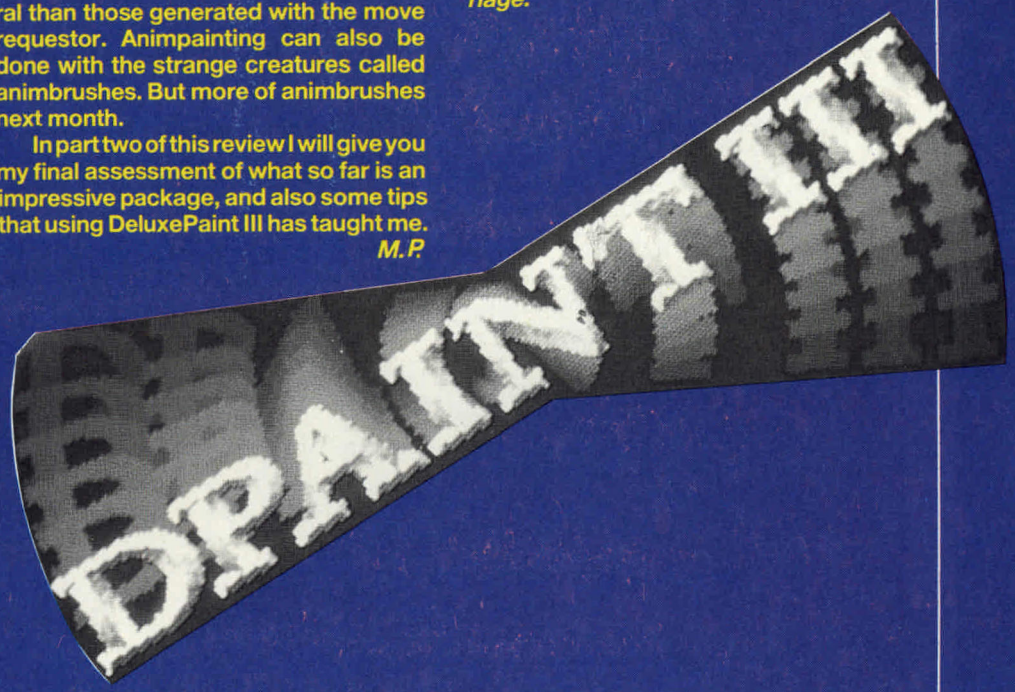

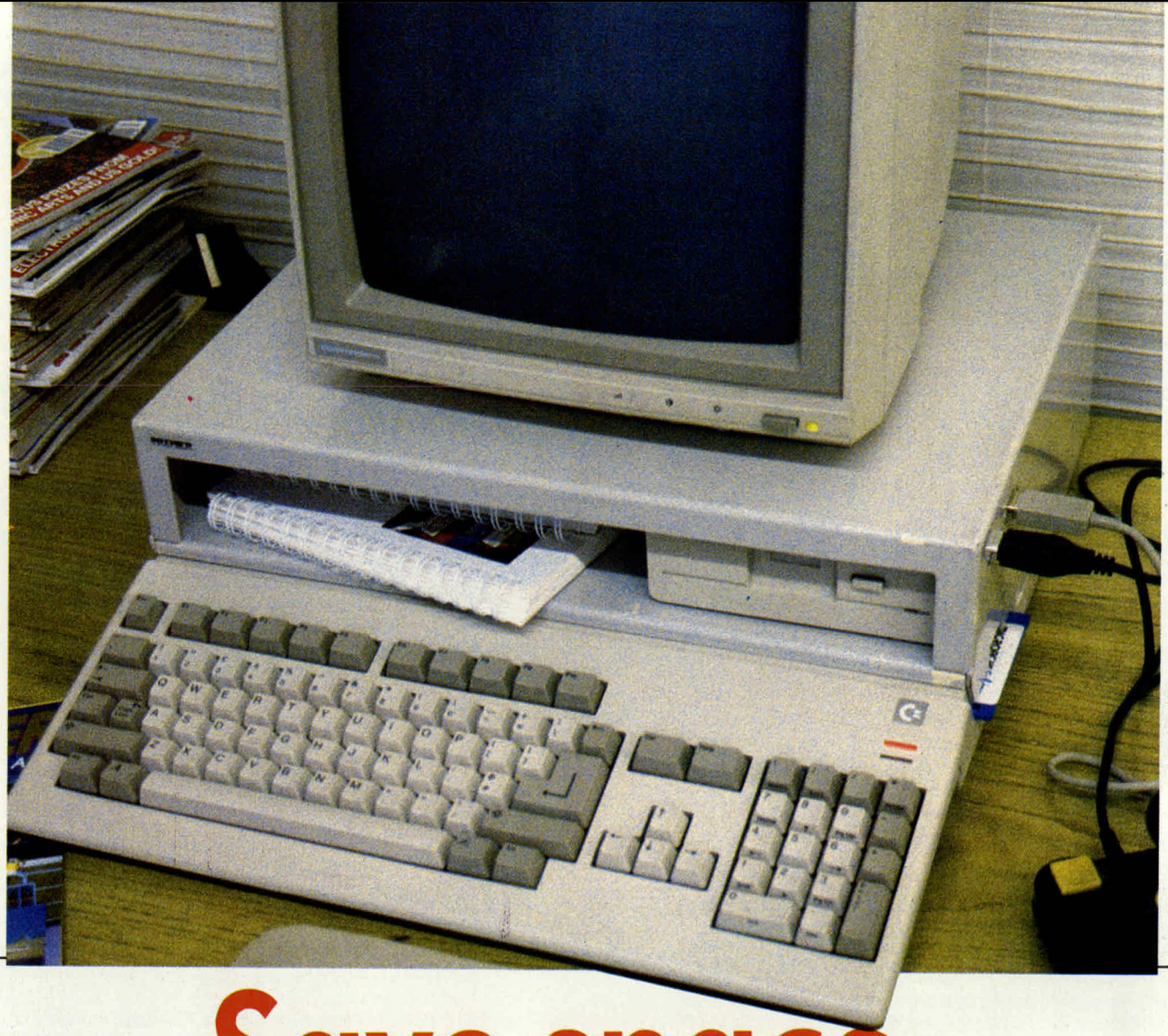

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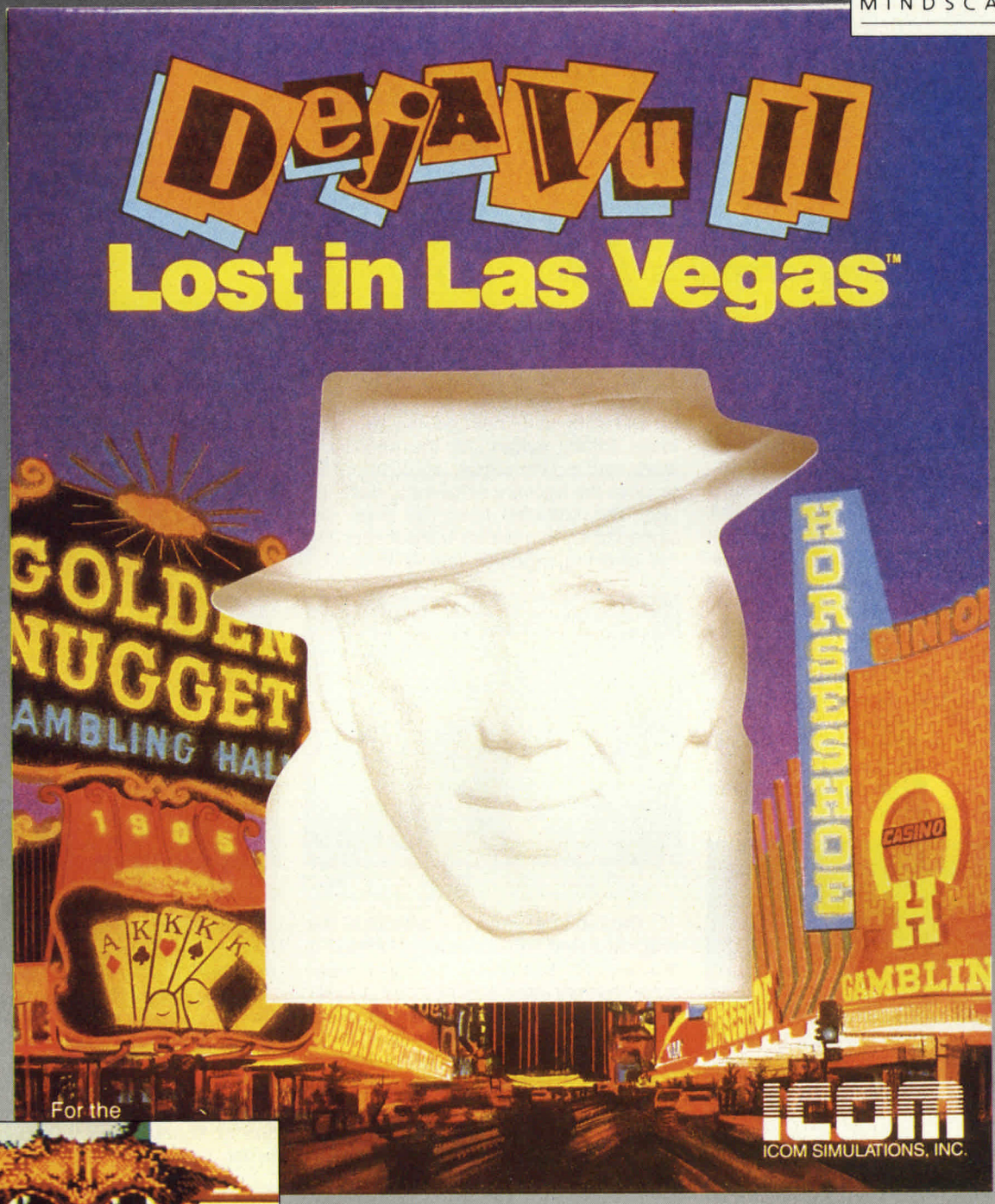

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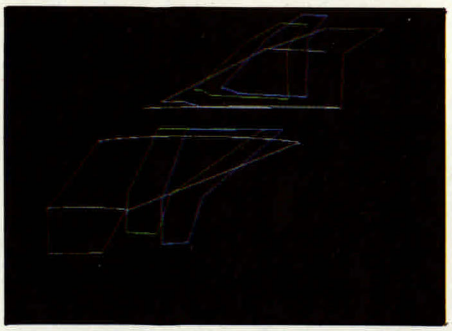
Summasketch Plus

Rico Gusman trades in his pen and paper for an outstanding graphics tablet 'with no restrictions'...

When the Amiga 1000 first showed itself to the world everyone gasped with amazement at the very stunning graphic capabilities of what seemed to be a normal looking machine. It still seemed that only the elite few could use and enjoy the Amiga as it then still cost in excess of £1000. Today though it is a very different story, as anyone can pop along the high street and buy an Amiga 500 for a few hundred pounds and start creating outstanding graphics straight away.

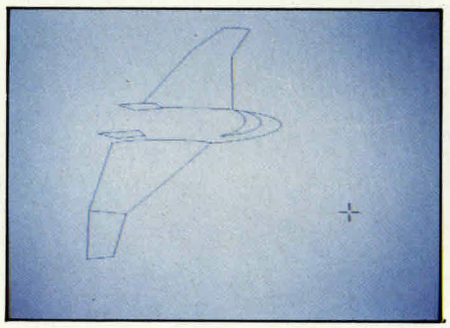
If you are lucky enough to have bought or have access to the Summagraphics – Summasketch Plus graphics tablet then yet another side to the Amiga opens up in front of you – the ability to express yourself graphically without almost without restriction.



(fig.1)

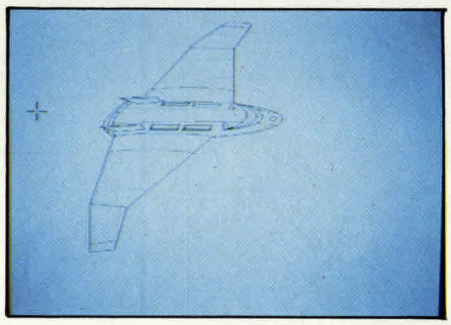
For those of you unfamiliar with graphics tablets, they are like a small drawing board with a pen-like attachment that allows you to draw as if on paper but relay it to the screen. You are probably saying that a mouse does the same thing but holding a pen is something that is completely familiar to us and far more natural and flowing than the use of a mouse.

The tablet itself is 16 inches square with a 11.7 inch working surface (approximately the size of a LP cover). It is made of a very strong plastic which allows the stylus to glide smoothly over the surface of the moard even though it does not actually have to touch the tablet to work. The colour of the tablet matches the Amiga perfectly and next to the machine looks totally suited. All the necessary leads and power supply come supplied as does the relevant software to drive the unit. The software itself has been designed to lay in memory without affecting the drawing program that is in use.



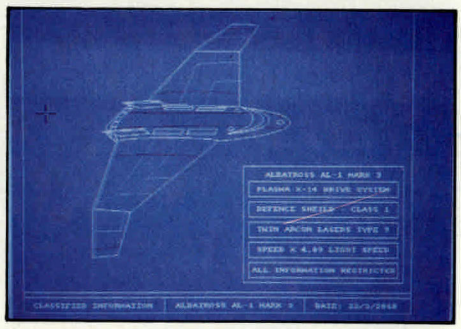
(fig 2)

The tablet worked fine with all of the programs that I tried including DPAINT 2 & 3, and Photon Paint. The driver programs are very easy to copy into the workbench or into the paint programs themselves, and allow great flexibility to finely tune the tablet for the correct monitor or the actual picture you will draw.



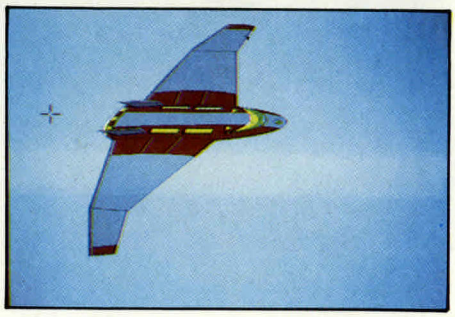
(fig.3)

I found that the default settings seemed just right for the Amiga and monitor I was using. The only adjustments that I made were scaling ones that allowed me to transpose a small picture on paper to take up most of the screen. This reminded me of the old sketch-master drawing toys you could buy a few years ago. This function really makes this tablet powerful as you would be able to trace a drawing by taping it to the board itself.



(fig.4)

The stylus itself is of a similar size and feel of a light pen and fits comfortably in the hand. The actual tip presses in and does the functions of the left mousebutton. A small blue button just above where your index finger rests acts as the right mouse button would. Both of these functions can be reversed when setting up the configurations. Below is a brief description of some drawings done using the tablet:



(fig.5)

In (fig.1) you can see the outlines of wings of a spacecraft the different colours represent the different configurations set up so you could see how the picture can be adjusted. For these pictures I was using DPAINT 3 but DPAINT 2 would work in exactly the same way. (figs.2 & 3) are the basic outlines of the ship in different stages with (fig.3) as a finished CAD drawing. I also turned (fig.3) into a blue print just by changing the background colours and adding some text (fig.4) by dropping in some colour the drawing takes on new depth as in (fig.5) and in (fig.6) a technical drawing is made into a picture.

These pictures were done by assigning a small area of the tablet to take up the whole screen. As you can see, I found the Summagraphics tablet a flexible and user-friendly tool which made the creation of graphics considerably easier and more entertaining. I would recommend it as ideal for anyone using the Amiga for possibly its truest and most creative areas, graphics and animation.

Conclusion

Having used the Summasketch-Plus tablet for a week I have come to love it for its ease of use and the speed at which it allows you to work. More importantly it breaks down the barriers between computers and us which lets artists and designers be far more natural in the way they work. I for one will definitely use a tablet in preference to mouse control anytime. If you are serious about art on the Amiga then get one!

R.G.

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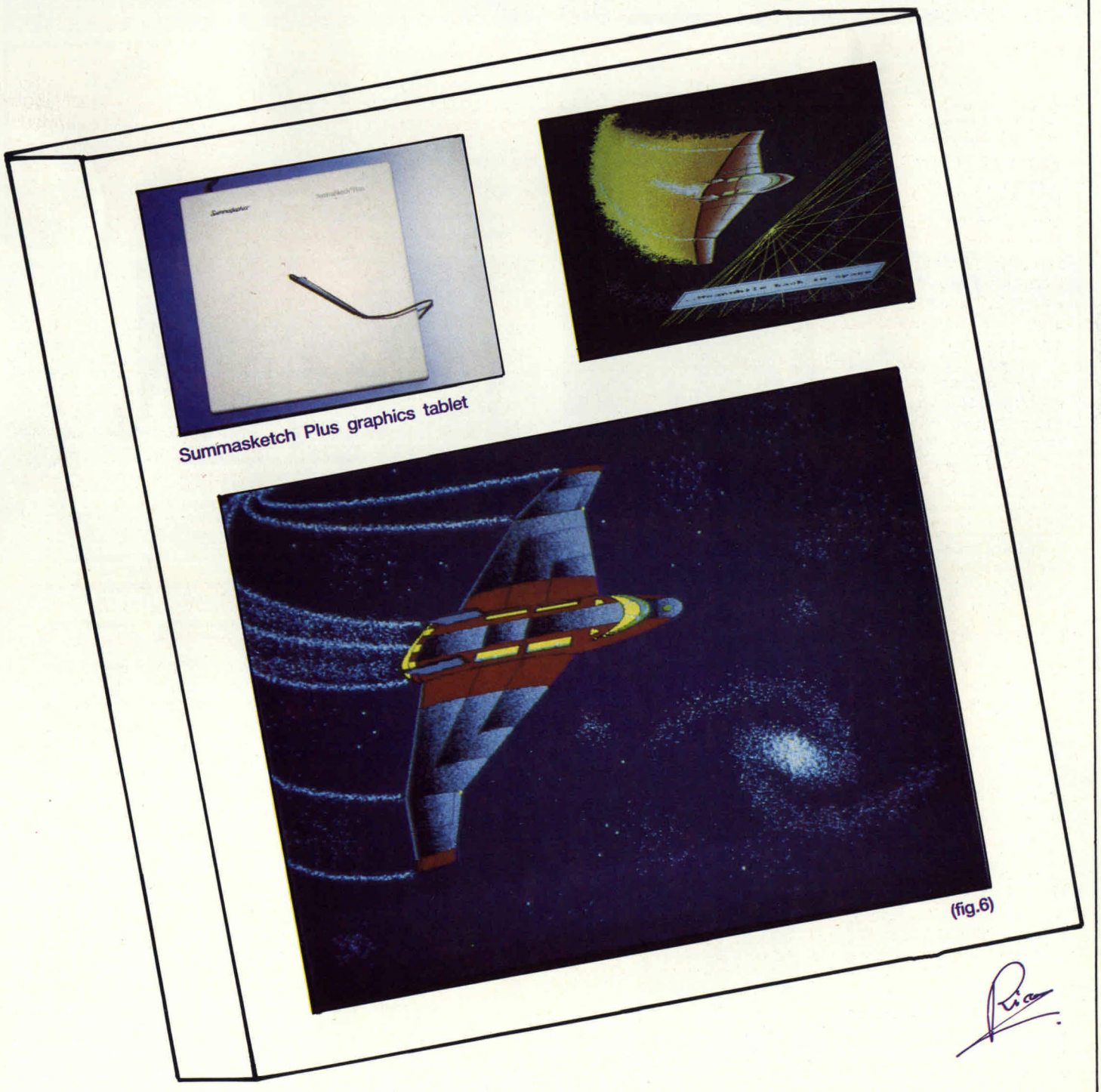

Summasketch Plus graphics tablet

(fig.6)

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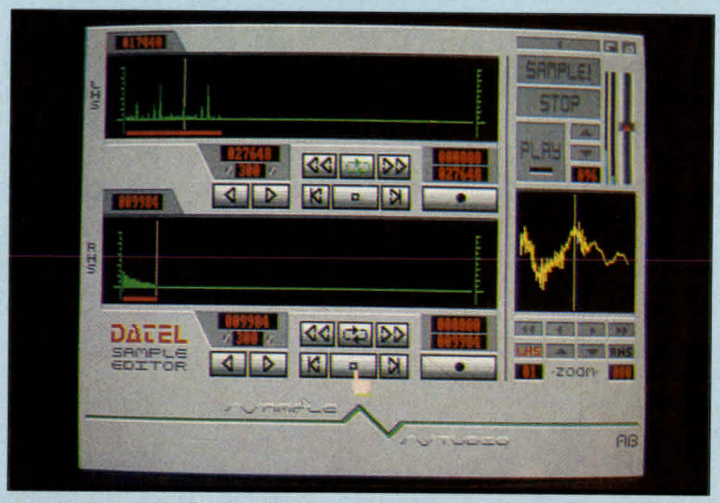

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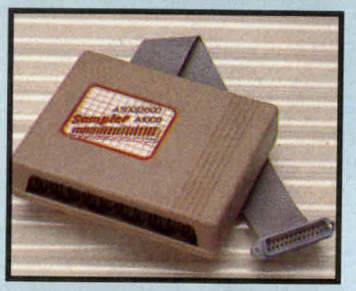

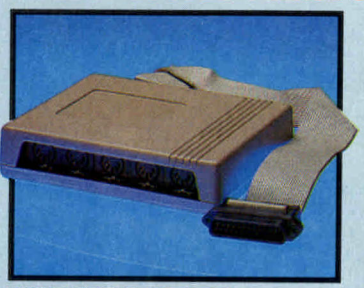

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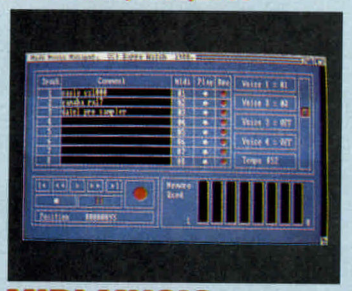

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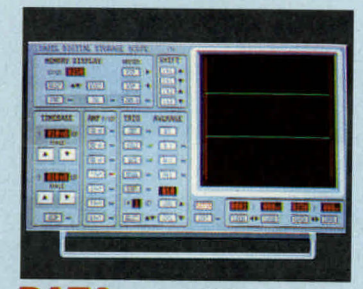

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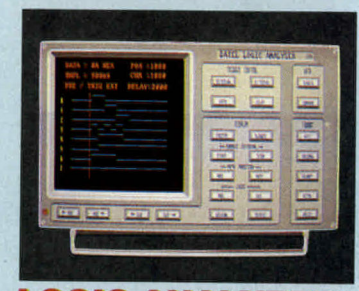

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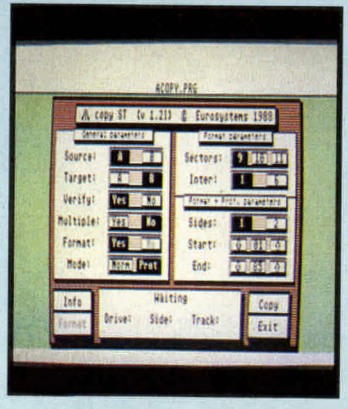

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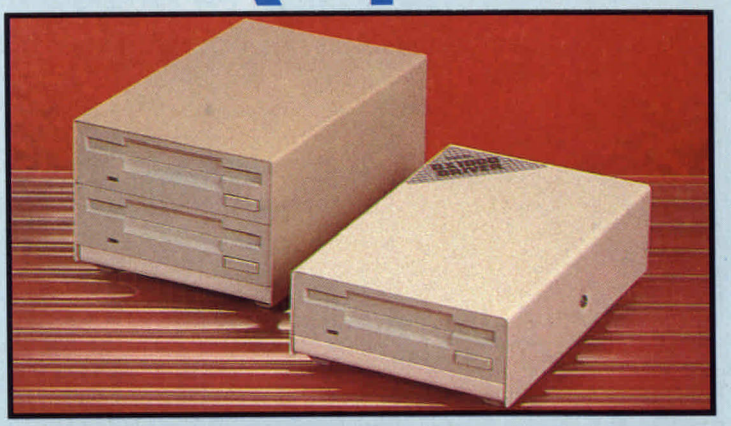

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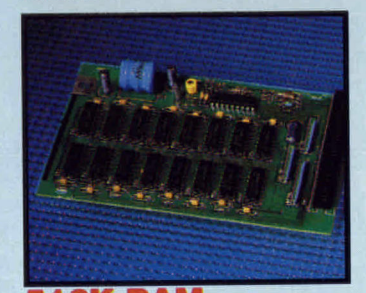

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PageFlipper Plus F/X

Another quality animation program puts in a moving performance. Peter Lee cuts through a Spartan interface to find a sharp-edged utility

Over two years in the making and joining a growing series of video animation programs for the Amiga come Mindware International's PageFlipper Plus F/X. It combines a script editor for loading and playing through a sequence of images to simulate movement, and as a bonus has a set of in-built transitional effects, more commonly found on video slideshow programs. The amount of time taken in development might lead you to think that PFX is behind the times; after all, programs evolve quickly to meet the needs of users, and to survive, any new piece of software must be as good as – if not better than – the current competition. This is not the case, and after some initial confusion about the editing structure, the program proved itself a foolproof and very competent animation package which did complex sequences without a hitch. The software designers themselves describe the user interface as "spartan", and they are not joking. There is none of the fancy graphic icons we have all come to expect; instead the selection gadgets are words which describe the action about to be performed on the script. There are no pull down menus either – selection options all open up in a centre-screen window, and are chosen with a mouseclick.

If all this sounds a little ungainly, it is – but only for the first few hours. Then familiarity dawns, and you begin to appreciate the simplicity of control which is contradicted by the script's text structure.

Scripts are built up in the main display area, and PFX has its own programming language – but don't panic. Lines of instructions are inserted automatically by the program after you have selected a menu item command. For example if you need to tell the program to load an IFF picture, selecting this menu option inserts the command FRAM() at the cursor location; you then click in the brackets, and a file requestor appears; selecting the filename with the mouse, and its name is inserted in the brackets.

Of course, to create more than a simple animation you need to know how the commands are structured, and their effects. There is no escaping the fact that a degree of learning is required and this will take time. Initally I thought this might prove a drawback, but the more I experimented the easier script writing became. After a day, most things were familiar and my initial reservations evaporated.

PFX comes on an unprotected disk, and is accompanied by a data disk containing tutorial files, and a very helpful and well-designed manual. At the outset this has a complicated section on Amiga bitplanes, which may seem a little too technical for the average user, but understanding the relationships of colours is paramount in achieving one of PFX's finer points – running two animations simultaneously, combing the images on one screen. An hour spent digesting the information here will ease the pain later on when you try more intricate projects.

Animations within the program are composed of three main kinds: Slaves, Intermezzos and Masters.

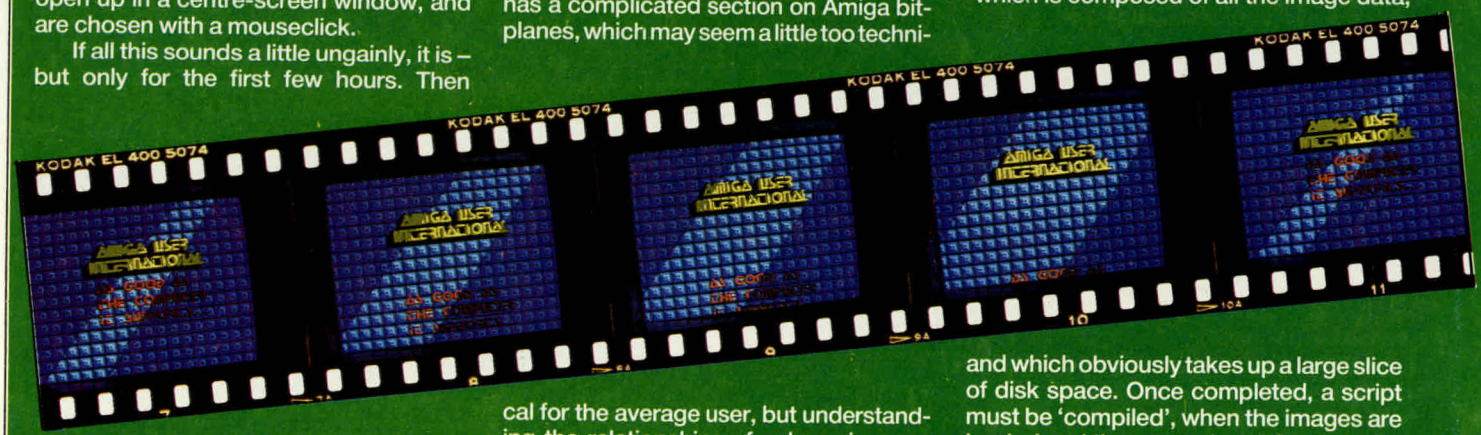
SLAVES – These are the animations which share the screen with other sequences, and are run concurrently with something else. The number of bit-planes is a critical factor – you have 5 in low resolution, and it is possible to have one sequence running in two planes, and the other slave in three planes.

INTERMEZZOS – The ability to join together a series of independent animations allows you to compile script variations using set sequences, to load in fles from secondary disks, and more interestingly to mix resolutions in a script. Intermezzos are chained in by a scriptand one benefit of their use is to allow fewer bitplanes for the script's major sequences, and then loading in a more colourful animation only when needed. The more bit-planes you have, the fewer frames you can hold in memory because of their demand for RAM.

MASTERS – The core of the program defines the slaves and intermezzos. While PFX can automatically generate a raw script simply from a list of IFF files indicated by the user (very handy!), any complex manipulation has to be added where needed.

As far as achieving any of these is concerned, construction of a script is carried out by a process of mouse click and option selection; the script parameters are built up on screen, and may be saved independently of the animation file, which is composed of all the image data, and which obviously takes up a large slice of disk space. Once completed, a script must be 'compiled', when the images are loaded and the new animation sequence created.

These complete sequences cannot be



editied, but clearly any alterations can be made to text scripts. This is simply a matter of clicking on the programming parameters, and making any amendments. The programming language consists of a series of four letter mnemonics, and associated parameters. For instance GLOC signifies global constants – for such things as screen resolution – and XTRN is for defining external intermezzos or slaves. Getting used to this concept is really the only obstacle the program throws up, and once overcome everything slots into place.

The program also features 76 special effects, which are still-frame transitions; wipes of varying complexity are on hand to be incorporated into the animation, and there is scope for tailoring your own transitions. This makes for a fairly comprehensive slideshow utility, but as you cannot overlay one picture with another by means of an effect, it is not as practical as it might appear. However, they can be made to operate by the press of a predefined function key, so if you are recording onto videotape there is good scope for well-timed effects.

The program is accompanied by a fine piece of public domain software which will allow you to re-convert an Anim film into its component IFF parts, and there is a player program, which can be freely distributed, to enable you to spread your artwork around among friends. There is also a help feature, but all my attempts to make contact with this on the review copy were met with errors.

Conclusion

My initial reaction to PFX was one of wariness because of the programming language needed to create scripts. This soon mellowed and before too long I was impressed by the care, thought and power which the program offers. I must admit that it came into its own when it came to display sequences of half-brite images; all my other programs failed to match the expertise shown by PFX. And as this 64-colour mode will soon be taking off with a vengeance due to a re-vamped Deluxe Paint, I found it a tremendous help. The manual is comprehensive, with good tutorials and reference sections, and symbolises a fine attention to detail which the program exhibits. Tricky to start with, PFX is a nicely designed animation package, but at the price, aimed more at the professional user.

P.L.

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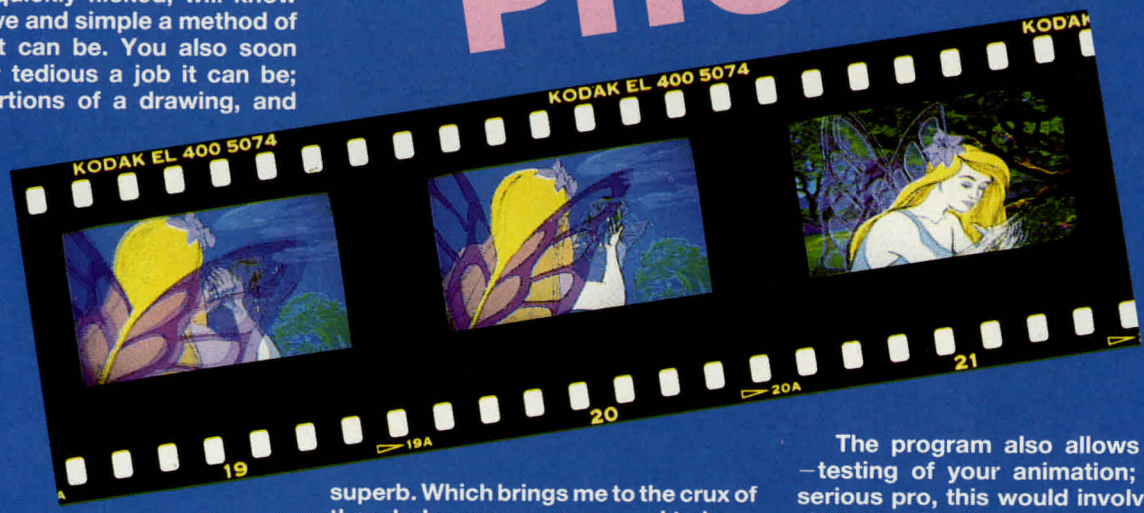
Testing a new video package, Peter Lee gets locked in the cells – and finds it an arresting experience!

PHOTON V

Anyone who has ever spent a rainy afternoon drawing changing images on the outside edge of pages of a note–book, then watching them move as the pages are quickly flicked, will know how effective and simple a method of animation it can be. You also soon realise how tedious a job it can be; copying portions of a drawing, and altering sections to simulate movement. But men have made a good living out of such a simple idea – just take a look at the Disney empire!



Thanks to the computer, the potential is there to form the basis of an animation studio: there are paint programs with which to create the images, and once a master drawing is completed, usually only small portions need be altered to achieve a good sense of overall movement.

The ability to flip through a series of still images to create believable animation has been possible on the Amiga for a long time, and now MicrolIlusions have launched their entry in the home animation field, *Photon Video Cel Animator.*

It joins the Californian company's illustrious Photon Paint, the unparalleled HAM mode art program, and although Cel Animator is simply a basic screen flipping utility, it does have some clever enhancements – chief among which is its ability to synchronize and replay sound samples.

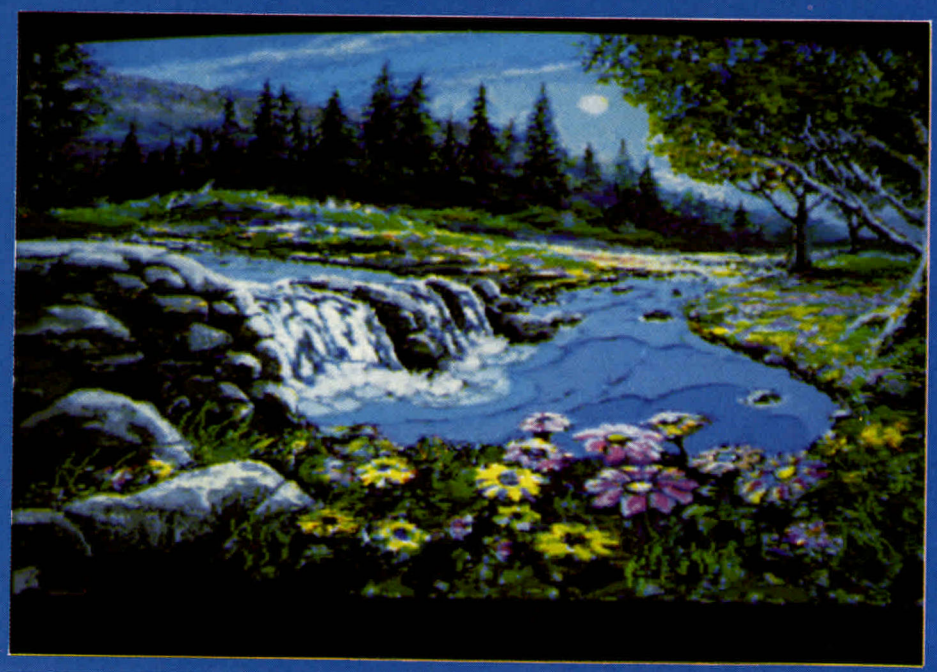
The program requires a minimum 1 megabyte of memory to run and comes on an unprotected disk, together with two disks of professionally–designed examples, and a pedantic but thorough manual written by a professional animator named Heidi Turnipseed. She has worked on cartoons such as An American Tale, Pete's Dragon, the secret of NIMH and many more, and her example graphics are superb. Which brings me to the crux of the whole program; you need to have created a sequence of drawings already to show them back as an animated display. So while Cel Animator does a fine job of playback, the storyboard concept and effort in getting them on screen still remain.

There are a number of ways of creating your screens, with perhaps the simplest a series of images created in an drawing program. Or you could store a sequence of images captured with a real–time video digitiser for playback and editing within Cel Animator.

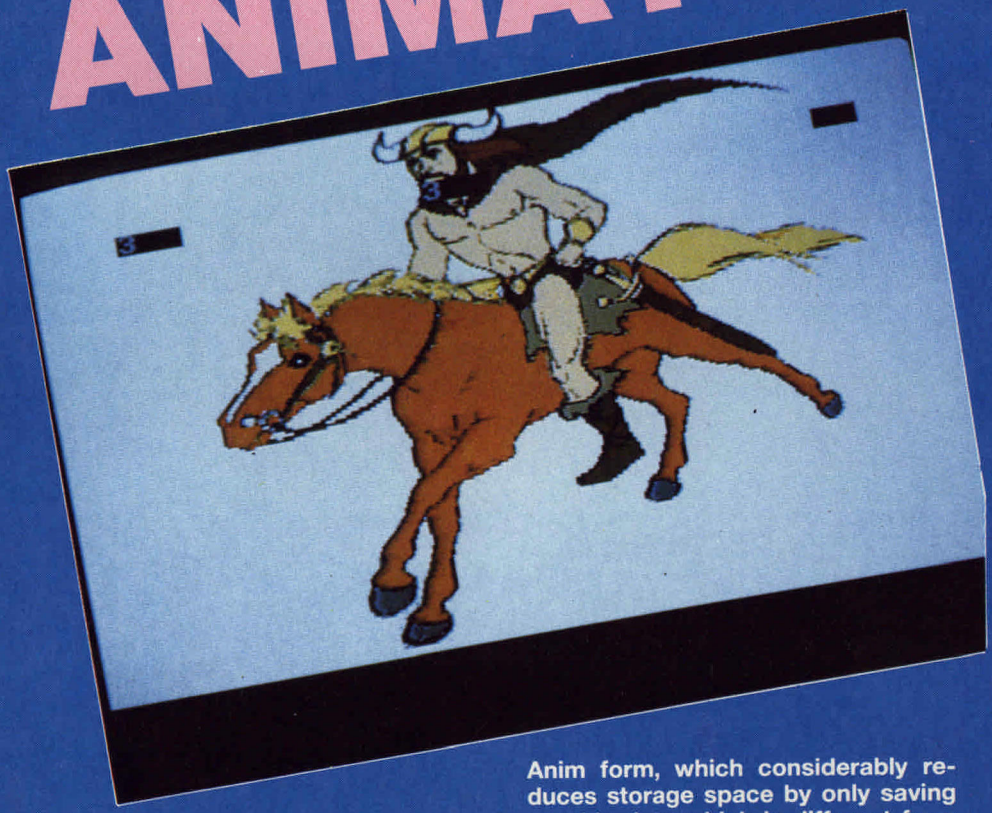
The program also allows pencil–testing of your animation; for the serious pro, this would involve firstly sketching the images on paper, then digitising them with a video camera and digitiser (the cash outlay is soaring, you may have noticed !). This is ideal for animation traditionalists like Ms Turnipseed, but the ordinary Amiga user can rest assured that results from computer paint packages are just as good.

All the Amiga display resolutions are accommodated, though there is a trade

off between the number of frames you can store in memory and the display mode chosen. On a 1Meg machi-



IDEO CEL ANIMATOR



ne, in 2 colour mode, you can have 89 low–res screens, 43 med.res (or interlace) and 19 in high res. – but fewer if you have sounds loaded as well, are using more colours or are displaying in Overscan, which is thankfully supported.

"...you may have up to 45 HAM screens resident, 55 32-colour frames in low res, but 281 in 2-colour mode."

If you are fortunate enough to have a 2Meg expansion, you boost the storage factor of course, and as an example you may have up to 45 HAM screens resident, 55 32–colour frames in low res, but 281 in 2 colour mode.

When the program first loads you have the opportunity to select the number of colours, resolution and frames required, and also whether or not you want to load in an already saved file. These are stored in the standard Anim form, which considerably reduces storage space by only saving graphic data which is different from the preceding frame. Once an Anim file is loaded, its individual frames are then available in the standard IFF format, and there is a modest art function in the program for on–screen touching–up, but this lacks any real potency.

Frames, once loaded either as a sequence of your individual IFF images ready for animating, or from an already created anim file, can now be played back in any order, and any sounds added to synchronize with events on screen.

This is a useful attribute, and one which can bring ordinary animations fully to life; you can use either your own sound digitiser, or load in samples from those available on Public Domain disks. By altering the playback speed (which ranges from 6 frames per second to 30) and the delay factor for each frame, it becomes possible to combine pictures and sounds in a precise and effective way.

Also helping this sophisticated process is the ability to display status information on screen as you move through the frames; you can play–back picture and sound frame by frame, with the opportunity to type in a phoneme to help you measure the progress of a sound as it evolves over a series of frames.

Another form of helpful information can be recorded in an exposure sheet, which acts like a notebook for your to keep a record of frame events throughout the sequence.

Cel Animator comes into its own when it comes to pencil testing animations;

these have to be drawn in two colours with white as the background. Using the facility you are able to see latent images of the previous frame ghosted on screen with the current one – you can have a minimum of 5 and a maximum of 10 previous drawings appearing in grey on screen simultaneously.

Naturally, Microillusions stress their own product Photon Paint for this colouring, and it is true that the ability to overlay a colour onto an existing one, and boundary fill, is very useful, but as this is restricted to HAM mode it may prove cumbersome. However, the upgrade to Deluxe Paint has its own tint option, and will boast an in–built set of animation routines which will save frames in Anim form, so this will be a good alternative.

Another Photon program, the highly specialist Transport Controller, is also useful in conjunction with Cel Animator: this software is used together with sophisticated video recording equipment (such as the Lyon Lamb MINIVAS, VAS 1V, and Videomedia V–LAN) which you hook up to the Amiga, and which allows frame by frame recording onto a VCR.

CONCLUSION

There is quite a healthy competition among programs able to flip through sequences of frames and play Anim files, and I must confess there is little to choose between them. What makes Cel Animator interesting is the pencil test mode, but for those people like me who jump in with both feet and animate in full colour on screen, this is of limited interest, and I certainly cannot envisage a day when I have enough time to construct a sequence of a couple of hundred frames ! The ability to add sound samples is a big bonus, and this may well sway your decision; sound synchronization is handled well, with plenty of editing flexibility. An efficient program, but one you should judge against the rest in terms of performance per pound.

P.L.

Price: £99.95
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INTERFONT

With six programs and a reputation to support, how does InterFont shape up? Peter Lee reports

Software designed to work with other programs has a precarious life – not only does it have to be good in its own right, but it also must support successful programs. Capitalizing on someone's success is a risky business; it might succeed, but it may appear as a sort of computer parasite which relies on an established program for its success. However, third party customisation can actually enhance an existing product; clearly, there are certain benefits, te best of which is the development of a symbiotic relationship between the two or more products. InterFont is such a program; it allows the creation of 3D fonts for use by Sculpt 3D, VideoScape 3D, Draw Plus, Forms in Flight, Turbo Silver and Professional Page. In its own right, InterFont is sterile without the power of the master programs it feeds; but with another program, it enables the quick and easy definition of fonts to be rendered in 3D – an extremely painstaking operation otherwise.

The program, from the United States company Syndesis, comes on a single unprotected disk, with a robust and clear manual that is vital as a guide through what is really a complex world. If you wish to incorporate 3D fonts into Turbo Silver or Forms in Flight, you will need to buy conversion modules separately. Other programs are fully supported.

Pre-made fonts are provided on the disk to help get things started, and a number of separate programs are provided, including one which will convert objects from one 3D format to another.

There are four different components which make up the software: designer, interchange, conversion module and converters.

Designer

This is the object definition aspect of the program, where you are able to create the shape of your fonts by constructing the polygon framework which is needed by the master 3D programs. In effect you are laying down a shape template.

The designer allows you to either trace around existing fonts you choose to load in, or create whatever comes into your mind. Each font file you create contains all the character definitions for that style (provided you have drawn them), and is used thereafter for any text input in that particular style.

You can load in any Amiga bitmap font and use it as the basis for your 3D object font. The character editor is well constructed, and shows an enlarged version of the current letter for you to overlay your polygons on. By tracing over the contours of the letter you create an InterFont. Pressing a keyboard character displays the font structure for that letter as you build up the new polygon-based font.

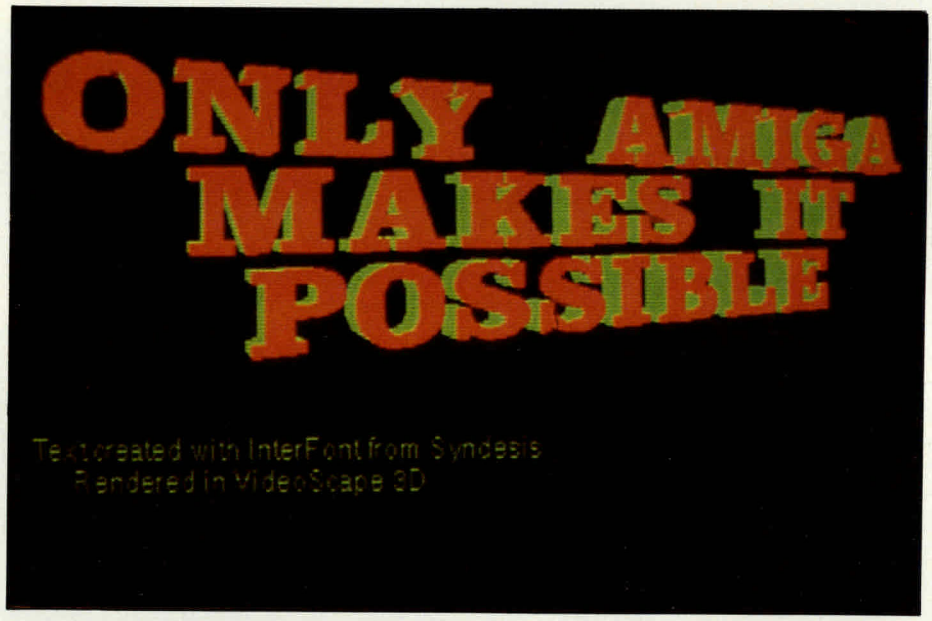
The difficulty with this process is because apart from needing a degree of dexterity to align your polygon outlines with the normal font, you must also work your way through the letters you need for your 3D title.To make things easier, a number of on-screen gadgets and menu options are there to help with the editing; therefore you have a constant preview of how your letter is shaping up – or not !

There is an automatic spline option which will simulate a curve after you have defined at three points on a polygon (the curve on the letter p for instance) and you can remove splines just as easily. Polygon colours are definable from a palette of 16 colours, and if you wish you may load in ColorFonts if you have them, instead of the usual monochrome Amiga fonts.

There is a copy and paste function for duplicating polygons between characters – perhaps using the letter 'c' as the basis for an 'o'. Polygons can also be cut and pasted back for better positioning. The program's colour palette can be modified to make sure your new text objects are in the collect colour before a 3D program renders them, and you can define a spread of hues for subtle shading.

Interchange

This is a proven utility which uses specific modules to convert object file formats between three dimensional modelling programs. For example it allows you to convert a Sculpt 3D object into a form recognisable by VideoScape 3D, where it can be animated. The Intuition interface to the program makes life simple, and the modular approach makes for an open-ended system which can be enhanced as and when new modelling programs come along which require data in a different form.



Conversion Module

Three dimensional text objects are created by handing InterFonts to this utility. Using information from an InterFont template it constructs a solid text object generated to suit the 3D program of your choice. It operates only after Interchange is running, and allows you to enter up to five lines of text which will become the new 3D object.

continued on page 71

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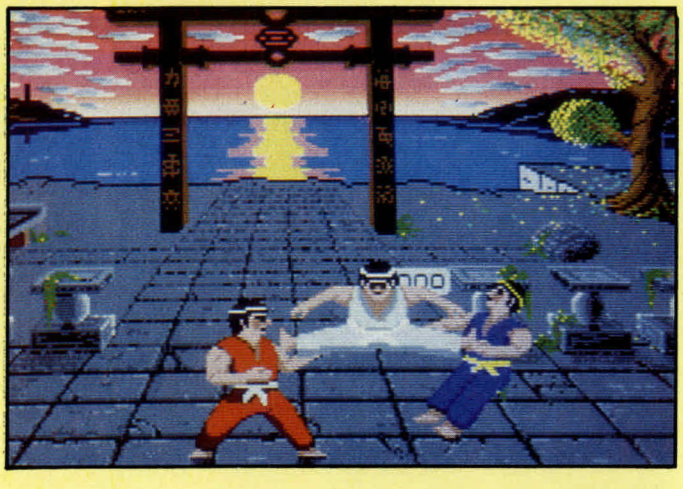
Animated Entertainment

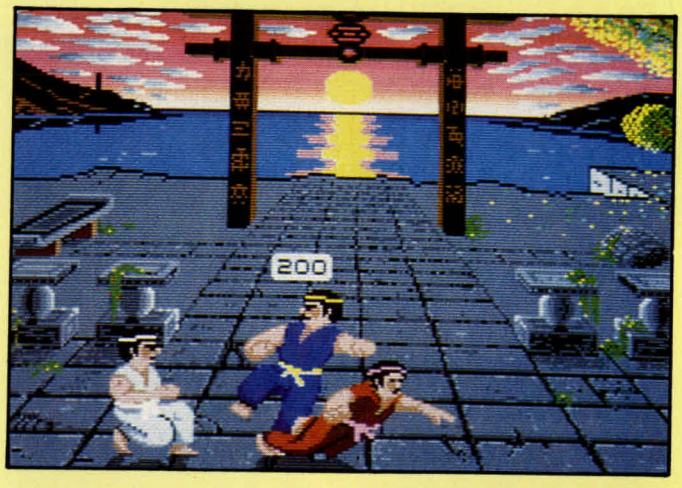
Joystick wonder, Tony Horgan, looks at the games' graphics and animation that the Amiga so fantastically offers

Computer animation is big business these days. You only have to switch on the TV and you are bombarded with adverts, logos and programme intros that would have been an impossibility just a few years ago. Banks, TV companies and the like have the resources to shell out enormous sums if they feel the need, but stunningly animated pixels are not just for the big boys. The fast-growing base of software for DIY animators, especially on the Amiga, proves this, but you need not even go that far for a taste of just how fast things are moving. Just look at some of the games available for the Amiga and see what you are getting for a comparatively paltry four hundred pounds.

Placed alongside a select choice of Amiga games, "conventional" computer animation seems extremely limited. If you take a look at any local TV logo sequence for instance, you will find they simply consist of a three dimensional construction of the corporate logo type viewed from all kinds of wild zooms and pans. Take a cross-section of Amiga games and you will find an equally amazing variety of outlooks and perspectives on their own worlds.



Two dimensional sprites are the traditional basis of game graphics. On a machine such as the Amiga which has dedicated chips for dealing specifically with these kinds of graphics, sprites are often the simplest method. These are known as hardware sprites, as all the drawing, redrawing and erasing is controlled by the computer. The trouble with these is that they limit the programmer to using sprites of set sizes, colours and number. To get around this, routines are often devised by the programmers themselves to mimic the hardware whilst allowing greater freedom of colours, and often, most importantly, allowing an infinite number of sprites of any size. These are known as software sprites, as all the control routines are held in the main program.



An excellent example of sprite use is System 3's IK+. Three karate experts leap around the screen with twelve attacking moves and a handful of evasive actions to choose from. Headbuts, flying kicks, gut punches and back flips have all been realised with an enormous amount of animation frames. While most programmers are constantly trying to speed-up their graphics code, artist, designer and programmer Archer Maclean has had to slow his right down to get it anywhere near a playable speed!

IK+ has some pretty big sprites, but what if you want characters two-thirds the height of the screen? Sounds like a job for the blitter. Bobs, short for blitter objects, are just the things. Discovery's epic Sword of Sodan exploits the blitter with stunning results. Giant sprites had been attempted before in US Gold's conversion of Street Fighter but were so slow they ruined the game. Street Fighter was played with just two characters against a static backdrop. Sodan

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Animated Entertainment

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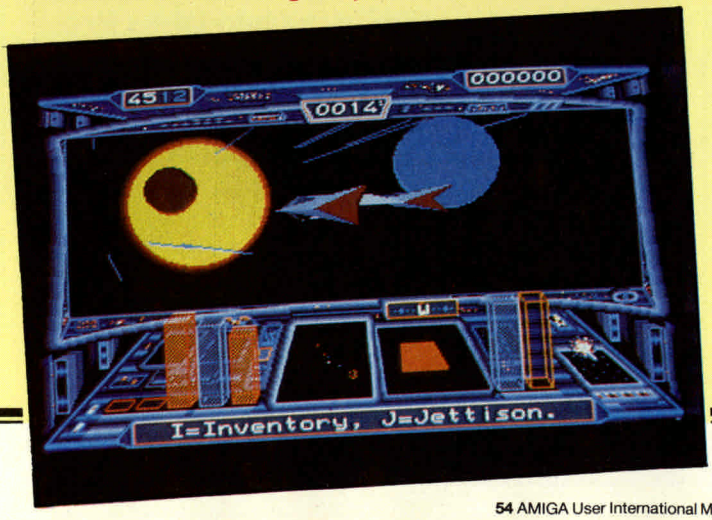
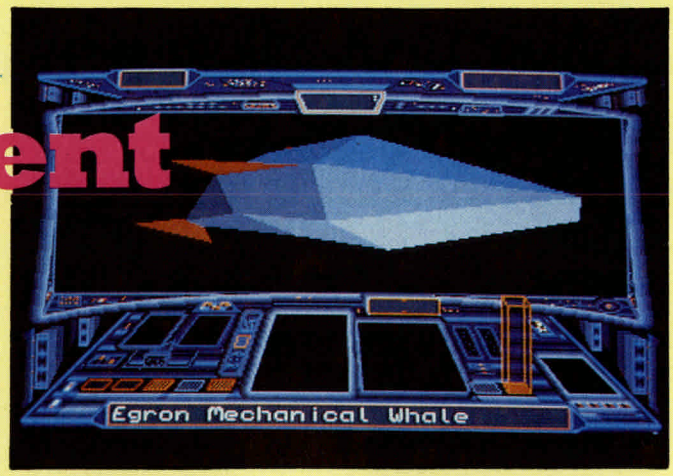
often has four or five warriors stabbing and chopping each other over a detail-packed smooth scrolling background at a fantastic speed. Keep an eye out for that overgrown turkey!

Another sword-swinger that scores highly in the graphics stakes is Dragon's Lair. Transferring an entire interactive cartoon to the pixelated screen of the Amiga must have seemed an impossible demand when the programmers for Readysoft took on the task. They claim to have crammed 130 megabytes onto the six game disks, that is some heavy compression with only 880K as the standard capacity of a single disk! Dragon's Lair is like nothing else you have ever seen on a home computer. Bar the pixels there is just no way you could distinguish this from a real Disney-quality cartoon.

Moving into 3D, Electric Dreams' conversion of Super Hang On emphasised the narrowing gap between coin-ops and home computer games. Speed is an essential ingredient in the game's success, something there is plenty of in the coin-op. Until Super Hang On, such coin-op conversions had made admirable attempts to recreate the speed and exhileration of the original, but never came close.





Super Hang On even goes as far as to be more playable than the arcade machine, perhaps due to its slightly clearer graphics.

Developing the 3D theme further brings us to Starglider II. Jez San's Argonaut Software team have created a whole solar system of planets and moons inhabited by a stunning variety of creatures. Stompers, walkers, stargliders, fighter ships, pac-worms and loads of others can all be found on their own planets and moons, whilst others such as the mechanical whales are found swimming around the upper atmosphere of their favourite worlds. Unlike IK+, Sodan or Super Hang On, all the objects in Starglider II are not stored as blocks of pixels, but sets of nodes and dimensions. A large sprite or bob may take up a good few K, but a fully zoomed view of a mechanical whale would only need a few bytes of data whilst occupying a substantial portion of screen memory.

With Starglider II, Amiga graphics are becoming amazingly close to those of the mega-buck mainframes behind the evermore popular broadcast animations, and unlike the TV logos and adverts, Starglider II is all done in realtime! Compare the price of the game and an Amiga to the sum of five million pounds quoted for an hour of computer animation for a forthcoming film, and it looks, as an Amiga user, as if you have got yourself a pretty good deal!

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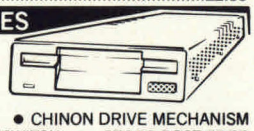

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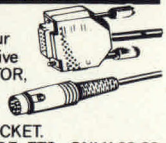

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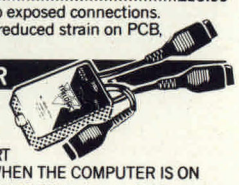

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Sculpt-Animate 4D

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This is essentially what Sculpt Animate 4D does. Three dimensional objects are constructed from triangles, and once formed they can be placed anywhere in the computer environment in any aspect with light coming in any direction, intensity and colour. Any view of the objects can then be seen in a variety of resolutions, and furthermore, any transformation or movement of the objects can be seen in animation.

Objects:

Construction of objects is done within the TRI VIEW, 3 standard Amiga windows which show plan, side and front elevation views. The area viewed can be expanded, contracted or moved to view the entire Sculpt Animate world. The Tri View windows contain gadgets for the most frequently used functions and with experience become quite easy to use.

Objects can be created by plotting individual points (vertices) and joining these with lines to make triangular faces. Co-ordinates and a grid can be selected and a tape measure and protractor are available for accuracy. Virtually everything in life can be represented as a combination of triangular faces, the realism depending on the number of faces used.

Tools exist to create spheres, hemispheres, circles, disks, cubes, tubes and other common forms automatically. Once formed an object can be reproduced, distorted, extruded, sized and rotated, either as a whole or in part, to produce any shape at all, in any aspect. Every manipulation of a vertex distorts its connection to the adjacent vertices. This makes devices such as expand/contract especially powerful. For example, if only one face of a cube is selected then that side can be shrunk so that the cube becomes a pyramid. In addition, the magnet attracts or repells selected vertices. The closer to the magnet, the stronger the pull or push. This is useful for uniform distortion of objects, such as pulling the shape of a nose from a sphere.

Curves can be spun to produce objects which have symmetry about an

continued on page 58

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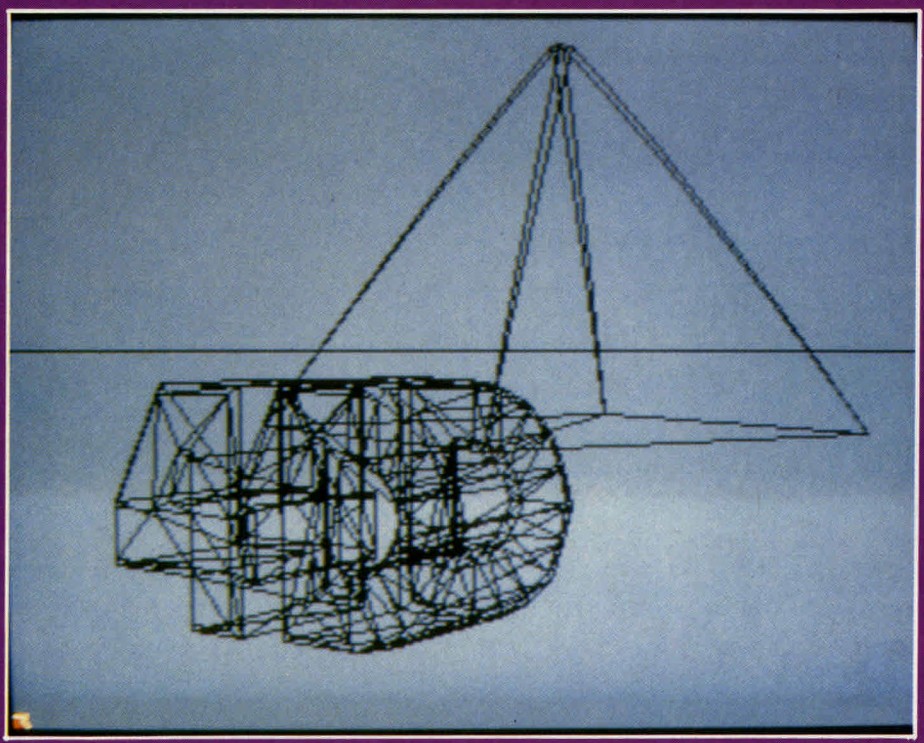
continued from page 56

axis. With an offset, they can form helices such as screw threads, and a curve can also be created automatically using SPLINES. These are abstractions of the pieces of wood or metal used by designers to create curves between set points or KNOTS. A certain number of vertices within the curve are designated knots. Movement of these causes the computer to plot the other vertices as smooth curves between them. Curves may be closed and be representations of slices through an object. The computer, on command, will construct faces between these slices, allowing the user to construct complicated shapes with ease.

With this powerful program, the number of objects and the complexity of their shapes is limited only be memory.



Viewpoint:

An observer is placed within Tri View and targetted in any direction. The view of the observer can be tilted 360 degrees. Lamps are then added to produce any number of light sources wherever required at any intensity and in any colour. The observer can be thought of as holding a camera; the focal length of the shot can be altered. There is an option (lens special) which is flexible or there are fixed options of normal wide angle and telephoto. You may also choose to have normal or automatic exposure control.

The observer's view can then be seen in wire frame or any of the Amiga's standard painting or HAM modes. Faces can be treated in the lower resolutions to give shine and smoothing to surfaces; phong smoothing makes adjacent flat faces into a smooth contour which reflects light evenly across its surface. When used on a many faceted sphere it creates the illusion of a perfect orb.

Images saved from painting modes are saved in standard IFF format and can be loaded into other Amiga paint programs. Models could therefore be held in Sculpt Animate as library objects to simulate any view required for an Amiga paint image. Since objects can be resized, totally distorted and viewed from any angle, this would easily repay any work in setting up the initial construction.

In HAM resolution, the further attributes of glass, metal, mirror and luminosity are available. In the highest resolution, PHOTO, these can be combined to give a highly realistic representation of an object. For example, the sky and the ground can be included in the scene and given colour. In the HAM modes you are able to specify a checkerboard pattern as ground with variable sized squares to give you an enhanced feeling of depth.

Rendering time increases both in relation to the complexity of the scene and to the resolution of the final image. Whereas a wire frame picture may take only a few seconds, a full screen photo will take hours to render. To produce mirror and glass faces the computer must trace each pixel to and from its light source to accurately reflect other objects. The addition of shadows in PHOTO mode also increases the already phenomenal number of calculations the computer must make. The problem of render time is not peculiar to the Amiga. It is the one factor which makes professional computer animation so expensive as machines are tied up for so long.

To get around the problem of draw up time there is an option to size the image produced from tiny (48 x 32 pixels) for first previews, to full scale video (357 x 290 pixels). In the HAM modes you may also choose the amount of anti aliasing and dithering the image uses.

You are also given the option to restrict the number of bit planes (and therefore the number of colours available). There is one option here which is meaningless to the Amiga but of real interest to anyone with access to more specialised hardware. It allows a bit plane number of

"It allows a bit plane number of 24 (giving 16,777,216 colours!)"

24 (giving 16,777,216 colours!). The image is saved out in three raw data files (R,G,B) to whatever pixel screen definition you choose (maximum width 32,768 pixels).

Animation can be realised either globally, by giving an object a path to travel over a number of frames, by changing an object individually frame by frame, or by a combination of these methods. Objects can be tumbled as they follow a motion path. Frame animation makes use of "in betweening". Certain frames can be designated key frames. The program will progressively adjust objects that change shape between these key frames.

A system of hierarchies can be invoked which relate the movements of objects to each other. For example, a body can be given a path to follow. An arm will follow the same path as the body but move independently. The hand and fingers will follow the arm but have their own separate movements. Paths can follow paths. In this way extremely complex animation models can be constructed.

Each view throughout the animation is rendered and saved individually in a compacted form to be played on reloading as a continuous real time movement. You choose the length of time each frame is displayed and whether the animation loops around or oscillates. The amount of animation that can be run depends on the memory available. 1 megabyte is essential but even this will only run a few seconds of a complex movement. Rendering and compacting time gets longer as resolution increases. It will probably take days to process an animation in photo mode and the software manufacturers recommend a hard disk for any ambitious project. Even then, they recognise that the best results will come from dropping down individual frames onto a professional standard video recorder as the memory requirement for a real time animation is vast.

Having said all that, it is relatively quick to produce a long wire frame animation that accurately represents a

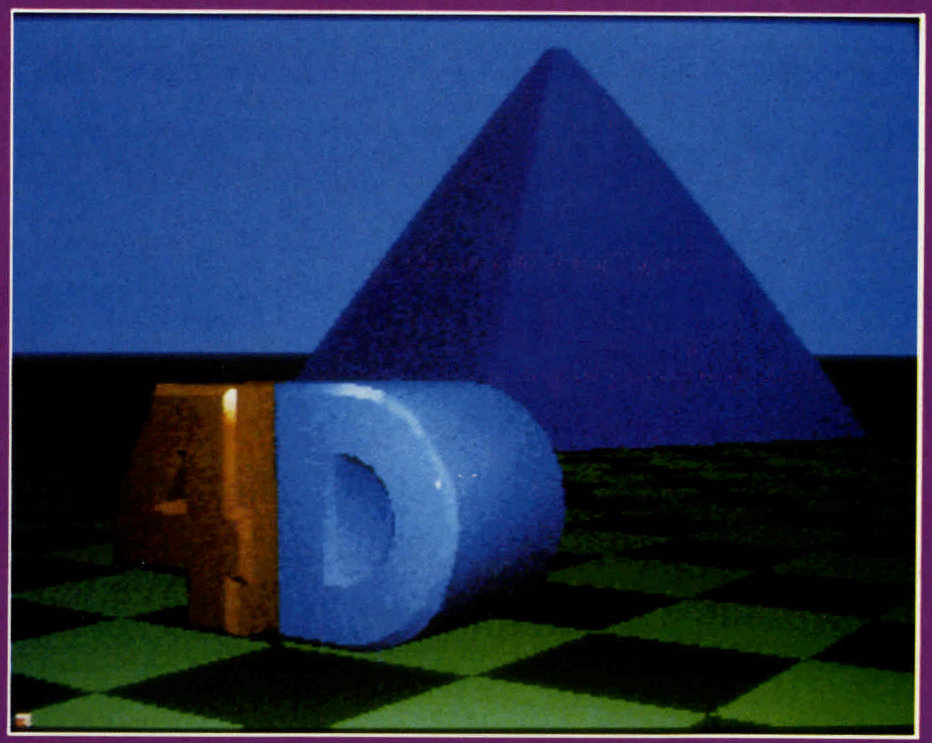
complicated motion. If it is the motion that is important then this is a superb tool for realising it.

While rendering the computer is freed for other tasks whenever possible. A window monitors the percentage completed of each task as it performs. This is very useful as a guide to the length of time the whole process will take. If at any stage of render the machine runs short of memory, non essential parts of the program are dumped to be loaded back later.

The program is menu driven but allows definition of any key for any task for speed of use. This is an intelligent option as it gives real control to the users who may adjust the program to suit their needs. The program can be controlled from a script (standard ed.script). It is possible to give any command within a script including input and output so you have the option of working with the computer directly or leaving it to work on its own for long periods. For detailed technical specification it would probably be easier to instruct the computer via co-ordinates than to draw with the mouse.

The keyboard can also be used when loading in specialist fonts. I have seen six of the Tate fonts on two disks. They are fairly simplistic but represent a huge amount of modelling time and these letters can easily be modified to your own use with Sculpt Animate. Letters as objects can be called from disk by pressing the relevant key and are placed automatically in the correct position relative to each other. This saves considerable time in placement as a whole word can be moved as one object.

The beautifully-produced hard backed manual in a ring binder deals very comprehensively with an extremely complicated subject. On second reading, following the examples deslribed, it becomes easy to grasp the basic principles of the Tri View and construction of objects and animations; it explains in detail and with pictures how to use all the functions and all the options are cross indexed and clearly laid out. It also includes a functional reference, a glossary and technical information regarding file formats and error messages. More complex manipulation of the program comes through experiment and this can be excruciatingly frustrating as it takes a long time to see if it works. You can get a pretty good idea of the final result using wire frame animations and the low resolution modes but there still comes a point where you will have to commit the Amiga to days of processing if you want to see it at its best.



Sculpt Animate 4D comes with a standard disk program and one for 68020/68881 versions. It also includes a data disk with a couple of simple animations (including a rather lovely mechanical bird). This disk has a movie player which allows animations to be played without having to access the master program disk. There is no protection on the disks. The manufacturers rely on the system which requests words from the manual and quite frankly, unless you have some experience of the program, you won't get far without the manual.

"The beauty of this whole system is that you only have to define an object once."

The beauty of this whole system is that you only have to define an object once. The program developers have made it relatively simple to do this and have included many high powered tools to perform complex tasks automatically. A great deal of consideration has been given to the problems a user might face and solutions have been given. Once an object has been created it can be used again and again in still images or animations. Even within the standard 320 x 256 pixel resolution of the Amiga it is amazing what high quality images can be made. The computing power produces accurate representations of glass and mirrored objects in a relatively short time that would be completely daunting to draw freehand.

The only limitation is that of the Amiga itself and any program which uses the computer to its fullest (and indeed includes options for additional hardware and memory) must be highly recommended.

H.R.

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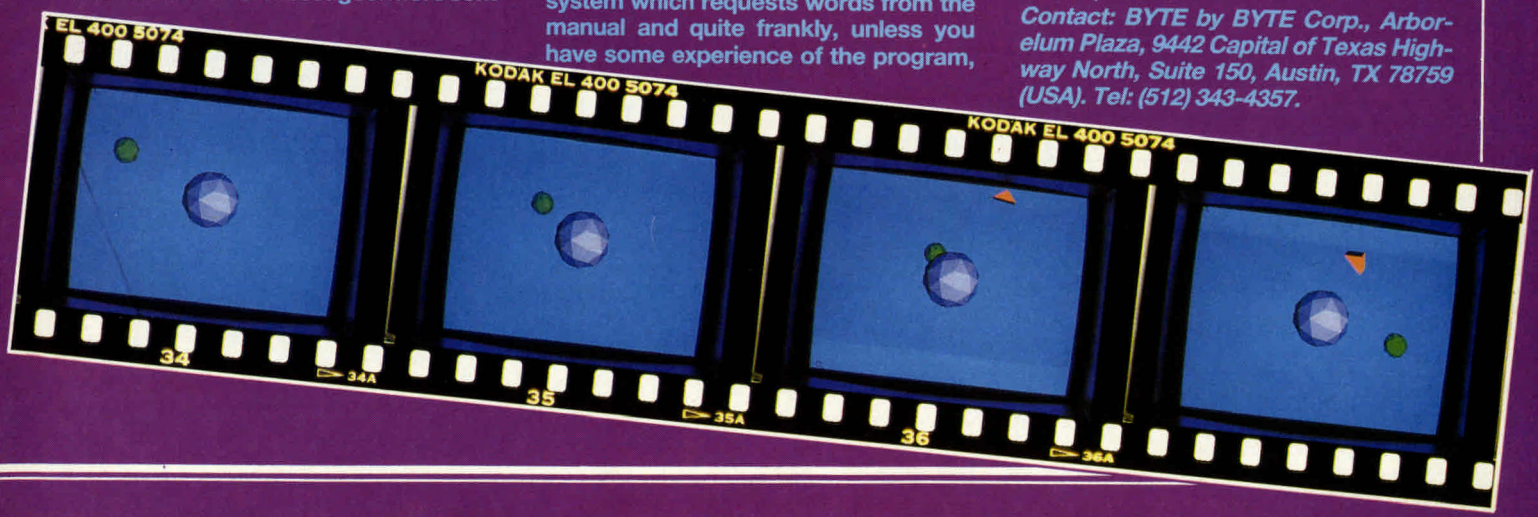

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BALANCE OF POWER

THE 1990 EDITION

Chris Crawford is something of a leisure software Guru in his home country of the USA. His reputation for the degree of imagination and flair which he introduces to his game has elevated him to the position of one of the top designers in the United States. In addition, he has strong views on software design in general. He even wrote a book on the subject, "The Art of Computer Game Design".

After leaving Atari, where he wrote "Eastern Front 1941", among others, Chris Crawford set himself up as a Freelance Designer. It was during this period of his career that he wrote the original Balance of Power. It immediately caught the gaming public's attention. The design and sheer depth of this masterpiece earned Crawford critical acclaim the world over. He has had no peace of mind since because of the demand for a sequel; demand which has been satisfied with the publication of an updated and modified version, "The 1990 Edition".

For those of you who may have missed it the first time around, I will give a recap of what the game is all about. Balance of Power is a Geopolitical simulator for the nuclear age. You, the player, are offered to control either the USA or USSR. The object of the game being a contest between the two Superpowers to see who can gain the most power and prestige. One way of achieving this is to "donate" military or economic aid to a chosen country, which will help to improve relationship with the incumbent Government or, as an alternative, aid rebel forces or send American troops to subvert a particularly intractable Government.

The game offers a well presented interface which is well suited to the Amiga. Mercator projection images contain all of the relevant information which is requested by the player. For example, clicking on the "countries" portion of the menu bar, which runs along the top of the screen, brings down a menu containing a variety of choices. Not all of which will be selectable. Those that are not will be "grayed". Selection "spheres of influence", for example, changes the world map displaying a variety of colours with an associated Key. The clear, concise graphics will enable you to assess who falls within your "sphere" within an instant. Clicking on a country will highlight it and bring up a window which contains a variety of information such as that country's relationship twoards you, your prestige value in that country, how much aid you are giving to the Government or Rebels, the country's political philosophy, the Government stability and so on. It is on this screen that the player can judge who holds sway within the country. So a decision about whether to support the Government or the Rebels can be made.

There is Government opposition in every country but it is the strength of this opposition which will influence your decision about whom to support. However, the decision about Aid is not as simple as that. Some strong Governments, with an ineffectual amount of internal insurgency who are hostile to you may never accept Aid of any sort. While some may accept Economic Aid but not the insertion of troops. However, it is when you become heavily involved in a country which is under the sphere of influence of the other the other Suerpower that confrontations occur.

Let us say that, as the USA, you have noticed that the USSR has stopped all military aid to Vietnam. In a fit of historical déja-vu you decide to send in the Marines. At the end of the turn the USSR responds to your imperialistic attitude by having a private word in your ear. Being of a staunch nature you ingnore the protest. However, the USSR will not take this action lying down so they announce the world that they deplore the aggressive actions of the USA. While it may have cost you nothing to back-down after the first protest, now the USSR has gone public the eyes of the world are upon you so prestie is at stake. The country who backs down now loses prestige points. Threats are cast between the parties and if no-one backs-down the issue increases in tension so that DefCon procedures are taken. If the tension escalates to DefCon1 then nuclear war begins and the game ends. A final message lets you know, in no uncertain terms, that you have lost. This situation will not occur all of the time but alot will depend on your judgement of each particular case.

The latest version, "The 1990 Edition", has a database updated, for every country, to the beginning of 1988. One of the minor crticisms of the first version was the exclusion of certain, smaller countries. To rectify this the latest version now includes 80 countries instead of 62 with additional information for the "Background" section. Each Superpower now has the option of interfering in other country's policies, home and foreign. The most visual change is the addition of the "Crisis Advisory" board who lend their experience to a particular situation in an effort to guide you. This feature is particularly helpful for beginners. Finally, there is the addition of the "Multipolar" level of play where all of the world's countries play a bigger part in the game.

The original version of Balance of Power was innovative and imaginative with an unprecedented depth (and width!) of gameplay. The latest "1990 Edition" exhibits a thoughtful fine-tuning of the original. Each improvement contributes to the game resulting in a mature product which nobody can afford to be without. One thing is for sure. We have not heard the last of Chris Crawford.

P.R.

Graphics: 8
Sound: N/A
Playability: 10
Value: 10
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HOLLYWOOD POKER PRO

Reline

One after another these strip poker games appear; sequels, updates, data disks, the only variations occuring in the quality of the graphics. Hollywood Poker was one of the first on the Amiga, and now Hollywood Poker Pro has arrived you can do it all over again.

It starts off well with a digitised silhouette of a girl dancing to some sampled music, rather like the title sequence of Tales of the Unexpected. When you have had enough of that you can choose to play against one of four girls. The game plays just as any of the rest, with icons used to control the betting and changing of cards. You both start with 100 credits and can bet or raise the stakes by up to 25 at a time.

"Once your opponent runs out of credits she sells an item of clothing for another 100 credits."

Once your opponent runs out of credits she sells an item of clothing for another 100 credits. If your balance falls below zero you lose the game. Some degree of unpredictability has been programmed into the opponents, and should the stakes rise drastically it is worth considering whether she may be bluffing.

The graphics are sharp, but if you want a close-up you can use the zoom feature which doubles the pixel size. A few slow tunes play in the background but are not the sort of thing you can bear for long.

Just like all the others, Hollywood Poker Pro is a good laugh with the boys, and once you have started you have to beat them all. When you have done that, and it won't take long, I can't see anyone coming back to it. I won't pretend I found it offensive, boring or tasteless. It's just a good bit of fun, but a very short-lived bit of fun. I wouldn't bother with it if you have any other strip poker games, as it just doesn't offer good value for the money. But it's better than playing chess with your brother on a rainy day.

T.H.

Graphics: 8
Sound: 5
Playability: 6
Value: 5
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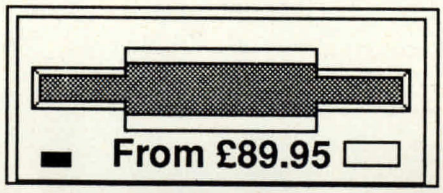

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Access

Professional Draw

Is Professional Draw good enough not only to attract Amiga users, but to attract other computer users to the Amiga? Once a Macintosh fan, Nancy Picard's conversion to the Amiga camp is underway...

Some programs use bitmapped graphics, which are images made up of tiny dots (Roy Lichtenstein's pop art, for example). Professional Draw on the other hand is a structured drawing program, which basically means that the images you import or create are perceived by the computer in a high resolution mode – as lines, rectangles, curves and ellipses. This means that the image is more clear, and that you are really only limited by the type of printer you use, whether it be a PostScript laser printer, a typesetting machine, or a dot matrix type.

Creators of both ComicSetter and MovieSetter – as well as Professional Page, Gold Disk has used its expertise to bring together the elements of drawing tools, bitmaps, colour and most importantly, printing technology to create this useful and very user-friendly program.

You must employ the tools that Professional Draw provides (the Pen, the Ellipse and the Rectangle) to create designs and images unlike using a pen or brush. Your drawing is actually formed from the objects you link together and scale, rotate, clone, distort and colour.

Professional Draw will also let you include bit-mapped graphics in your images – over which you can trace whatever you like. In addition, allows you to manipulate text and headlines much as you would do with any other graphic element.

To incorporate graphics into Professional Draw, you can either digitise them or scan them. Pro Draw can output files in Encapsulated PostScript Format (EPSF), which means that the files are compatible with a large range of other systems (Apple Macintosh, MS-DOS, and others). You can then import your file into other desktop publishing sytems and manipulate it within that system's limits.

As you can see from the illustration, I have created a full colour image, as opposed to drawing over one that had been digitised. This particular image is in high resolution when printed – a laser printer can achieve a resolution of 300 dpi, while a Linotronic with a PostScript processor can draw it at 2400 dpi.

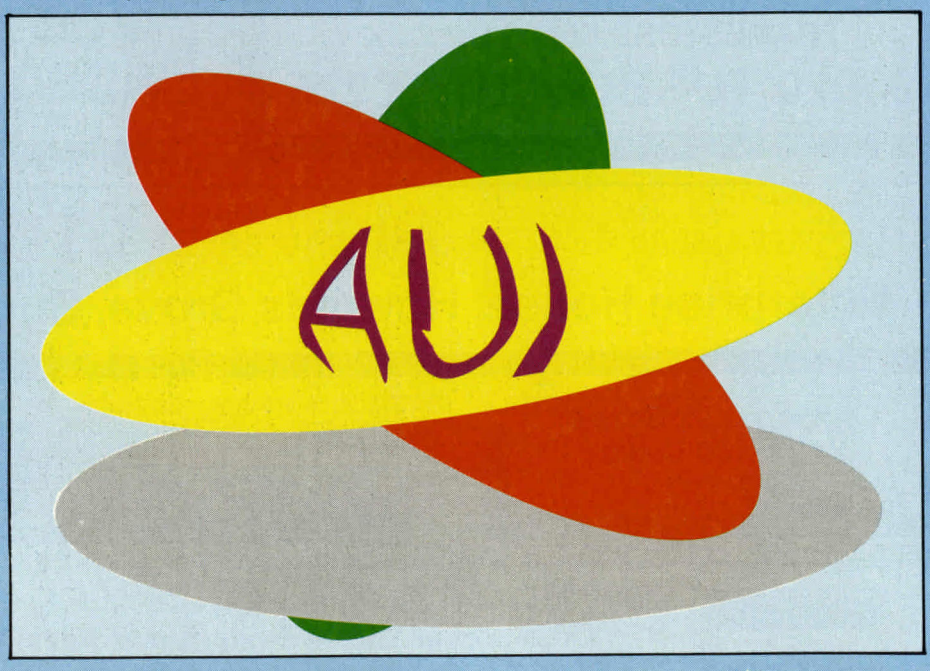
The Page menu, includes a number of adjustable settings such as page sizes and margins. A representation of the page will remain on the right hand side of your screen (your art board) as you work.

You create images by using the various icons. For example, the Pen icon will draw straight lines, with the control points appearing as black squares at the point at which you click the mouse button. For precision, the X and Y coordinates displayed at the top of the screen. One difference I noticed between Professional Draw and other programs is that you must hit the ESC to stop drawing; this saves you from holding down the mouse in order to create the lines.

You can either delete selected objects (all of the control points will appear when you click on it), using the Delete item in the Object menu, or using the Shift/Back space or Shift/Delete keys.

Professional Draw contains six drawing tools and six editing tools. The Fill function will fill the area bounded by the lines that you draw and then ESC from; in other words, it, treats each section of lines as one object to fill.

I also used the Beszier curve function. Click on this icon, cross hairs will appear on the screen. Using the cross hairs as a guide, I dropped one anchor point, then I dragged the mouse in the direction of the slope of the curve. A line will appear through the anchor point with small black squares on each end. When you release the mouse button, the curve will be attached to the crosshairs, which you then use to move the curve. As long as the icon is selected, I could press the left mouse button and continue as before. To create a closed curve, the last anchor point of a line was dropped on top of the first and held the CTRL key held down – the object was



finished automatically. Nice touch. To manipulate the shape of the curve, you adjust the anchor points by using the Null Pointer tool and clicking on a control or on a direction point.

The program also contains a free hand drawing tool as well as the usual algorithimically-defined objects such as ellipses, grids, and rectangles. The idea is to create the structure of what you are drawing before you place colour, so that the computer will take less time to redraw your work as you make modifications in the early stages of a drawing.

Editing

Once drawn, you can then change the shape and size of the object using the editing tools. The Object menu allows you to group and ungroup sections of the drawing so that you may then edit more that one section at a time. Your drawing can also be completely reproduced, or cloned, and you can even layer your drawings over one another (indefinitely, if you like). These editing functions are fairly standard on graphics programs.

The sizing tool allows you to stretch and flatten what you have drawn. You can also use the ALT key, in conjunction with the sizing tool, to change your object in equal proportions on the x and y axis.

However, you may not only want to change the size of the object, but its angle as well. This process is especially helpful if you are outputting a graphic with different colours, as the colours have to be rotated and printed at different angles on final film. You can also specify the exact degree to which you want the selected section angled. The Mirror tool allows you to do just that – mirror a selected object (especially helpful for drawing hearts...)

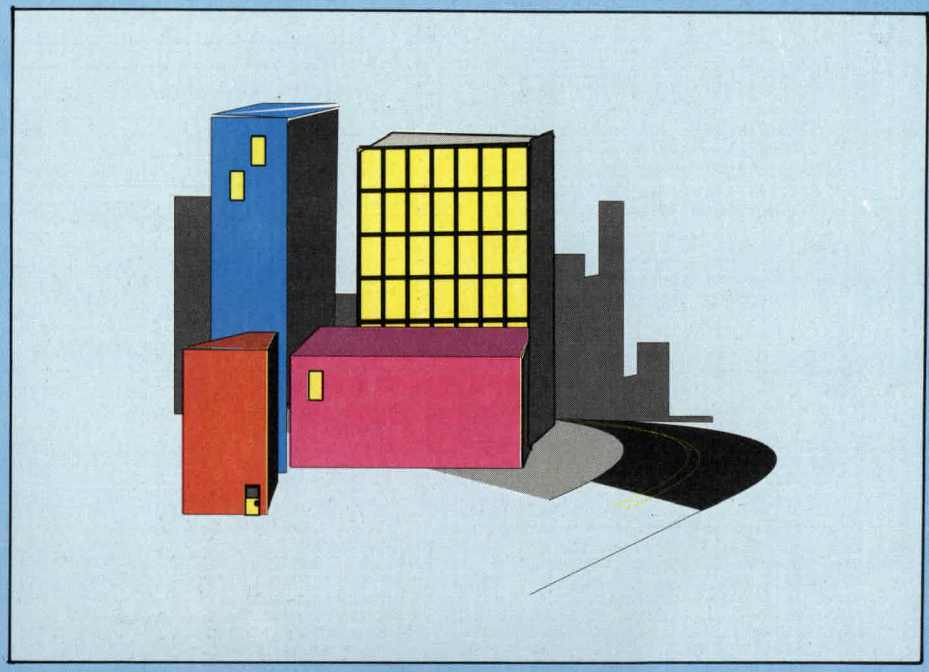
One of the most fascinating tools is "Distortion", which allows you to stretch an object in virtually any direction. By hitting the space bar, you can see the effects of the Distortion, and also have the chance to abort what you have done before it is saved.

LINE, WEIGHT, LINE PATTERN, FILL/NO FILL, INK COLOUR, FILL COLOUR, JOIN, LAYER

The true power of the program, however, is linked to what has made the Amiga such a standout among computers – the colour. You can fill objects with colour from any one of the selections in the Color Menu, or you can create your own. The program also allows you to add your new colour to the current colour list.

The on-screen display can show up to 16 colours at a time, defined in Red, Green and Blue (RGB) values. The program also displays on the the Color Palette the percentage of yellow, magenta and cyan colours used in the actual printing process.

Professional Draw has two colour functions that can be essential to detailed colour work: Custom Colour, which allows you to assign arbitrary screen colors to distinguish what will be printed as slight shade variations; and Mechanical Colour, which allows you to work on a page that will be saved as one completely separate colour for printing.



Text

Another feature to the program is its ability to manipulate text. After typing a word or a line, you can fatten it, stretch it or tilt it in any direction. And even more impressive is the ability to fill the type with any one of the Amiga's 4096 colours. The package arrives with two fonts incuded, a sans serif outline font, and a serif outline font. The program treats them as structured graphics in the same way as it treats drawings.

Do not expect to write the next great British novel here. As the manual states, "Professional Draw's text capabilities are intended for the short series of words used in headlines and signs, for example."

Graphics

Depending on the amount of memory you have, you can incorporate IFF-compatible bitmapped graphics into Professional Draw in any resolution from 1008 to 1024 pixels. You can then output in black and white (including gray halftones) and color, depending on the type of printer you are using. One drawback for new users is that color bitmapped graphics are never displayed as color; instead the colour information remains stored in memory whilst you work using a four gray-tone representation. You can then crop or size the graphic. These graphics, and any other that you create, can be stored in the Clip file for future use.

Printing

Now that your masterpiece is finished, it is time to print. Professional Draw supports all graphic-capable printers, which includes both dot matrix, colour Ink Jet and PostScript types. Professional Draw allows you to output your work at a special horizontal and vertical values, control the density of your printer's dpi, and also control the pattern of dark and light pixels on the printed page.

Professional Draw has covered all the options: halftone screening, page rotation and the use of a variety of film and paper sizes is available.

You can print in different colour separations – including 3 Colour and 4 Colour options, in case your printer uses black plates to boost contrasts, etc. The program allows you to select the density of the halftone screen

Conclusion

Professional Draw is an excellent program to use in conjunction with a DTP package, but should not be expected to perform as, for example, DeluxePaint III. Its most useful function is the ability to allow you easily to manipulate text and graphics, and to print them in various ways using many different types of printers.

By programming Professional Draw to output to so many types of systems, Gold Disk has created yet another link between the Amiga and other well-known computer graphics packages. Because the Amiga itself is so well-priced, compared to the outrageous sum you would pay for a Mac II (the Mac that displays colour), one can only hope that the Amiga will attract more serious graphic arts professionals – as Professional Draw's somewhat high price suggests. After using the program, I must admit, I am completely converted. Professional Draw is highly recommended.

N.P.

Price: £139.95 (including VAT).
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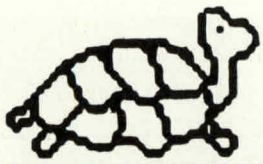

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DTP Graphics

part IV

John Walker continues our series on Desk Top Publishing.

There are two types of computer graphics: bitmapped and structured, or object orientated. Bitmapped graphics are made up of pixels (picture elements) which are made up of sequences of dots on the screen. When a bitmapped image is printed, each pixel is transformed into a dt on the paper.

So what you see on the screen is usually what you get in the hard copy. Circles tend to square rather than round. Curves and lines are jagged rather than straight.

Structured graphics look the same on screen. But they print quite differently on a plotter, or on a laser printer or typesetter. A structured graphics is not so much an image as a series of instructions to the printer as to how it should be drawn; it's closer to geometry than art.

Computer Aided Design programs such as Aegis Draw use structured graphics. When printed using a plotter, the result looks as if it has been painstakingly drawn by a draughtsman – the lines are straight and the circles are perfectly round.

On a laser printer, structured graphics are reproduced at a resolution of 300 dots per inch. On a PostScript-compatible imagesetter, they will be printed at a resolution of up to 2450 dpi.

Although the Amiga is pushing personal computer graphics to the limits, it lacks the sort of structured drawing program that is now commonplace on a computer such as the Macintosh.

There are only CAD programs such as Aegis Draw and X-CAD and the basic structured drawing tools supplied with the best DTP program Pofessional Page. What we need is a Professional Draw – and the good news is that we now have one.

Bitmapped graphics present some DTP problems. The Amiga at least has one advantage over most other computers – its hraphics all conform to the same IFF standard so that you can import almost any image into all DTP programs. The only limitation is that some software, such as Shakespeare, cannot handle HAM images and others, such as VizaWrite Desktop, cannot convert colour images to monochrome. Neither dot matrix nor laser printers are very good at reproducing complex images created with paint programs. It's easy to see how this is so – and why improvement is difficult.

Images, whether digitised photographs or illustrations created with paint programs, are reproduced on-screen in many colours or shades of grey. For most DTP publications, the colour pictures will be converted to grey tones.

These are printed either by creating the effect of halftones, in which the picture is composed of a series of dots, or by using dithering methods which substitute a variety of patterns for the various greys. In order to manage 16 shades of grey, the dots in digitised halftones are usually arranged in square blocks that measure four by four. As a result, on a laser printer with a resolution of 300 dots per inch, you can produce a halftone image with a top resolution of around 74 dots per inch. The quality, at the best, will be that of a picture in a newspaper.

On a dot-matrix, with a resolution of around 72 dpi, the result will be much poorer. It's more like looking at a newspaper picture in a thick fog.

It's best not to include digitised photographs in desktop publishing unless you have access to a laser printer. You should leave a space and add a photograph after you have created your document.

As an experiment I use Perfect Vision linked to a video camera to grab a picture in real-time of a cat and then tried to print the result using various DTP and graphic-orientated word processors. Some could not handle it at all. Both City Desk and Shakespeare turned the original into a negative of itself, with the whites shown as black. Vizawrite failed to produce anything other than a few blurred dots.

Pagesetter, ProWrite and Publisher 1000 all created recognisable images. But they lost most of the clarity of the original. Only Professional Page produced a result, using a halftone technique, that would enhance, rather than detract from, a document.

If you are using a dot-matrix printer then stick to simple images. Line drawings reproduce much better than fancy graphics. They look more pleasing on the page because there is plenty of white space in a line drawing. It gives readers somewhere to rest their eyes.

A complex image in fuzzy shades of grey makes a page look muddy and messy. And you don't need large pictures to create an interesting-looking publication. Cartoon images or small simple graphics can break up solid blocks of text effectively.

When you are producing a serious report, then simple graphs and charts can add interest. Bar charts are easier to understand than line graphs and their rectangular shape lends itself to dot matrix reproduction.

If you plan to print your document by conventional methods, then it is best to leave gaps for illustrations and add them when delivering your publication to the printer.

If you have access to a laser printer, digitised photographs are worthwhile. The Amiga is blessed with several low-cost digitisers which work well when linked to monochrome video cameras – those used in closed–circuit systems in shops.

The Panasonic 1410/B CCTV camera, which costs around £260, seems to be the favourite among the Amiga community and is recommended by both the makers of Perfect Vision and Digi-View. But there are other alternatives, such as the Baxall camera which Precision sells at £228.85 for use with Digipic. The one disadvantage of these systems is that they take many seconds to produce colour results by using red, blue and green filters – this does not matter when the result is likely to be printed in black and white.

Although no current Amiga DTP program will allow you to manipulate the image from within the program – other than by re-sizing it – there is some excellent image processing software available.

Programs such as Deluxe PhotoLab, PIXmate and Butcher use a variety of approaches to sharpen or soften images, to add colour to monochrome images and to turn colours into shades of grey or black and white. With such tools, which not so long ago were only available to the likes of NASA on equipment costing many thousands of dollars, a digitised picture can be worth a thousand desktop published words.

J.W.

Note: For examples of the type of graphics you can create using the techniques illustrated in this article, see this month's review of Professional Draw.

THE AMIGA — AN INTRODUCTION

Part IV

Many people want to use their Amiga for more than just playing games. This month Susan Maxwell considers some problems that affect the potential 'serious user'

The Amiga was designed to be a games machine and there's little doubt that it is the best games machine that the home computer market has seen. It is not however 'just' a games machine - the Amiga can be, and nowadays is, used for many serious applications. Despite its potential power the Amiga got off to rather a slow start in this latter area and many enthusiasts and potential business users were disappointed. Put simply.... too many programs tended to crash too frequently. The bulk of these early difficulties stemmed from the fact that the machine was new and complex, in-depth information was in short supply, and programmers who understood the Amiga were a rare species. The Amiga has however captured the imagination of both software houses and programmers and slowly but surely the lessons have been learnt. The result is that the software situation has improved beyond all recognition and we're now seeing the release of more and more software which is robust enough for daily business use.

The Amiga is making inroads into the video, graphics and MIDI music markets. Desktop publishing is a major growth area and there are some excellent data-base and spreadsheet packages now available. I use several Amiga based products on a daily basis and have had few problems although I must admit to adopting a slightly more pessimistic attitude towards my Amiga packages than with my PC, MS-DOS or CP/M based software - I suppose it is a case of old habits die hard !

Some Amiga programs still do crash from time to time and when they do several things can happen. Sometimes the machine just freezes, i.e. it stops responding to keyboard or mouse commands, very occasionally you will see some weird and wonderful screen displays but more often or not you will just be given a 'Guru message'. These messages can't be missed - a big red alert box tells you that something is seriously wrong. Usually you get a preliminary message first saying.....

SOFTWARE ERROR - task held
Cancel ALL disk activity
Select CANCEL to reset/debug

and following this comes the Guru message itself.....

Software Failure - Press left mouse button to continue
Guru Meditation (here you will see some number)

When you see one of these messages it means that one of the programs which was in use at the time either developed, or caused, a fault and as a safety precaution the operating system responded by stopping that program from running. There are a million reasons why such an event could occur.... the program itself may have got into an endless loop, it may have overwritten memory locations used by the system or another program, or it may have asked the operating system to do something which cannot be done. Providing the damage is limited to the program in question any other programs will still be able to function and by clicking on the appropriate windows you will be able to continue with the other tasks long enough to save any data etc. Unfortunately AmigDOS cannot stop a program from writing to memory locations outside of its allotted space and it is when this type of problem occurs that the situation is more serious. This means of course that no matter how robust a given individual piece of software is.... it can always be brought down by another rogue task running at the same time.

If you are a programmer the meditation number can help identify the type of error, show where it occured and indicate which task was involved. When you are reporting a problem with a piece of commercial software the meditation number could help identify potential causes. The number you'll see displayed will be in hexadecimal (base 16) form, so it will include the digits 0-9 and letters A-F and will look a bit like this.....

Guru Meditation #02010009.0000 A210

The numbers to the right of the decimal point specify the address of the task that caused the alert..... advanced programmers can use debugging tools to investigate the task but this type of fault finding is a specialised area - definitely not recommended for the faint hearted. The numbers on the left of the decimal point provide some details about the error which has occured. The first two characters for instance identify both the area where the problem occured and indicate whether the alert is recoverable or not. It is not really the place to go into detail but the 02 in the above example tells us that the problem concerned the graphics library. The next two characters are a general code which indicates the type of problem, e.g. the 01 in the example means 'insufficient memory'. The interpretation of the last four digits give extra help although the exact meaning is dependent on the other code values.

For those who do want the full 'messy details' the place to look is in the exec/alerts Amiga header file. Programmers get this file (and many other standard header files) with software development packages and it's also listed in the Amiga ROM Kernel Reference manual - Libraries and Devices (published by Addison Wesley). Be warned, the code descriptions given in the header file are of no use unless you have an in-depth understanding of the Amiga and its operating system.

If you use an Amiga the chances are odds on that sooner or later you will see a dreaded Guru message but, in case you are worried by what I have said so far, put the above comments into perspective: Three or four years ago I considered myself fortunate if my Amiga only crashed

once during any given day. Nowadays it is a different story..... my last Guru message occured just before Christmas, nearly three months ago - admittedly I choose my software carefully but that is quite an improvement - it is almost respectable!

It is still worth being just that bit more careful - especially if you are contemplating using your Amiga for any form of business or professional use. This primarily means that you should adopt some properly organised back-up procedures. The approach I use is based on total pessimism - assume that the worst will happen and then plan for it!

Program back-up is the first thing that's important - I prefer to work with unprotected programs or programs where you can obtain at least two additional back-up copies. If you are dependent on just a single disk you are taking an unnecessary risk - disks do occasionally get damaged and if you ever do find you need a replacement you can bet your life that you will need it urgently. Data disks are likely to be even more important than the program disks.... keep multiple copies and rotate the disks to even out any physical wear and tear. If a program or your associated data is especially important then keep additional copies at a different location as an insurance policy (hopefully you will never need them). Don't forget that if all your back-up copies are kept in the same place then fire, water damage, theft etc., could very easily result in you losing every bit of data you have accumulated !

At *AUI* we get to see a vast amount of Amiga software. Some of it is superb but, because there are some less satisfactory programs (i.e. rubbish) being churned out as well, it pays to be rather cautious when you are chosing software. Look at your requirements and make a list of the packages which might be suitable, read the reviews, and go and look at those packages which seem most suitable. Take all positive comments about a package's reliability with a large pinch of salt - I am sorry to say this but the majority of shop assistants I have come across (especially those from the larger department stores) just do not know what the term 'software reliability' means. Their priority is getting your money - not looking after your long term interests.

It pays to spend some time trying to find people who use the packages which you are interested in. User groups are usually very helpful in this respect and because they can invariably offer discounts on the more expensive packages you will probably find this the cheapest way of getting some reliable, and more often than not unbiased, expert advice.

Computer viruses are another danger to the serious user. The Amiga, like almost every other computer, has seen the spread of several virus programs. To-date they appear to have been relatively harmless but the underlying potential for these types of programs to cause real damage is indisputable. Most users can reduce the dangers by adopting three simple rules: Firstly DON'T use pirated software.... almost all of the Amiga viruses seen to date have been spread via pirate copies - many introduced by the hacker groups themselves! Secondly keep all of your program disks 'write protected' and thirdly don't try any public domain (or disks received from dubious sources!) without having one of the commercial virus check programs installed.

Users who download from bulletin boards should incidentally class themselves as 'high risk' and take special care. The virus problem is here to stay but a few commonsense preventative measures will reduce any risks to low and perfectly acceptable level. If incidentally you want a good general (and non-technical) account of viruses have a look at 'The Computer Virus Crisis' (written by Fites, Johnston and Kratz and has just been published by Van Nostrand Reinhold ISBN 0-442-28532-9).

Conclusion

Do not forget that relative to other computers of similar power the Amiga is a cheap machine. Despite its price the computer is worthy of serious use and it has become a valid option for professional people in a wide variety of fields. In many cases an Amiga will be chosen not only because it is going to do the job but because it beat the competition by providing the most cost effective solution to a particular problem !

S.M.

continued from page 50

INTERFONT

The normal text attributes are available: plain, bold or italic. In addition, you can assign an attribute to the text's texture. The ranges are dull, shiny, mirror, luminous, glass and wireframe. Height is freely definable; because you are working with shape definitions you can make them any reasonable size without being constrained to the normal idea of bitmap font sizes.

Text can be extruded for a real impression of depth, or left flat. The smoothness of curves can also be altered, from a value of 1 to 10, keep in mind that the smoother the curve, the greater the number of polygons – and memory – which will be eaten up by the 3D program you will use. As curves are composed of straight lines, you must strive to achieve a happy medium; a smoothness of around 4 (i.e. 4 lines per curve) is advisable.

Converters

Specialist modules accompanying the program will convert text objects into data compatible with Sculpt 3D, VideoScape 3D and Aegis Draw Plus. The latter facility perhaps needs more explanation as its true power lies in the ability to import new styles of text into Professional Page as well as Aegis Draw, Aegis Modeller 3D and other CAD utilities.

The conversion module is started after InterChange is running, and by editing the requestor parameters the text can be converted, and then imported into the DTP program. Objects other than text can also be translated, though here perspective is important as there is no hidden line removal.

Conclusion

There is no faulting the thoroughness of the manual, which comes in a small sturdy ring-bound folder. The illustrations and explanations are precise and helpful. I must however question the way that the heart of the program – the InterFont editor, is left until the last chapter after all the conversion/interChange information.

It may seem impossible to design text for 3D modelling programs. To help, a number of 3D design disks are available, featuring objects such as human forms, robots and architectural designs. But with InterFont you have a degree of satisfaction in creating your own objects which is lacking in off-the-shelf pre-defined shapes. Creating fonts will take time, but will pay dividends in the long run as you build up a store of characters. The program is a collection of utilities with which you must take some time to become familiar – no one said this would be easy. InterFont is a highly specialised utility whose comprehensive attitude has created its own niche; it fills a need, and can only improve the Amiga's 3D repertoire.

P.L.

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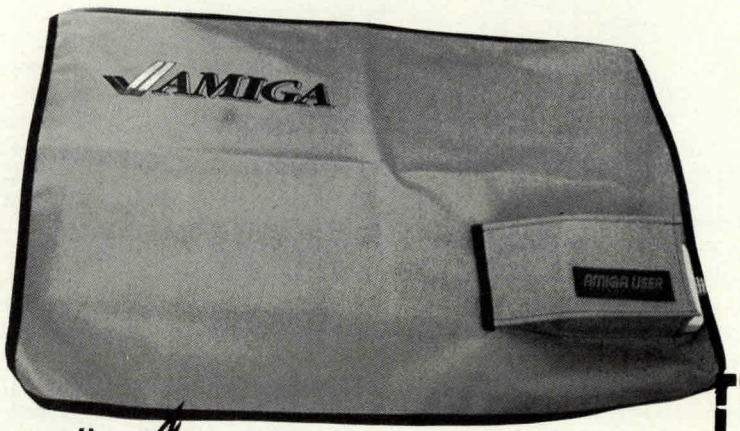

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Have you ever wanted to be high on Mount Olympus, staring down through wafting clouds at the poor mortals below? Electronic Arts is giving you the chance and more with its latest chess/graphic/strategy game, Populous. From the opening screen perspective, immediately you are in the (sometimes hot – if you are playing the evil force) seat of the Gods, with volcanoes, floods, and various other natural disasters at your command.

The object of the game is as old the universe itself: good vs evil, with you deciding which force you want to be. As a divine being, you must populate your lands, deriving your power from the more followers you acquire and the greater achievements you accomplish.

You begin each game in a particular world as a Good Supreme Being (though you may change to evil, if you like), and you must defeat the other deity and its population. You begin on the Genesis world, and each time you conquer a world, you are given the name of another, depending on your final score. The greater the score, the more advanced you become.

Play options include one player, two player, or computer vs. computer. You can even play by modem.

'Whilst I found the early worlds to be somewhat easy (as you are given all the options for power, while the computer is fairly muzzled), watching the computer play itself is worthwhile to pick up hints and tips of world creation/destruction.'

The screen is divided into five parts, some of which you can control, and some of which are

different indicators (location, strength , etc.) In the top left part of the screen, you can watch the entire world. By clicking on diffent sections, the close up view of the area appears in the middle of the screen. A cross remains on the map to indicate your location. Red blinking dots on this map indicate evil settlements and blue ones indicate good settlements.

Different icons line the bottom, lower right and top right of the screen. At the lower right the icons control the games parameters, whilst those at the bottom are your controls for actual game play. The icons at the top serve only to signify your divine power. An arrow rides along the Manna bar, in front of the icons, indicating your strength and therefore which commands you have at your disposal. Each command, which ranges from lowering and raising land to creating floods and mountain ranges, affects your strength differently. During game play, you must keep a watchful eye on your Manna bar.

Each deity needs a leader, the first one to touch the deity's Papal Magnet carries the Ankh around. He is the only subject, or Walker, you can directly control. By using the Query icon, you can attach a shield to your leader, or any other person, to check the individual level of good and evil. The information

'The playability can be as quick as you like, which is one of the many nice features of the game.'

Popu

appears in a shield at the top right of the screen, and will remain attached to the last individual you have 'queried'.

The graphics in the game are very 3D, and as you raise and lower the land, creating mountain ranges and swamps virtually at will, there is a strange sense of power (no kidding) that overtakes you. It is very easy to get carried away with generating landmass, especially when trying to mess the enemy about; so, it is important to keep in mind the strategy behind all of your actions.

'Whilst I found the early worlds to be somewhat easy (as you are given all the options for power, while the computer is fairly muzzled), watching the computer play itself is worthwhile to pick up hints and tips of world creation/destruction.'

The sprites are very small and somewhat stick-like, serving to represent greater numbers of people. You realize how well your people are populating by watching the big map. The people will follow the Papal Magnet, which you must take care to place in the proper place, and you can instruct them to populate around people or around buildings. In any case, they prefer flat ground, with houses needing less ground and castles needing larger areas. The longer you allow them to settle, the greater the developments.

You control those developments by strategy, using the behaviour commands. For example, you can move your Papal Magnet to an enemy area and then use the battle mode to tell your walkers to look for the enemy and attack them. Another option is to create a Knight, who will fight the enemy and burn their lands. Each option, depending on its outcome, takes different levels of strength.

'The playability can be as quick as you like, which is one of the many nice features of the game.'

You can alter the speed and aggression of the game, and thus your odds as well. Clever sampled sound effects accompany the volcanoes, floods, and other catastrophes you invoke, whilst a heartbeat indicates your strength.

I have explained only a few of the options that Populous provides the games player because to do more might take up thirty pages (or more!). You win by defeating every last subject of the other deity — which can take up quite a bit of time. No matter -- the game saves to the disk. Or, if you are especially feeling god-like, you can invoke Armageddon, during which both Papal Magnets are moved to the center of the world and both populations will uproot their homes and head to the magenets. Once there, they fight until only the winner remains.

Populous is a very challenging 'game' to play, with over 500 worlds to test your ever growing god-like power. With the inclusion of so many parameters, and such a variety of landscapes, you will find many, many hours of enjoyment as you shape and create your world in this fascinating and highly stimulating program.

Populous puts a new twist on the compliment, 'Dahling...you are absolutely divine,' and makes you think twice about the word icon. It may not appeal to the fans of the simple shoot 'em up but for anyone who wants a game that is exciting and out of the ordinary, it is highly recommended.

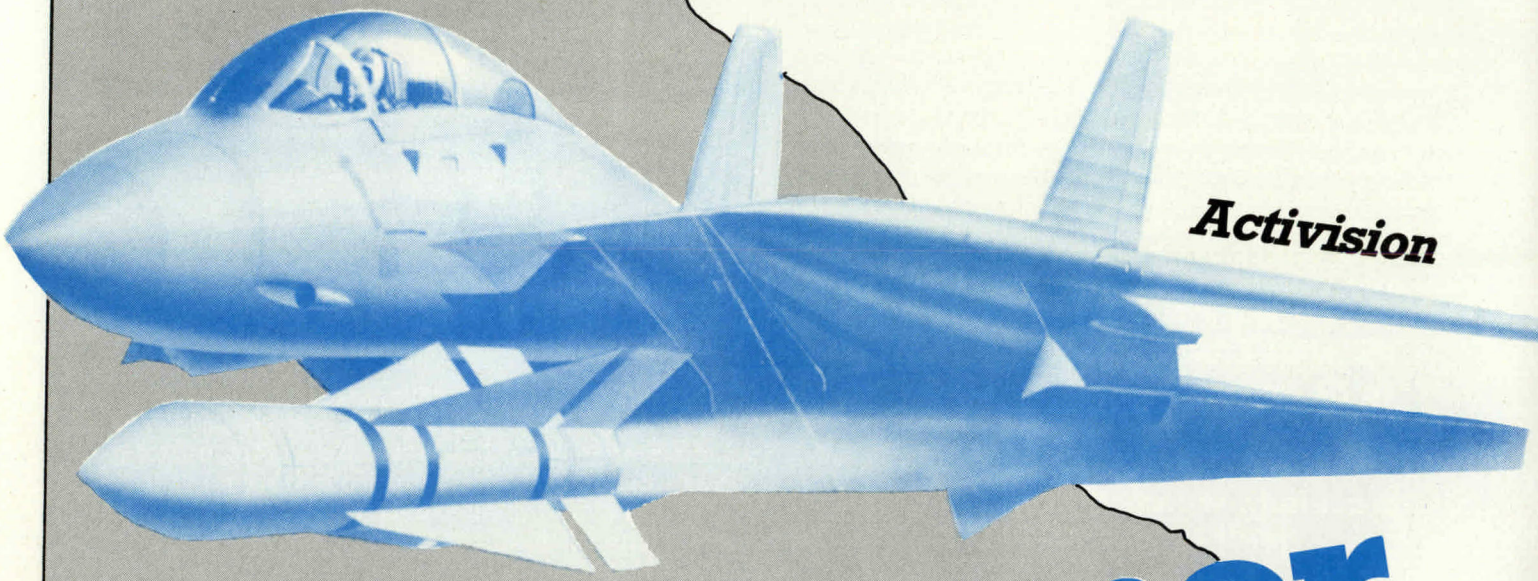
N.P.

lous

Electronic Arts

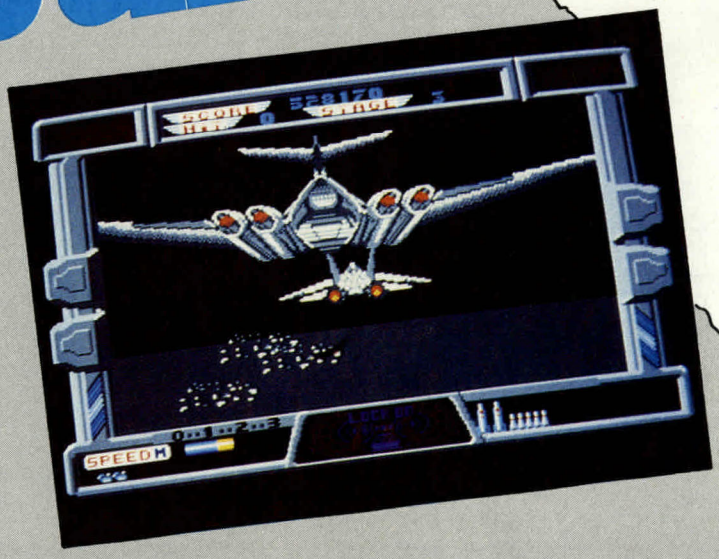
Graphics: 9
Sound: 8
Playability: 9
Value: 9

Price: £24.99



Activision

Afterburner

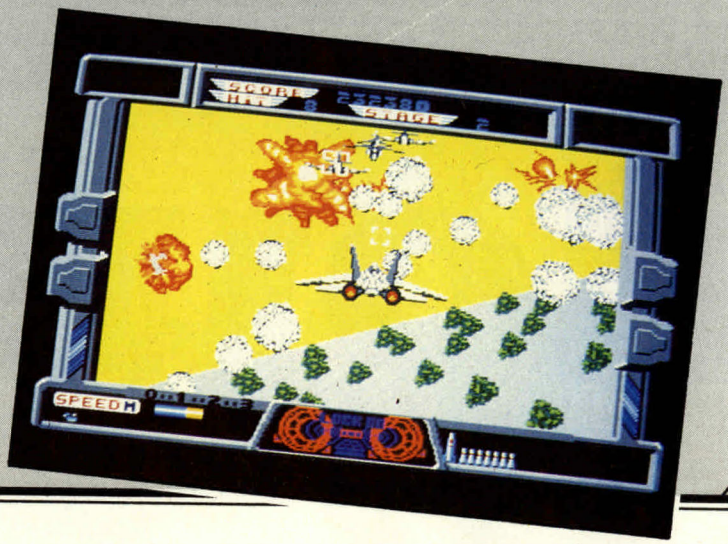


Once Activision had secured the rights for the Afterburner conversions, they could hardly have made a better choice as to who would program the 16-bit versions. They bagged Argonaut Software, who as you may know were responsible for the amazing Starglider II, in my book the best game ever written for the Amiga. However, while they had put some of the world's best game programmers on the job, there was still the question of the original coin-op's gameplay, or rather the lack of it. Nevertheless, Activision knew that if it said Afterburner on the box it would sell, so that's OK isn't it?

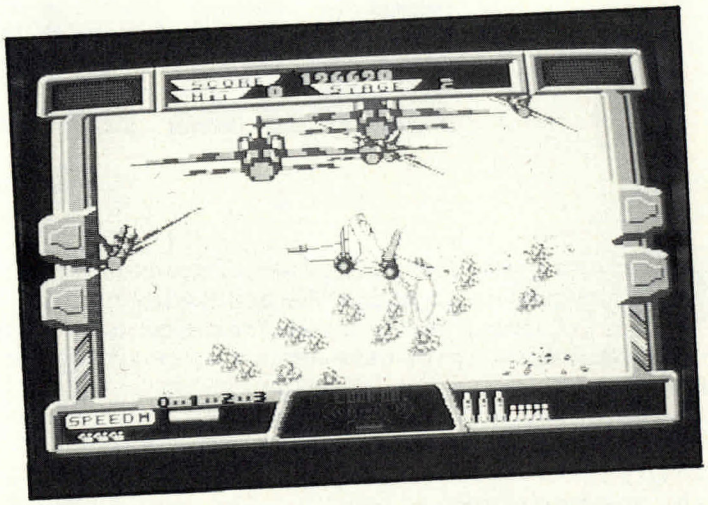
"From the moment you take off from the carrier, your cannons are locked into action, leaving the fire button free to activate the missiles."

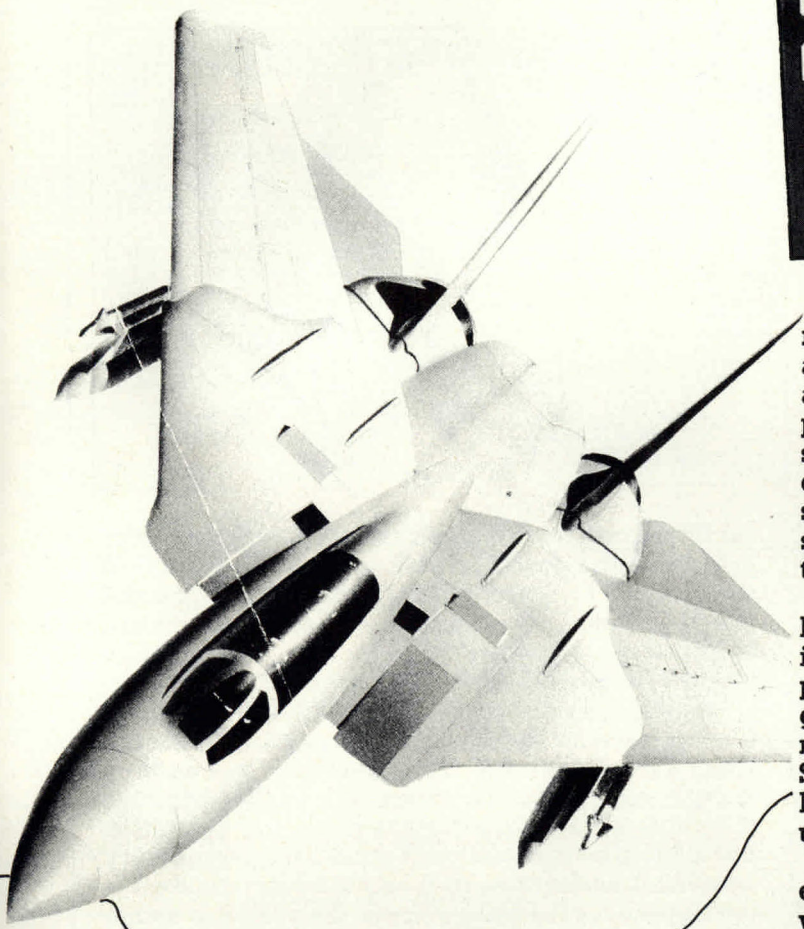
In the arcades the enormous animated cockpit of the deluxe version and its incredibly fast graphics made it a real stunner. You would have to be completely broke or else deaf and blind to walk past it without feeding it a pound, but then once you have had a couple of goes it's unlikely you would bother to play it again. That's fine for a coin-op, but it's a different matter when you are asked to fork out the whole twenty five pounds in advance for an unavoidably inferior home computer version.

To call Afterburner a simulation of an F-14 would be misleading as it could hardly be further removed from the depth and realism of most flight simulations. From the moment you take off from the carrier, your cannons are locked into action, leaving the fire button free to activate the missiles. Most



enemies approach from the horizon, flitting around as mere specs before suddenly appearing in the foreground. Gunning down the aircraft with the cannons is near impossible, so you find your limited supply of missiles in frequent use. You can lock onto more than one enemy at a time, so a few quick stabs at the fire button can often completely clear the skies for a few seconds.





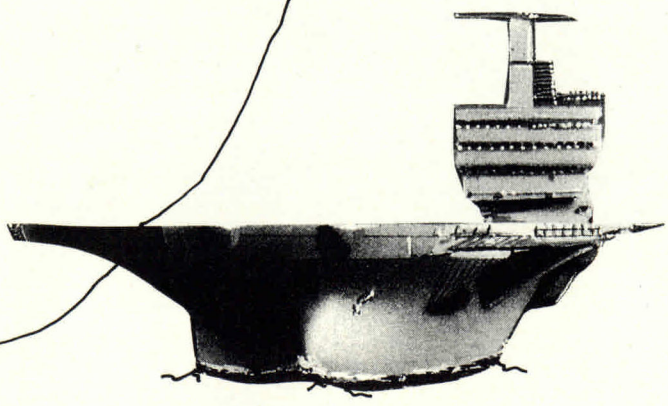
The enemy are also equipped with homing missiles, though unlike your opponents you do have a fair chance of evading them. Simply dodging around the screen is usually enough, but the more persistent missiles have to be shaken off with a snappy barrel roll. Linking up with the winged fuel depot and landing at friendly airbases gives you a short break from the battle and restocks your supplies, but the plane switches into autopilot, throwing to the wind a promising bonus stage.

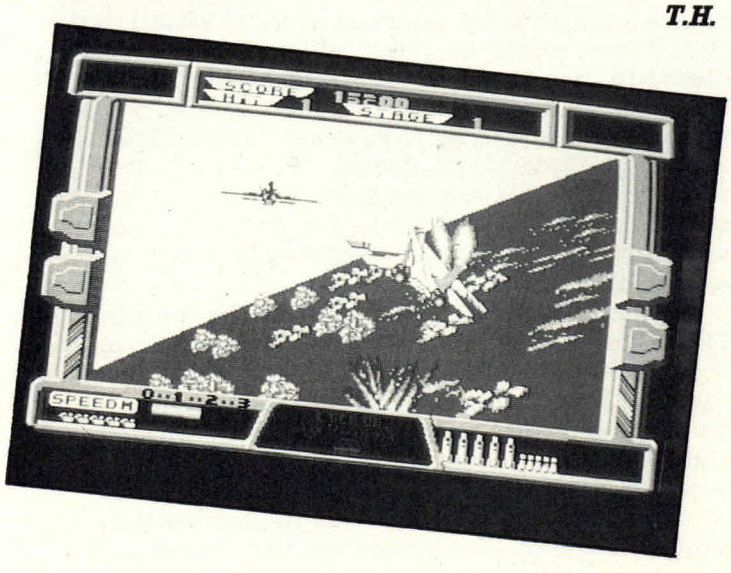
Argonaut have completed their side of the bargain as well as could be expected. The main thing is that it plays at a decent speed, though for this you pay the price of a more shallow 3D perspective and generally smaller graphics, all of which have been neatly redrawn by Focus, the graphic talents behind Super Hang On. The music and sound effects are half-baked, though the clear speech adds an urgency to the action.

It's all very nicely presented but there just isn't enough to do. All you have to do is dodge missiles whilst trying to get a lock on the enemy. The difference between a good coin-op and a good computer game is that staying power is only an optional extra with a coin-op, but an essential ingredient in a computer game, especially when it costs this much.

T.H.

Graphics: 8
Sound: 6
Playability: 6
Value: 5
Price: £24.99





BATMAN

Ocean

Over the past few years, Batman's popularity has grown a great deal. No doubt with this in mind, Ocean have released their second Bat-game, and once again have gone for an arcade adventure.

You get the choice of two independent adventures. In the first, the Penguin has set up an umbrella factory as a cover up for a plan to take over the world with an army of robotic penguins. The second has you searching for Robin, who has been kidnapped by The Joker.

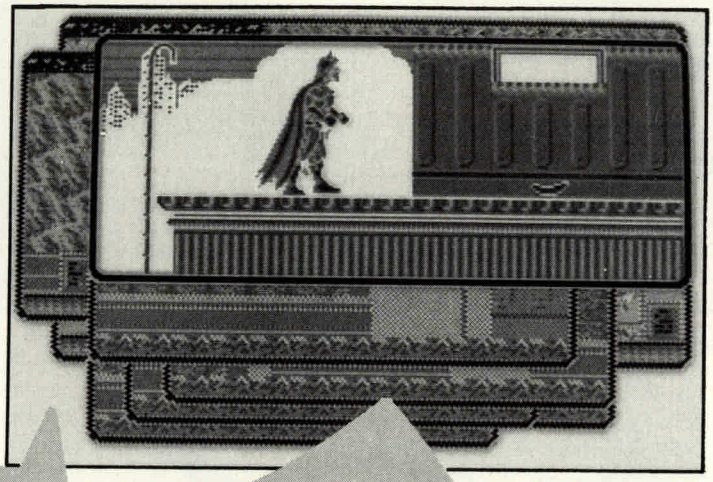
Both are played in the same way but the locations and puzzles are different in each. It begins, as most of Batman's adventures do, in the Batcave. Despite the rows of computer terminals you see before you, there is very little you can make any use of. What you need to look out for are the yellow boxes that symbolise useful objects. Pick up one of these and you can slip it into your utility belt for later. All the locations are displayed in windows that vary in size from almost a full screen to mere portholes. When you leave a screen, the next is overlaid while the ghost of the old one is still partially visible around the edges. This makes an interesting change from the usual flip-screen or scrolling backgrounds and adds a comic book look to the game.

"Once outside the security of the Batcave, the Joker and the Penguin's henchmen await you around every corner."

Once outside the security of the Batcave, the Joker and the Penguin's henchmen await you around every corner. Some of them are very well drawn and animated, sporting a pair of slacks that Nick Faldo would be proud of! Teaming up with these are the numerous mechanical killer toys, the bombing planes, the laser-firing locos and the flip-top penguins armed with concealed pistols. True to his image, Batman carries no fire arms. Instead, your initial defences come in the form of a punch, a sweep kick and powerful high kick. Soon enough you find the Batarang that helps stun the baddies for a little longer.

Object manipulation plays a big part in the game. There are a lot of handy gadgets and everyday objects to be found, some of which just make things easier; others are essential to the completion of the game. I am unsure whether the mix of beat 'em up and adventure works as well as it could, partly because of the high demands made in both areas.

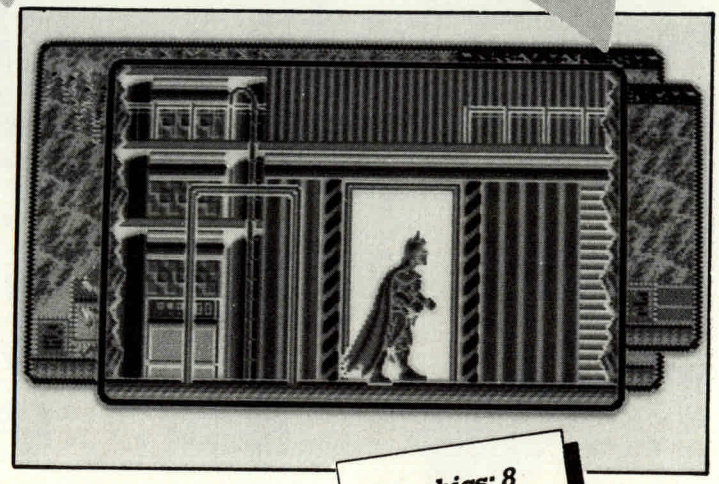
Unfortunately there is one oversight that puts a damper on things. That is the absence of a save game facility. It can be very frustrating to have made your way through a good deal of the game, only to have to go through the whole thing again once you get killed. It would not have taken much effort to have included such a feature in the game, and would have made it far more playable.



Special FX programmed the game and have done a great job with the graphics, especially inside the Joker's fun house. All the sprites look just as they should, recreating the character of the originals with hint of humour, though some of the animation could have been smoother. Sound only plays a very small part, as the music is likely to be switched off in preference for the tranquility of the very few sound effects.

All in all, Batman will please arcade adventurers and is only let down by its lack of a save option, though I still think there is more potential for a more arcade orientated Bat-game.

T.H.



Graphics: 8
Sound: 5
Playability: 6
Value: 6
Price: £24.95

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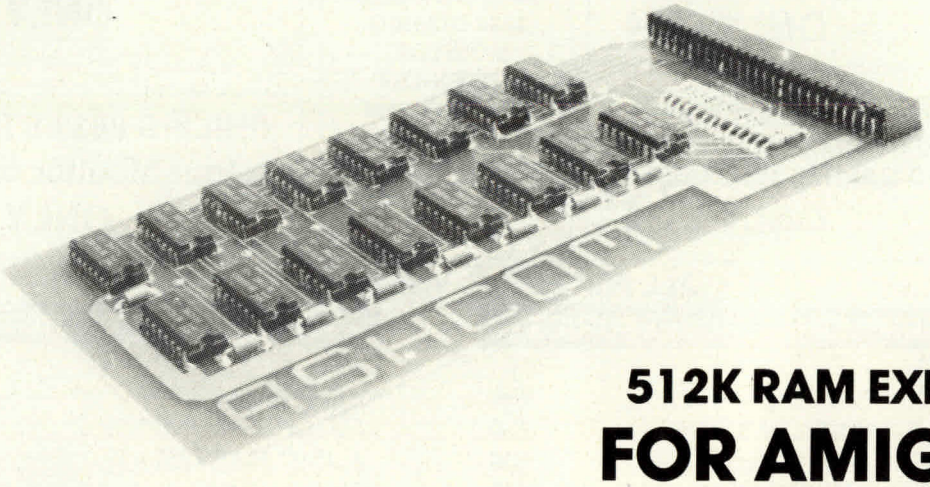

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At Last the Kristal Shines...

In the months since *AUI* first gave readers news of a mysterious game called 'The Kristal' being created in a mysterious computer-strewn apartment above a dry cleaners in the depths of London's Muswell Hill, other less-informed publications have contained shreds of gossip and garbled facts, following *AUI's* world exclusive. Advertising for the game has appeared, but no Kristal.

Now, after another visit to the door beside the dry cleaners that creaks open when you touch the bell, and mounting the dusty, empty, chip-packeted stairs, *AUI* has again made a quest in search of the Kristal and been rewarded, this time not only with more secrets of the travails of the creation by Fissionchip (for that, I kid you not, is the name on the visiting cards of creators of the game), but with four disks and some printed instructions – not complete, as you will hear later – of the Kristal itself.

As you may remember, The Kristal started out as an idea for a theatrical musical show in the mid seventies. Its initiators did not succeed in the difficult task of persuading a million or two out of 'angels' (as backers of the theatre are called). Although they did get the then up-and-coming Elaine Page, later to star in Evita and the 'famous for his sartorial elegance' TV astronomer Patrick Moore to lend their services to a demo cassette of the music and sound.

Patrick Moore's voice digitised with uncanny reality introduces the computer game of The Kristal which Fissionchip ended up producing for Prism's Addictive Games label as a slightly less ambitious project than their original aim of causing the Palladium to post "Sold Right Out" notices for a year or two.

As a project, it was only slightly less ambitious though. Mike Soutin admits that the nearly two years spent in creating the game has turned his hair grey – and he means that *literally*. One of the programmers who worked on the initial ST stages had a nervous breakdown and retired from the fray. *AUI's* own Guilio Zicchi, popularly known as the Quick and Dirty Man, had to be called in to trouble-shoot the Amiga version, which will be the first to hit the streets. Even on the day we were being shown the final version, constrenation reigned as it was discovered that confidential information intended for the U.S. distributors on how to solve some of the problems in the game had been erroneously sent to a magazine which had published it after swearing not to.

Mike Soutin turned despairingly to *AUI*. We wouldn't do anything like that would we? No, of course not. There are some ethics in journalism whatever you hear to the contrary.

Would we, however, print something that Fissionchip and Prism wanted published? That depended on what it was, we cautiously replied.

It was another minor disaster that we could help retrieve. In the printed instructions a simple but vital point had been omitted: that instruction to save and replay the game. With as complex a production as The Kristal, nine or ten worlds, myriad scenes and conversations, the need to be able to save and play the game from the point you stop can be absolutely vital and this had been inadvertently left out of the boxes which were already speeding their way to the computer stores of Europe.

Never fear, we cried, falling into the idiom of the game still flickering on the monitor, *AUI* will save your rear.

So here for the aid and comfort of those who do not get one of the next twenty thousand boxes of The Kristal which will contain the correction sheets we heard being ordered as we left, is the vital missing instruction ..... *When you want to load a saved game, place the disk the game is saved on into drive 0/drive A and press 2 on the numeric keypad. After the data is loaded, insert the disk required to continue play.*

You owe us one, Fissionchip. We trust that we shall again get the world exclusive on your next game – already we believe being planned – and that it doesn't take two years nor that Mike Soutin's grey hair doesn't fall out in achieving it. You can go off quests, you know, even if they end successfully...

THE KRISTAL

Addictive

Thirteen years is a long time for an idea to keep kicking around your head, but when you are a veritable genius at anything to do with science and space, I suppose that compared to the meaning of life, your idea takes a low priority.

THE KRISTAL is an experience in exquisite art backdrops combined with a plot of sheer magnitude, which literally compells you to stay in front of your screen and explore some more of this universe that awaits you. Not only that, but the whole thing os loaded with the sort of subtle humour you get in those "send up" movies. For instance the hero (who, by the way is named Dancis Frake, no prizes for guessing where that name comes from) flies around in a space ship that resembles a 17th century man'o'war galleon complete with cannon and pointed steering wheel. He looks the image of Errol Flynn with long wavy hair, moustache and boots, and always turns around to face you with a wink and a thumbs up when you kill off any enemy hostiles. It is a send up alright, but there is also a cracking good plot, with plenty of puzzles, but not the kind to send you off screaming to the funny farm, just enough to keep you on your toes.

The story concerns the Kristal of Konos, which has been keeping things hunky dory in the Universe for centuries looked after by the royal family on the planet Meltoca. Well all is not well down there now, as the Kristal was stolen by an evil tyrant Malagar, who perished while spiriting it away. Malvalla, Gru of Grus, found the Kristal on the edge of time and hid it in a secret chamber. Now it is written that one day, a man who is worthy enough shall come and find the gem and restore it to its rightful place. He will be courageous and bold and possess a good heart and a noble spirit. That is where *you* come in of course, as

Dancis Frake space pirate and town drunkard. Last night after a serious bout of knocking back the amber nectar, you got rather smashed, and after heading back to your home planet completely went off course, not surprisingly, and ended up crash landing on Meltoca. Just in time it would seem, as they are just looking for a hero like you.

Using a mixture of joystick and keyboard you manouvre Dancis around the screens exploring as you go. Most of the movement is horizontal although in certain areas you can move back and forth, and this is to be recommended as there are a few objects hidden away in some remote areas of the screen. Full text input is allowed when engaging conversation with other characters, and I found the parser to be quite extensive. Most of the sentences I typed in were understood which is more than I can say for some traditional text only adventures I have played.

There is something in this game for everyone. Shoot 'em up fans get theirs in the journey between planets where you get attacked by strange winged type aliens who prove no match for your cannon, and again on landing, where your swashbuckling sword arm is put to good use. Strategy fans will love the complexity of the Kristal, its sheer size alone will be daunting enough, and adventure fans will really get to grips with the puzzles, clues and objects that abound in the game. Its perfect isn't it? A visually stunning game, with content to match its beauty. Any drawbacks? You could say that four disc changes spoil the fun, you could say that overall there is a little too much fighting to do. But you won't, because why get picky over a product that has been lovingly crafted by a genius artist, after all its only taken him 13 years to bring it to you.

A.M.

Graphics: 10
Sound: 7
Playability: 8
Value: 8
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PD

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Stuart Williams reviews some super starter packs from 17 Bit Software

There seems to be a fashion for 'starter packs' among PD Libraries today, and this month I'm taking a look at such a set of discs provided by 'Seventeen Bit Software', who seem to be gaining themselves a reputation as suppliers of 'fun' PD as well as useful utilities – graphics, music, games and demos of all kinds feature heavily in their catalogue, so if this is what you're looking for, you could be in for a treat! I'm also looking at the services provided by this group, and what their disc magazine contains.

Seventeen Bit Software appear to be an enthusiastic company made up of Amiga fans who promote themselves as a club providing PD compilations, software discounts and an excellent disc-based magazine. Unlike many PD disks, 17 Bit Disks are designed either to autoboot the main program, or to load Workbench from the disc itself. The majority of programs have associated icons or menus and the disks are prepared in a very user-friendly way. This means that you do not have to be a CLI wizard to get started.

The starter pack consists of five disks, one of which is the current copy of the Seventeen Bit disc magazine, the other four provide a varied selection from the Seventeen Bit Software PD library. These are not the usual Fish discs (which are available from many sources), and have been compiled by Seventeen Bit.

The disk magazine – **Issue 4** in the pack for review – autoboots into a jokey representation of an Atari ST desktop! Fortunately this is replaced with a nice animated Seventeen Bit logo done on Fantavision. The disc contains a number of folders, including a selection of lively articles and chat, information files on the club, a list of PD discs available, some tasty Fantavision and music demos (plus a software switch to turn off the A500 and A2000's music filter), a few graphics screens, and a miscellaneous collection of utilities, which on this issue included two new virus killers, namely VirusX1.5 (now able to take care of the Revenge virus and the Byte Warrior strain, as well as the usual SCA derivatives and Byte Bandit types), and System Z (which also includes a Revenge killer and boot-block written virus detector similar to Guardian).

Also supplied in the Starter Pack are the following four PD Discs.

Seventeen Bit Disc 146 - Super CLI Disc. This contains an excellent set of CLI utilities, too many to describe here, perhaps the most useful of which is CLI Wizard. This is an advanced disc manager with more facilities than you can shake a stick at. From CLI Wizard it is possible to view directories of all drives attached to the Amiga in addition to the RAM disc, and to delete, copy, move, and rename files without use of the CLI. The program also allows you to show IFF pictures, play music files, check free disc space, examine file sizes, and create directories. It is also possible to run a text editor, a virus killer, archive and unarchive utilities, a file cruncher, create new boot sectors, salvage discs, install discs, run preferences, and more!

Eighteen other utilities are also presented on this disk, including a file cruncher, boot sector writer and controller, virus killers, DOS help, file managers, disc editor, text editor, and many more. This disc is perhaps the most useful supplied in the starter pack, though the others are all great fun!

Seventeen Bit Disc 6. This is the famous 'Probe Sequence' demo, which graphically simulates a remote planetary exploration in the Alpha Centauri star system, and image data analysis of the remains of alien life. Some nice graphic sequences (but no sound) show off the Amiga's graphics and animation capabilities. Produced using 'The Director' animation package, this is definitely one for the demo collectors among you.

Seventeen Bit Disc 86. This contains a game, 'Gravattack', which autoboots. While nicely done and fun to play, this 'Thrust-alike' will not worry the commercial software houses! The idea is to float about above a colourful series of mountains in your tiny spacecraft, and collect spinning keys which fly about you, without bashing yourself to bits on the landscape. The game involves nice use of colour, but the sprites are small and lacking in detail or animation. Sound effects are dismal, in the swatted fly category except for a good explosion effect when you crash. A reasonable effort for a PD offering, then, but don't expect the quality of a £25 game!

Seventeen Bit Disc 14. This one is great for music demo fans – sixteen great stereo tunes, each with its own distinctive ghetto-blaster icon, which are run by double-clicking on the icon. Some of these are from popular demos, others are tunes I haven't come across before. All of them show why the Amiga makes other computers' sound seem pathetic! This is one in a series of such discs. A must for dropping the jaws of your ST owning friends!

So much for the software, which is excellent. How much does the starter pack cost? Remarkably, only £10, including first class postage and free membership to the Seventeen Bit Software club. If you want to join without buying the starter pack, it will cost you £5 which includes membership and your first disc magazine. Once you are a member, individual PD Discs are just £2.50 each, on Sony media.

What other facilities do Seventeen Bit provide? As a member, you will receive a minimum 20 per cent discount on commercial software that they sell, plus a free Public Domain disc with every commercial title. Members also receive special offers and discounts, including a free advice service and a digitising service.

S.W.

Starter pack supplied by: Seventeen Bit Software
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Professional DataRetrieve

Professional DataRetrieve is a 'high power' database product from Data Becker/Abacus. Paul Andreas Overaa checks it out to see just how well it performs

Professional DataRetrieve is the top of the range relational database product from Abacus/Data Becker. Designed for the Amiga, it is upwardly compatible with the original DataRetrieve program. The Professional DataRetrieve package is already popular in the United States and has a reputation for being a program that is easy to use by both novices and experts alike. From a 'business' viewpoint, people rarely dabble with these types of database programs - if they use them at all, it is for handling data which is important to them. Because robustness is so important for a database product, we have had quite a few people (eight actually) involved in this review so that we can give you a realistic account of how the package has performed during both the setting up of the applications and the routine use by data entry staff.

The package, as supplied to a new user, consists of two disks and a comprehensive manual. Professional DataRetrieve is neither copy nor dongle protected and, as might be expected, you are advised to copy the master disks and use only your back-up disks for daily operations. An installation procedure has to be performed the very first time you use the package but this is well documented and easy to carry out.

The early part of the manual provides an introduction to the package and this guides you through the basic facilities using a 'tutorial' approach. The examples are straightforward and include the use of example 'data-bases' which come with the package. Relational data-base programs are rarely easy for newcomers to master and the manual carefully avoids delving too deeply into the 'relational' ideas in the early stages. There are almost one hundred pages of tutorial material giving good coverage of the basic capabilities of the package. Following the tutorial introduction comes sections which deal with the menu options, the object orientated mask editors and the PROFIL programming language. Last of all comes a collection of appendices which deal with error messages and information of a more technical nature such as might be of use to an experienced programmer. The manual is well produced, and in general well written, although there are a couple of areas where it looks as though some translation or typesetting errors have crept in - these are primarily parts which are 'awkwardly worded' rather than being incorrect so it is not really any serious cause for concern.

Professional DataRetrieve regards a collection of records of a single type as a 'database' file. Any number of files can exist, each with their own individual record structures and up to eight of these can be open at the same time.

"No matter how robust a given individual piece of software is... it can always be brought down by another rogue task running at the same time."

The creation of a file definition is straightforward - you select a name, decide whether you want password facilities or not, and then enter the required field names and field type information. User and operator passwords provide protection at two levels enabling you to allow restricted use of any of the databases. Users can be prevented from changing records and prevented from using facilities such as the mask editors.

Six types of data fields are supported: text; date; number; time; IFF; and CHOICE, with the latter type allowing you to restrict the field value to a selected set of values. The maximum length of a text field is 32K and whilst this may seem unnecessarily large, it is actually very useful to have this size of field available. Data can be read into such fields from ASCII files and, since the Amiga's clipboard device is supported, it is even possible to create applications which rely on large sections of text material being pulled in from other concurrently running applications.

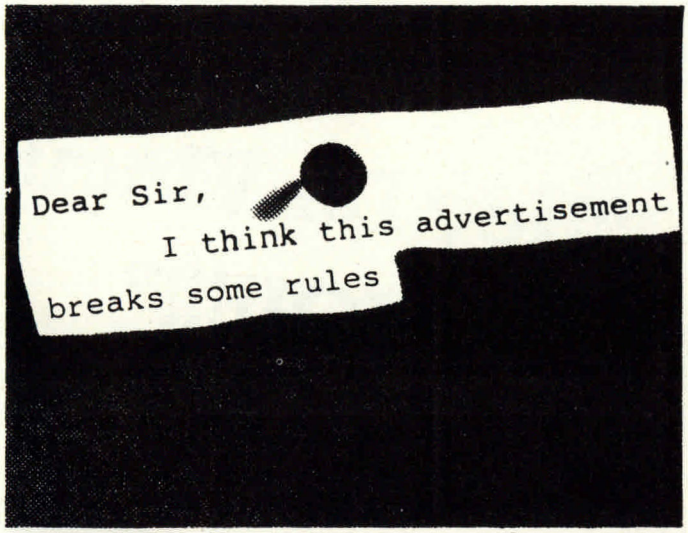
Date fields have all the usual formats and number fields accept both literal numbers or formula based expressions. Time fields can be made automatically to use the system clock and this is useful if you want your application to 'date-stamp' individual record changes for audit purposes. The IFF field is used for the display of pictures and allows you to display such data on a separate screen when the appropriate records are accessed.

The CHOICE field allows the person who designs the database application to restrict the type of entries which day to day users of the database can give. You could, for instance, restrict a person's title to Mr., Mrs., Miss., Ms., or 'Dr., thus avoiding the difficulties which arise when you are searching on keys which have been inconsistently entered (Mister, Mr, Mr., Mistor ? etc.).

Professional DataRetrieve is a relational database which allows you to view of your data in many ways. A particular 'view' is called a mask and there are three types available: screen masks; printer masks; and list masks. A newly created file has a set of 'default' masks which enable a user to enter data and use the database immediately if they so wish. The visual appearance of the default screen masks is quite good - for some of the applications we were working with we used them unchanged. This approach is ideal for the novice who wants to do something constructive as he or she learns about the package.

Screen masks are edited using an object orientated 'screen mask' editor; this is not just a 'screen display editor', it is the part of the package which lets you define a particular view of your data. You can move record fields, text and other objects to any required display positions by picking them up with the mouse. You can change the display length of data fields, add new fields, add graphics objects and bring in

continued on page 95



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"Hey Da Vinci! Yes, YOU!!!"

Who knows – if the Amiga had been around back then, Leo the Brush (as he was affectionately known by his close friends in high places) might not have had such bad back problems. As you know, ***AUI*** is very graphicissimo this month (um, perhaps we should rephrase that). After reading your favourite mag cover to cover, you may not be ready to paint the Mona Lisa... but you could be tempted to open up your own graphic arts company. Well – could you? You would need Photon Paint, Turbo Silver, Sculpt Animate 4D and Deluxe Paint III. And you have struck lucky! Those are the fantastic prizes for the lucky winner this month. Just imagine, what would you say if someone walked through the door of your company and asked?

1. *What is the difference between a structured and bitmapped graphic?*
2. *What does dpi mean?*
3. *What is a 'pencil test' in an animation program?*
4. *How many standard colours does the Amiga have?*
5. *Who wrote Deluxe Paint?*

We bet you would reach for your May issue of ***AUI***, where you will find all the answers (and more!). Put those answers on a postcard please and send by July 15 to:

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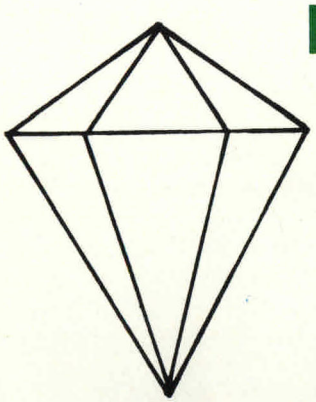

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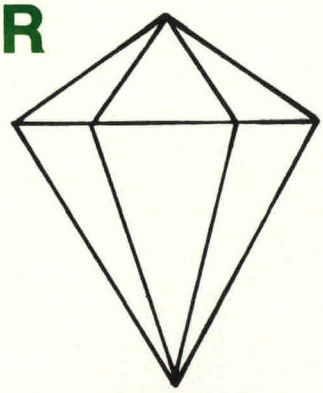

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FALCON

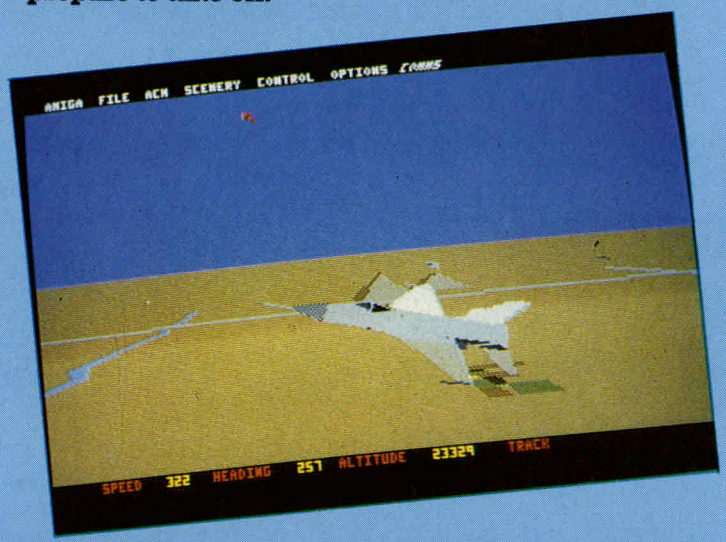
Mirrorsoft

Falcon has been with us for some weeks, but it is only now, after many hours of "flying", that I feel I have, at last, "got to grips" with it!

For those of you who have not seen, or heard of Falcon (there can't be many!), the program simulates the flight and functions of a General Dynamics F-16 "Fighting Falcon" aircraft, possibly the most versatile jet fighter in the air today.

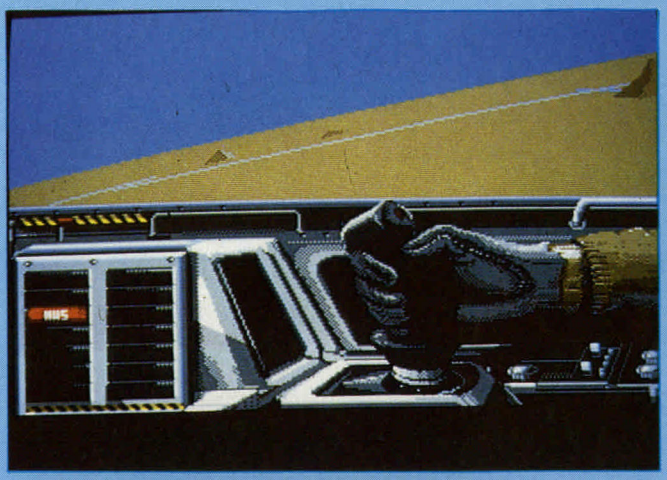
As the program starts, you are asked to select your pilot for the current mission from a Duty Roster, or rename one of those shown to create a new pilot. The next screen prompts you to select the Rank of your pilot, from 1st. Lieutenant (easiest) to Colonel (hardest), the mission you wish to undertake (a choice of twelve) and how many, if any, MiGs you want to appear during the mission.

The selections you make on the armament screen depend on the mission you have chosen to undertake. If you have selected to attack ground targets, it would be pretty pointless loading up with air-to-air missiles! When you (and the Sarge) are happy with the loading, you climb aboard and prepare to take off.



Up to now, things have been fairly straightforward but the F-16 is a very complex aircraft, with numerous systems and apparatus to deal with every function and role required of it. The program attempts to simulate as many of these as possible. As you "sit" in the cockpit, you are presented with an almost overwhelming array of dials and controls. There are twenty-two major dials and indicators on the control panel alone. Switching to the left side view shows another six, whilst the right side view contains a bank of fourteen warning lights which indicate any damage or problems with your craft. I would advise any new pilot to learn the layout, position and function of all of the dials, guages and indicators. When you have got a MiG on your tail, you will not have time to waste trying to figure out which gauge at which you need to look, or what it is telling you.

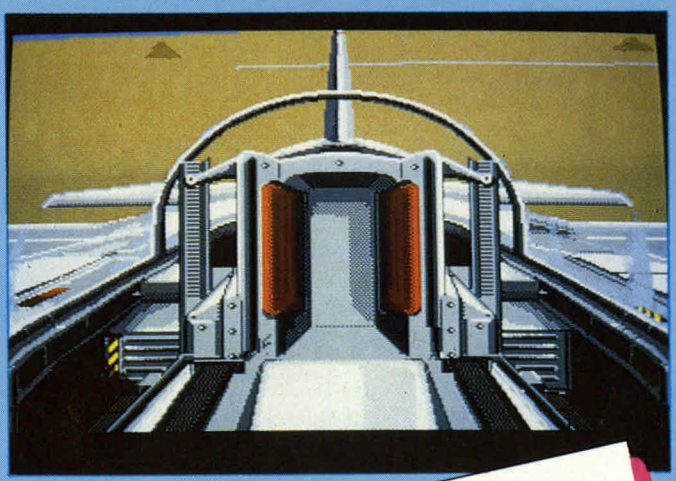
Having done all that, it's time to get on with your mission. The programmers of Falcon, Spectrum Holobyte, have made control of the aircraft as flexible as possible. You can use the joystick, mouse



or keyboard, and once you have mastered your chosen control, there really is no difference between the three methods.

All the relevant information you need is displayed on the "canopy" in front of you, in an Head Up Display (HUD), which includes speed, altitude, heading, target aquisition, range and armament. Beyond that, the outside world is depicted in solid 3-D, with rivers, roads, bridges, airfields and, of course, your opponent(s). The view can be switched to either side or rearwards, or to one of three types of "outside" view. These are from the Control Tower, a Satellite or from a "Tracking Point". The Tracking Point may be moved a full 360 degrees around the aircraft and zoomed in or out and is very useful if you know that there's a MiG out there somewhere, but can't see him from inside the aircraft.

Once in the air, the area you will fly in is divided into nine sectors, two of these are friendly territory, the rest contain the various targets you will attack, depending on your chosen mission. The missions vary from the (fairly) simple task of destroying SAM missile sites, to blowing up bridges, destroying HQ and Communications buildings, attacking enemy Airfields and, of course, downing enemy planes. The latter is the most difficult to master, the MiG pilots are very highly trained individuals and will not give up without one hell of a fight. The most difficult mission is to intercept and destroy FOUR MiGs, incoming to attack your Airbase!



When/if you manage to successfully complete your mission and return to land, without smashing your aircraft onto the runway, your CO will award you merit points on your performance. If it is warranted, you may also be decorated with one of five medals, from the Purple Heart, right up to the Congressional Medal of Honour. Your total merits will be calculated and if your final score is good enough, it will be recorded on a special screen called "Sierra Hotel", which lists only the all-time top ten pilots. I will leave you to figure out exactly what "Sierra Hotel" stands for!

Does it really compare to flying a REAL aircraft? To find out I asked the Squadron Commander of one of the RAF's Flying Training Schools to "test-fly" Falcon and let me know how it compared to the real thing. These are his comments:

Handling Sensitivity: Generally the handling characteristics of the simulation are very good but pitching sometimes over-reacts to the demand input. I have found that a sensitivity setting of "3" gives a reasonable "feel" to the simulation – any more and it over-controls too much.

Rolling performance: This is very unrepresentative in "Falcon". When an aircraft rolls rapidly it should, if flown within its manouvre envelope, roll around its longitudinal axis without diverging from its flightpath. In other words it will remain flying at the same plasce ahead of it. Modern aircraft like the F-16 also roll very rapidly. Unfortunately "Falcon" does not roll well and diverges horribly when rolling to level from inverted. This is very noticeable if you set up a head-on attack on a Mig's and fly through. Looping back over puts you right onto the Mig's tail inverted. If you now roll upright "Falcon" diverges to such an extent that the Mig mysteriously flips aroud onto YOUR tail!! Unreal!

Landing: It is said that any fool can get an aircraft airborne but it takes an expert to land it again. And boy do you have to be an expert to land "Falcon"!! Perhaps it is realistic in that very few people playing the game could ever hope to land a real F-16 successfully but the game should give non-experts a chance at the lower levels. 1st Lt Major gives a false sense of achievement and then the jump to Capt. and Major level is too difficult. The manual does not help here. Start an ILS from 37,000 feet??!! Most ILS glidepaths are set at 300 feet per mile. So start at 10 miles and 3000 feet, on the centreline heading 090 with gear down and speed back to 150 kts – now you have a fighting chance of getting it in!!

Stalling: Very interesting stall recovery technique in the manual – it suggests rolling over and pulling through. That will make your eyes water if it was for real!! The normal recovery technique is to unstall the wings by pitching forward and apply full reheated power at the same time, then ease back to level when normal flying speed is achieved. If you try to roll most real aircraft when they are stalled you will probably induce a spin.

The Manual: Pity the screen dumps of the instrument layout in the manual don't match what you see on the Amiga's screen!!

Overall: "Falcon" is a VERY good game and quite a reasonable flight simulator but some areas are a touch unrealistic and over-difficult. ***N.S.***

Graphics: 8
Sound: 8
Playability: 7
Value: 8
Price: £24.99

VMIDI Part VI

Reading MIDI clock data

One of the best ways of learning how to use the Amiga's serial device is to experiment with it. We will make a start this month by having a look at a typical MIDI collection loop which uses a DoIO() call previously set up to receive MIDI data one byte at a time.....

```
do
{
DoIO(); /* get MIDI byte */
/* Do something with current MIDI data-byte */
} while (end condition);
```

A specific example ? Well let's suppose you have got a MIDI drum machine connected up to your Amiga (via a MIDI interface) and you want to use received MIDI timing data in order to let your program recognize, and synchronize to, each crotchet beat that is produced by the drum machine.

All MIDI drum machines output timing data in a standard form - they send out timing clock bytes (decimal 248) at a frequency which is governed by the current tempo (speed) setting. You do incidentally have to be careful in this area - some units (such as the Yamaha RX21) actually emit timing data continuously even if a drum pattern is not playing. Other units (e.g. an RX11) will only emit timing information when a drum pattern has been started. In the case of the RX11 you could use the reception of first MIDI CLOCK as a possible start criteria but with the RX21 you could not - so in general the safest idea is to wait for a MIDI START byte before starting to look for any timing data.

As soon as the drum machine had started we could monitor the data stream for MIDI CLOCK bytes (i.e. decimal 248) and count them as they arrive. Since each bar of 4/4 music provides 96 clock bytes a modulus function could be used to divide the clocks into groups of 24 (1 crotchet beat = 24 MIDI clocks) in order to count 'crotchet beats'. Each time a beat was recognized the program could perform its chosen operations. If we put all these ideas together we end up with this month's offering (I have deliberately not included any DoIO() error checking because it makes the overall ideas more difficult to appreciate). The example code waits to see a MIDI START command before it begins to look for any timing data - and it terminates as soon as a MIDI STOP command is found.

Some definitions and variables that would be in existence.

cont. on next page **P.A.O.**

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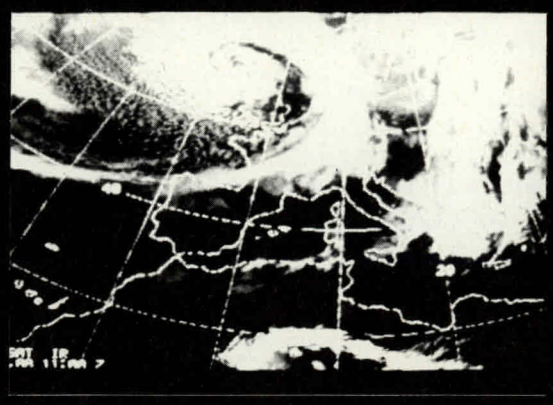

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Access VISA

MIDI Part VI

```
# Define CLOCK 248
# Define START 250
# Define STOP 252
# Char buffer[1024]; /* an arbitrary length } 1 */
ULONG crotchet-count = 0;
ULONG clock-count = 0;
    Wait for a start command before enter-
ing main loop
    do {
    DoIO(global-IO-req-p);
    } while (buffer[0]!=START);
    do-unspecified-operation(); START IS FIRST BEAT OF BAR
    Now we can start looking for MIDI
timing data
    do
    {
    DoIO(global-IO-req-p); /* read 1 byte */
    if(buffer[0]==CLOCK) /* is it a clock-byte ? */
    {
    clock-count++; /* number of MIDI CLOCK bytes */
    if(!(clock-count%24))
    {
    /* occurs once per crotchet beat */
    crotchet-count++; /* total number of beats */
    do-unspecified-operation();
    }
    }
    }while(buffer[0]!=STOP); /* quit as soon as we receive a
MIDI STOP message
```

P.A.O.

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'The Computer Virus Crisis'

by Philip Fites, Peter Johnston and Martin Kratz

This book is written primarily for the non-programmer and its aim is to provide an overall awareness of what computer viruses are, how they are created, and how they can be detected and dealt with.

The early chapters of the book provide a laymans account of the main issues and would make useful reading for business users and others who would like an appreciation of the dangers from a non-technical viewpoint. Some good practical advice is given cocerning day to day back-up procedures and the high risk areas, e.g. such as the dangers of using software which has been pirated or downloaded from bulletin boards etc., are also dealt with.

There are details of known viruses and anti-viral products but these are almost exclusively based on Mac, IBM, MSDOS and PC DOS material. The book contains very little Amiga specific material (just a couple of passing references), but this doesn't detract from the usefulness of the general information provided. There are some brief excursions into the areas of legal responsibility etc., into possible long term solutions, and a fairly good selection of further reading references.

The book is well presented and clearly laid out but it's not Amiga specific and it would disappoint those of you expecting a detailed programmers' account. It is however an easy to read book and is one that would be ideal for those readers wanting to gain an overall appreciation of the now much publicised, and very real, 'computer virus' problem.

ISBN 0-442-28532-9
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B.H.

'The C Programming Language - 2nd Edition'

by Brian W. Kernighan and Dennis M. Richie

You don't get far into the world of C programming without coming across a reference to 'K&R', the textbook which has until recently been regarded as providing an authorative definition of the C language. The full title of this fairly slim, but important, work is 'The C Programming Language' - it is written by Brian W. Kernighan and Dennis M. Richie (hence the K&R abreviation), and is published by Prentice Hall.

Since 1983 the C language has been under the scrutiny of an American National Standards Institute (ANSI) committee and their recommendations form the basis of a standard due to be published within the next few months. If you are involved (or are beginning to become involved) with C programming, you will be reading more and more about the changes in C resulting from the ANSI committee work. All current compilers (including the Lattice compiler which ***A.U.I.*** reviewed last month) will aim to be fully ANSI compatible as soon as possible. Because of these changes, Prentice Hall have issued a second edition of the K&R text re-written to reflect and illustrate the C language as it will now be defined.

The new edition of K&R has much the same format as the original version. It starts with a very readable 'tutorial' introduction which introduces the reader to some basic elements of the C language. This is followed by chapters which systematically deal with the characteristics of the language from a practical viewpoint - data types, flow constructs, operators etc., are all covered with later chapters moving on to the more advanced C features such as structures (complex variables), function scope rules and the use of pointers, pointer arrays and so on.

Towards the end of the book comes the reference material which outlines the draft ANSI standard. The material in this section represents, at the current time, one of the few current text sources of the ANSI recommendations so serious C programmers will find this invaluable reading matter.

The first edition of K&R is so highly regarded by C programmers it has become a legend in its own time. The second edition extends this text to bring it up-to-date and fully in line with the new ANSI proposals. It remains very readable (even humorous at times) and is one of those few textbooks which really are a pleasure to study. I do not know a single C programmer who doesn't have the first edition of this book and, because of the influence of the ANSI standard on the C language, feel sure that this second edition will continue to ensure that K&R remains a textbook that no C programmer should be without.

ISBN0-13-110362-8 ***S.M.***
Published by Prentice Hall ***£24.95***

'AmigaDOS quick reference' *Abacus*

AmigaDOS quick reference is not for beginners - it is very definitely aimed at Amiga owners who have a good working knowledge of DOS. Although 1.3 Workbench is included in the book, experience of 1.2 is quite enough.

The main section, about 80 pages of it concerns itself with a very clear, well thought-out reference to most of the DOS commands. For some reason I found at least one to be missing - perhaps it was not included when Abacus wrote the book. The Amiga system is constantly in flux - just when we thought Workbench 1.3 was the new thing, rumors are flowing thick and fast of Workbench 1.4.

The format is simple to follow. The commands are arranged alphabetically throughout; each one is surrounded by a box to highlight it on the page. Surprisingly for them, Abacus have opted to put more than one command per page whenever possible - thus saving space. Due to the layout, this system works out to be remarkably clear.

Alongside the command in the box are the variants and options available - the command template. Supplying the template in this way is a great memory jogger although DOS itself can supply the same information by typing the command post-fixed by a query. DIR ? for instance.

Underneath the box is the meaty stuff - brief details on how the command operates and what all of the options do. All of the explanations are short but to the point - so no AmigaDOS literates should get left behind. The book even goes as far as supplying all of the key sequences for both the ED and EDIT editors. At the end of each command there is a short explanation of any changes made under Workbench 1.3.

Towards the end of the text are those useful little tables we always seem to need in a hurry - but can never seem to find. These include: a full list of DOS errors, sorted by number; a list of CLI short cuts - control and escape codes; a list of ASCII characters; a simple memory map; and finally - a list of all the Guru meditations. Not that these are really much use if the failed program is not your own, still, it helps to know.

At the end of the day I have found AmigaDOS quick reference to be an invaluable reference to have near my computer. It is well produced and covers most of the things you are ever likely to want to know in a hurry. A lot of the information is duplicated elsewhere, like on the AUI crib cards, but if you like it in book form then this is the one to go for. The price though may be a little prohibitive though - seven pounds it would be good value, as it stands I am not so sure. All the same, definitely one for the man who has everything...

M. S.

Price: £14.95

continued from page 86

Professional DataRetrieve

data fields from other database files. It is at this stage that you can also incorporate such things as field verification, automatic field calculation, setting fields as 'display only', and marking fields as 'required' as opposed to optional etc.

It is at this stage that one normally creates the initial indexes and relationships needed for the application. Indexes themselves are very easy to create and use, but care needs to be taken by the users who wish to use them to make use of the full relational capabilities of the package. We had two types of comments from users: users who had no previous experience with a database product of this nature were 'surprised' how easy it was to create a professional looking screen display for their 'single file applications'.

More experienced users took the general display facilities for granted, but were interested in the inter-file linkage mechanisms, i.e. the relation definition facilities. In general the software behaved well, possibly better than we did, because on the first couple of attempts in setting up relations between multiple files.... we got it wrong. The parts of the manual which deal with the appropriate setting of field attributes used to provide links between databases, needs to be read several times. The three of us who normalised and designed our test models got it right after a few trials.

The general concensus of opinion was this: for many applications Professional DataRetrieve is very easy to use indeed..... but it was also pointed out that those users who wish to use the full power of the package, and have never used relational database software before, might find the setting up of mutiple file relations a difficult area to understand. The tutorials give examples of how it is done but they do not go into sufficient detail for a beginner to understand WHY various steps have to be taken during the creation of the file linkages. There are however plenty of useful books on such database topics - so an enthusiastic user could easily get involved with the more complex issues if he or she wanted to.

The more advanced capabilities of the Screen mask editor are some of the most powerful we have ever used - those users who need a database product which is able to provide logically independent views which implement one-one, one-many and many-many relations on data fields pulled in from multiple database files will find the time taken to understand these facilities well worth while.

The Print Mask Editor is essentially a 'report generator' - it allows you to print your data in many different formats, allows the use of headers/footers and there is a default mask available (based on the screen mask) if you need it. The List Mask Editor provides a useful single line formating capability which is ideal for providing the sort of reports which are essentially lists containing two or three fields printed in a single line (e.g. names, addresses and telephone numbers). The Print and List mask editors are very easy to use by beginners and advanced users alike and contain some thoughtful extras including the ability to do a 'test run' or even send output to the screen in order to get a preview of the output layout etc. All of these facilities offer the user the means of producing professional looking reports very easily so most of the time you will use these to get your printed output. On the odd occasion where you might want to do something particularly unusual Professional DataRetrieve's programming language can be used to specify the report requirements.

Professional DataRetrieve has the ability to export and import data to and from WordProcessors or other databases - and it can also exchange data via the Amiga's 'clipboard' device. There are some really well designed requester facilities for setting up function keys, calculations, verification formulae etc. These have been well thought out..... if, for example, you select a different font the requester actually provides some example text which changes as you move through the list of available fonts. All these small, but important, touches make you realise that Professional DataRetrieve is a program which was definitely designed to be used.

Professional DataRetrieve contains an integrated database programming language called PROFIL. This has over two hundred commands and functions and is, in many ways, similar to some of the better 'Basics' around although it includes additional commands and facilities specifically connected with its use as a database interrogation language. As well as recognising the usual strings, numerics, and array variables it also recognises field types which Professional DataRetrieve itself recognises, i.e. it has date, time, IFF and CHOICE variables. It is label orientated (i.e. line numbers are not needed) and has some flow control statements (such as a switch....case.... end switch) that make the writing of well structured programs very straightforward. In short if you can understand Basic then you will understand PROFIL. Many applications will not need separate PROFIL programs but it is obvious that such programs can greatly enhance Professional DataRetrieve's capabilites.

For all serious users the 'robustness', i.e. the ability to effectively withstand 'misuse', is possibly the most important factor governing the decision to purchase a particular piece of software. We only hit one trouble spot here and this was during the early period where we were attempting to create some quite complex inter-file linkages - twice we produced file structures that 'locked' during input. On both occasions we had to re-boot but, on both occasions our existing data was completely intact. Once we had learnt more about creating the inter-file linkages no more difficulties were encountered so the problem, as far as we could tell, was due to the definitions of our original data-base file relations. We found that the best approach was to build all of the necessary data-base files, create the links, and then test them - to make sure we had got it right before committing ourselves to a final model. Within less than a week we had developed a systematic approach and from then on things were O.K.

Professional DataRetrieve is certainly powerful. It is also a particularly well thought out piece of database software. It caters for the beginner in that it is easy to get to the state where you are actually doing something constructive, yet it has all the facilities which will satisfy advanced users. In some areas Professional DataRetrieve has slightly less 'bells and whistles' than its competitors but in some very important areas it comes across as being clearly superior.

When you use the program there is a feeling that the programmers expected the program to be used ! That may seem a strange remark but you would be surprised how much software is released where one wonders whether ANYONE, even the writers, ever intended it to be used seriously. Professional DataRetrieve is one of those programs which, in quite a short space of time, has earned our respect - we actually feel 'safe' with it. It should, and deserves to, win many friends in the Amiga community !

P.A.O.

** Professional DataRetrieve will run on the Amiga A500, A1000 and A2000 models. It needs a minimum of 1 megabyte but can be used with a single drive machine.*

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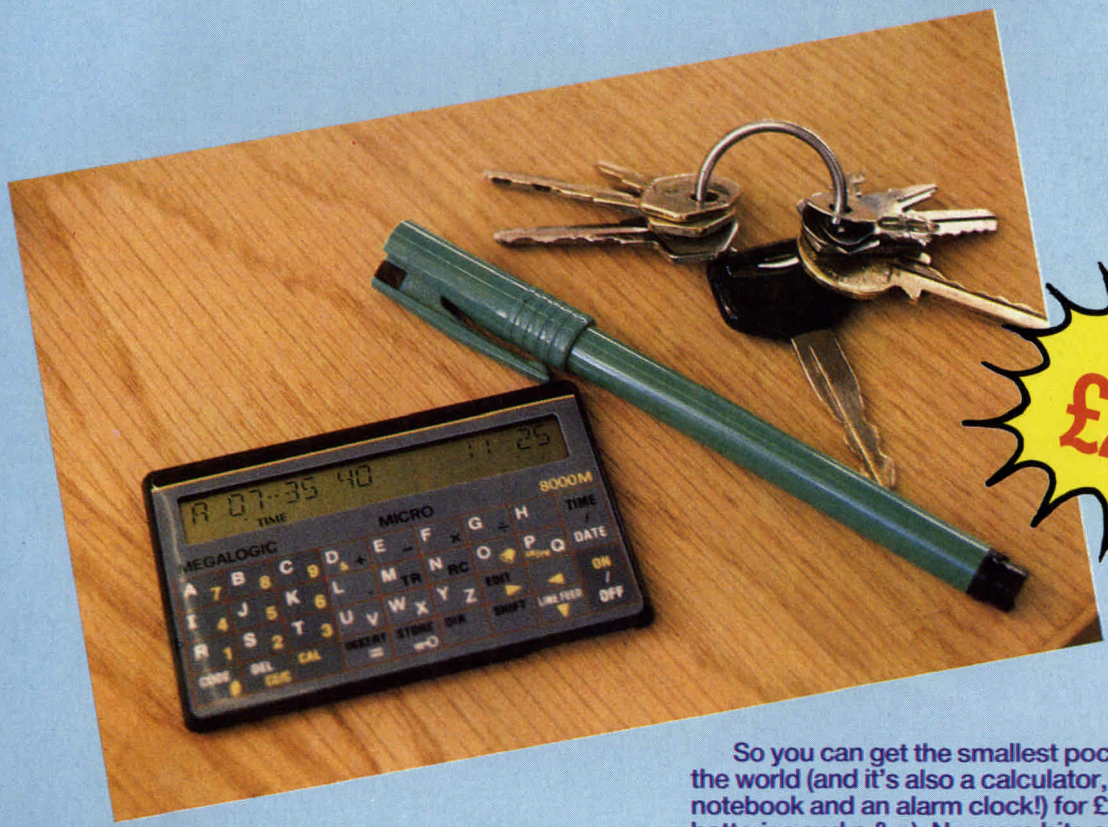

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