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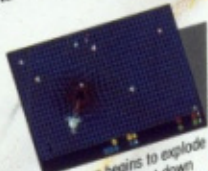


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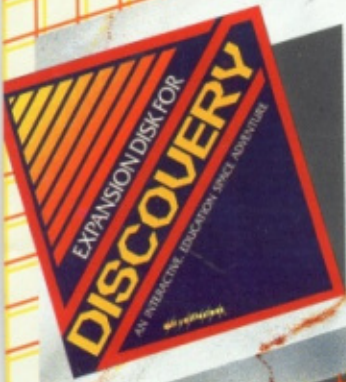
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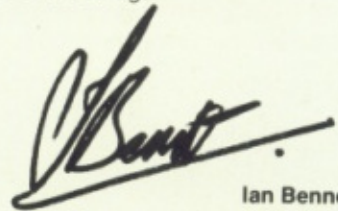
THE AMIGA DIMENSION

MAKING THE MOST OF THE AMIGA

Do you remember the excitement you felt when you first saw an Amiga in action? Do you recall the thrill you experienced when you actually laid hands on one? Remember showing it off to anyone and everyone who came within ten feet of you? SO DO WE! But... do you also recall the disappointment you felt when you found you couldn't run those curious programs that didn't have icons? When you couldn't print out a directory or when you discovered that you were unable to

perform certain tasks that used to be simple on your old eight bit machine? SO DO WE! Up until recently the Amiga world has been fairly small and unless you know the right people, quality information was very difficult to obtain. During the past year the interest shown in the Amiga has increased at an amazing rate. So much so that it became clear to us that a dedicated monthly Amiga magazine was very much needed. The staff at Amiga User have been using and writing about Amigas for over two years now mostly in conjunction with our sister magazine Commodore Computing International. Naturally during

this time we have amassed a wealth of knowledge and experience. Amiga User International is the fruit of these labours. It is a quality magazine aimed at users of all ages, levels of experience and Amiga ambitions. We hope you will join us each month and help us help you make the most of the Amiga!



Ian Bennett

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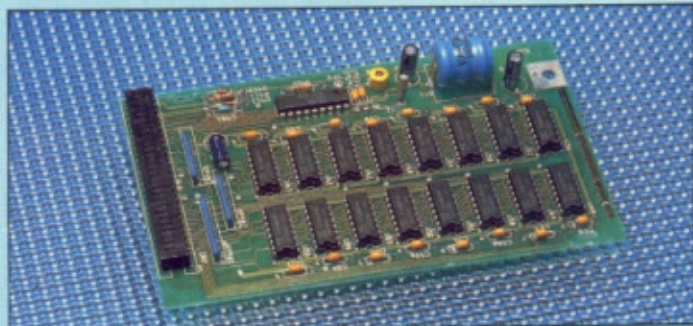
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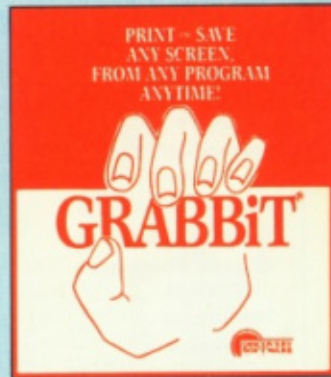
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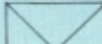
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Studio Magic from SunRize

SunRize Industries have just launched **STUDIO MAGIC**. This special effects and MIDI sequencing program will enable you to produce effects on your Amiga which would, until now, have required the use of a professional sound studio. It includes a digital sound editor with special effects tools. Cut, paste, insert and overlay are all provided for, as well as 14 advanced effects. These make echos, delays, flanges, comb filters, FFTs, compression and so on simple to produce.

Using **STUDIO MAGIC**'s MIDI sequencer combined with MIDI keyboard, you can record songs in real time and overdub. Any digitised sound in your Amiga can be assigned to your MIDI keyboard. The keyboard can be split, if desired, and tempo adjust and external sync are both included. Some impressive sounds can be produced and played when an Amiga is combined with **STUDIO MAGIC**'s digital editor and MIDI sequencer. The program is suitable for the Amiga 500, 1000 and 2000 and retails in the U.S.A. at \$99.95.

For further information contact: **SunRize Industries, 3801 Old College Road, Bryan, Texas 77801.**

X-pected soon

MicrolIllusions professional music program **Music-X** should soon be available in the UK. This MIDI based music system contains: a Librarian, Patch editor, Sequencer and millisecond resolution clock. It allows realtime/steptime recording and playback and can handle 10 tracks, each with up to 16 MIDI channels. It also carries a professional price tag of \$295.00.

Contact MicrolIllusions, 17408 Chatsworth Street, Granada Hills, CA 91344.



SunRize have perfect vision

Those busy lads at SunRize Industries have come up with **PERFECT VISION**, a real time video digitiser to help you make the most of the Amiga's now legendary graphics. Suitable for all Amiga models, it will enable you to transfer an image from a video recorder or camera into your computer. Pictures can be digitised in 16 grey scales in 1/60th of a second from a video tape,

either playing or still frame. Colour pictures can be captured either by means of a colour camera or by using a black and white camera with the colour wheel SunRize supply with the program.

PERFECT VISION supports 320x400 HAM modes. Also 16 and 32 colour modes. Files can be saved in IFF format and used in any compatible paint or desktop publishing program. SunRize suggest a U.S.A. retail price of \$219.95.

Contact: **SunRize Industries, 3801 Old College Road, Bryan, Texas 77801.**

Softwood's WRITE AND FILE

WRITE AND FILE combines a word processor with a powerful database manager for use on the Amiga. The advantage of this package is that it makes merging database lists with documents and printing custom mailing lists etc. as easy as a few mouse clicks. The word processor includes such features as multiple font styles and sizes, auto page numbering, indents, tabs, horizontal and vertical rulers, single and double page orientation etc. It is a true WYSIWYG (What you see is what you get) word processor.

In other words you can see on the screen exactly what your printed document is going to look like. Also provided is a spelling checker which will check a paragraph or whole document at a time. It contains two dictionaries. One has over 100,000 words, the other has 1,500 of the words in most common use. In addition you can create your own dictionary. Printing can be done in Graphics or Text mode. In Graphics mode the document will be reproduced exactly as it appears on the screen, whilst in Text mode the fonts will depend upon your printer, although it is faster and in some cases, better looking. **WRITE AND FILE**'s database manager may be used in a variety of applications both in business and home use. In-

T.V. Show — New from Zuma

T.V. SHOW is an animation and special effects slide show program for the Amiga. It will run on the 500, 1000, or 2000, provided you have got 1 Megabyte of RAM. It is suited to the needs of both the graphics professional and the hobbyist alike as its applications are many, including video production and titling, business graphics, sales presentations, education and the fine arts. It supports all Amiga graphics modes and has an interactive script editor which permits any range of events to be played, deleted or moved. The insert mode allows the merging of multiple scripts. **T.V. SHOW** is compatible with all IFF graphics which means that it can be used with pictures from any IFF graphics program, such as **T.V. text**, **Deluxe paint 2**, **Images**, **Digi-view** etc. It has a suggested retail price of \$99.95 and is available from Brown-Wagh publishing.

Publisher Plus

Also from Brown-Wagh is **Publisher Plus**, an advanced desk top publishing package designed to run on the 500, 1000 or 2000. It was written by the Northeast Software group and is an upgrade of their earlier **Publisher 1000**. It now includes a "postscript" laser printer capability among its many refinements. As future upgrades are released they will automatically be sent to purchasers of **PUBLISHER PLUS**. Another bonus is the new, lower price of less than \$100.

formation is managed in a list format, presented as rows and columns, not unlike a spreadsheet. Sorts may be done within rows or columns in either ascending or descending order. Key word searches are also supported. Information can be instantly transferred to the word processor. **WRITE AND FILE** costs £99.95 and is published by Brown-Wagh.

Contact: **Brown-Wagh**

Interactive video

Scicom have produced a fully integrated touch-screen controlled interactive video system, based on the Amiga. It is the PRO-TOUCH I.V. system. Their laser disk control language compiler makes it easy to author your own interactive video program. You can use your own script and video footage or take advantage of Scicom's full origination service from camera to the authoring and mastering of the finished laser video disk, including graphics. The projected price range for a PRO-TOUCH interactive video system is £3,895 to £4,895 (depending on specification), which will include a 14" high resolution colour Pro-Touch screen monitor, an Amiga, a laser disk player, Genlock and all the necessary hardware interfaces.

Contact: Scicom International, Cowdray Centre House, Suite 4, Colchester, Essex CO1 1BH.

10 Mips Graphics

Latest wonder from MicroWay is the VIDEOPUTER which is an extremely fast transputer graphics board. This follows hot on the heels of their very successful MONPUTER board. The VIDEOPUTER is a 10 MIPS, 32 bit Inmos Transputer (T414 or T800) based graphics board with 1 MByte of RAM, 256K videoRAM. It is fully compatible with the Inmos and MicroWay ranges of transputer boards and software. It can display up to 256 colours simultaneously from its palette of over 256,000. Other features include programmable video output sync rates for EGA and multi-Sync monitors and the provision of ultra-fast graphics processing speeds for all PCs, ATs and 386 PC systems. The VIDEOPUTER is ideal for programming, with the use of transputer based compilers, in OCCAM, C, PASCAL and FORTRAN.

Contact: Microway (Europe) Ltd., 32 High Street, Kingston-upon-Thames, Surrey KT1 1HL.



The Art of Chess

Chess lovers should be pleased with the latest offering from S.P.A. THE ART OF CHESS is described as "The most sophisticated chess simulation ever created." It takes full advantage of the Amiga's graphics capabilities. The board is presented in 3D format and can be viewed from any angle. It will allow you to customise your display from a palette of 4096 colours and even enable you to design your own chess pieces, using Deluxe Paint. The program is packed with features such as a very comprehensive range of play levels and styles, the ability to "see" what the computer is thinking and planning, a replay feature for all or part of a game and full problem analysis facilities. It also has a "classic game" library which can be studied in detail. It is possible to select one of the standard chess tournaments and play under strict international conditions. You can monitor your own progress using an on-screen performance meter. A detailed tutorial facility is included. It seems good value at £24.95!

Contact: Oxford (0865) 54195.

Progressive peripherals and software

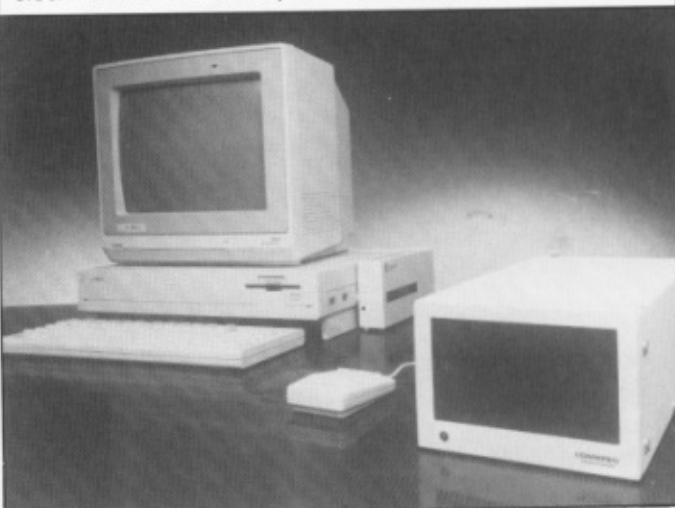
Good news for C64/128 users who have upgraded to an Amiga. Now you can use your old disk-drives, printers and many other peripherals on your new machine. ACCESS 64 is a serial interface from Progressive Peripherals which bridges the gap between the Amiga and C64/128 serial hardware. ACCESS 64's software will also allow you to transfer data to the Amiga, including word processing files! It is ideal for those of us who wish to retain information

Comspec drive a hard bargain

The first autobooting hard drive for the Amiga is now available from COMSPEC. On power-up both Kickstart and Workbench can be autobooted from the hard disk. This means that you no longer need to insert Workbench or possibly Kickstart whenever a Guru shows its face. The autoboot feature can be disabled at the flick of a switch to cope with any commercial software that requires the user to boot from their floppy disk. There are two parts to the Comspec system: The first is a SCSI (Small Computer Systems Interface) host adaptor which is where the autoboot circuitry is contained. It also includes a SCSI port and a battery backup clock. Because of the open

end SCSI driver new devices can easily be added to the system. The hard disk driver software will allow up to ten hard drives in sizes from 10 to 300 Megabytes to be connected. If at any time a media defect should occur then instead of having to re-partition and format the disk the software steps in and takes remedial action. The Comspec Hard disk drive comes complete with a power supply which can run from 100 VAC to 240 VAC, at 50 Hz or 60 Hz and a low noise fan. Two standard versions of the chassis are available: The SD20 with a 20 Megabyte half height drive and the SD40 with a 40 Megabyte half height drive. Both may be ordered with a 60 Megabyte half height tape streamer. Larger drives are also available.

Contact: Comspec Communications Inc., 153 Bridgeland Ave, Unit 5, Toronto, Ont., Canada M6A 2Y6.



we have been collecting since before the birth of the Amiga. ACCESS 64 retails at \$79.95.

Also new from Progressive Peripherals is an image enhancement and processing program called PIXMATE. The imaging technology used by NASA to process images from spacecraft has been adapted for use on the Amiga, allowing PIXMATE to perform up to 3,000 special effects on any image. Each effect also has full range variable control. The new Hyper-slice software technology uses the Amiga Blitter chip to make graphics processing ten times faster than before. All graphics modes and resolutions are supported, including Over-

scan, HAM 4096 colour mode and the new Extra Halfbright 64 colour mode. PIXMATE's sophisticated four colour separation and grey scaling process means that now anyone can prepare artwork on their computer for offset printing or lithography. Price \$69.95.

The Big Picture

You can now use hi-res and HAM files in the same picture!!! Lightning Publishing announces The Big Picture. The Big Picture permits the user the ability to overlay HAM pictures with high reso-

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A501 512K Expansion £95	Dust Cover £4.80	10 x DS/DD £10.50	Philips 8852 Monitor £245	

AMIGA B2000

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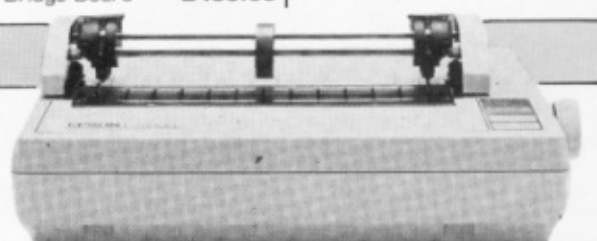
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lution pictures when output to printer. It also produces large colour charts and murals from any two IFF picture files. It will permit the user to operate DPaint or Digipaint while printing. It also produces multiple copies and has the ability to vary the aspect ratio.

Big Picture print programs are now available for the Xerox 2040, NEC Pinwriter CP7, the Canon PJ1080A and the Okimate 20 colour printer. Programs for other printers will be produced upon request. The Xerox 2040 and NEC Pinwriter CP7 versions are \$99.95. The Canon PJ1080A and Okimate 20 colour printer are \$29.95.

Contact: Lightning Publishing 1821 N. Ohio, St. Arlington VA, 22205 (703) 534-8030.

WordPerfect Price Cut

With immediate effect, the WordPerfect word processor for the Commodore Amiga range is reduced from £255 to £199 as a special promotion.

"There are two main reasons for the offer," said Jags Alfred, sales director at Sentinel. "Firstly, worldwide demand has enabled WordPerfect Corporation to exceed projected sales so that initial production costs have been reduced more quickly than expected."

In addition, Sentinel Software is continuing its 'trade-in' offer to 'Scribble' owners. Anyone currently using Scribble can obtain a £50 refund off the cost of WordPerfect Amiga, simply by sending their old master disks and manual, plus a copy of their invoice for WordPerfect, to Sentinel Software.

WordPerfect is already acknowledged as the world's top-selling PC word processor. The Amiga version offers all of WordPerfect's features, as well as maximising the user-friendliness of the Amiga's WIMPS interface.

Contact: Sentinel Software, Wellington House, New Zealand Avenue, Walton-on-Thames, Surrey KT12 1PY. Tel: (0932) 231164.

The A500 Test Flight

It has often been said that the Amiga's best selling point is the incredible graphics which the machine is capable of producing. It is certainly true that one glimpse is usually enough to hook the serious graphics user. With this in mind Commodore have made a video available to potential buyers in the USA. It is a fifteen minute long demonstration of the main features the A500 has to offer, named The Video Test Flight. There are no plans to distribute the video in the UK at the moment although Tom Hart, CBM's UK national sales manager for the consumer division, is quoted as saying "I think it sounds like a good idea and of course we'll have a look at it, like any other good idea." However, the A500 video which was shown at the PCW show has now become available to distributors in the UK and costs around £25.

CAD Package

Progressive Peripherals have also announced the release of INTROCAD. This is an introductory CAD system which combines quad-density, laser-like output with CAD to form a friendly, practical drawing system on the Amiga (all models). INTROCAD includes standard professional CAD features such as Boxes, Circles, Isometric and Projection gridding, Move, Clone, Rotate and point edit, to name just a few. Other features of the program are: fast screen updates, multi-level zoom and a user-defined parts library. A wide variety of printers and plotters may be used. Anyone needing a CAD system for the creation of flowcharts, technical documentation, circuit diagrams etc. should certainly check this one out at \$69.95.

Contact: Progressive Peripherals, 464 Kalamath, Denver, Colorado, 80204, U.S.A.

Test Fly Before You Buy.

Take The Commodore Amiga 500 Video Test Flight.



Brown-Wagh give you the Works.

Brown-Wagh is distributing THE WORKS, a complete business starter kit for the Amiga (all models) from Micro-Systems Software. It is made up of 3 easily operated, very popular business programs, making it ideal for the new Amiga business user. It includes the "Analyze!" spreadsheet, "Scribble!" wordprocessor and the "Organize!" database all on one disk! This makes for a truly integrated, flexible system. Published by Brown-Wagh, the price of the package (\$199.95) represents a considerable saving over their combined individual costs.

A Boost from MicroPro

MicroPro has announced two new add-on memory resident programs which will run with MSDOS applications, Graph-in-the-Box and Boost.

Boost runs in background with the other software, providing reminders, time and date, world clock, date stamp, address book and calculator. It can read and write to the word processor screen, using a series of 'hot keys' which allow, for example, the user to send a name and address, date and salutation to the top of a letter with just two key-strokes from the name and address routine. Users can also select and print any part of a screen, without using the normal print routines of the applications program.

It costs £39.95 inc. VAT and will be available immediately.

Graph-in-the-Box

Graph-in-the-Box is a background graphics routine, designed to provide serious business graphics. It can capture numerical information from text on screen and turn it into graphs, step charts, pie charts or scatter diagrams.

Graph-in-the-Box is capable of plotting up to fifteen sets of data in any combination of lines, columns, stacked bars etc., and each graph contains up to 500 data points over a maximum of 15 variables. Without exiting the

current working applications program, the user can create a graph in just four key strokes. Graph-in-the-Box will run with a wide range of software on IBM PC's, XT's, AT's and compatibles, and costs a launch price for the product of £89.99 plus VAT. List price will be £119.00 plus VAT.

Contact: MicroPro International Limited, Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY. Tel: 01-879 1122.

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Amiga Art/FX

This month's Amiga Art was inspired by an animated graphic demo for NewTek's upcoming DIGI/FX. Expected to arrive in April, DIGI/FX is going to add some exciting possibilities to graphics and video on the Amiga.

We used screen shots from the DIGI/FX demo and also employed other graphics packages to help create this month's front cover of Amiga User International.





'A Violence of Law!'

There can't be many Amiga users who have not heard about the infamous VIRUS, a nasty routine written by the Swiss cracking service (SCA). Its role in life seems to be to corrupt as many disks as possible, to cause programs to crash randomly and to spread the name of the SCA (which they seem to have succeeded in doing extremely well). The VIRUS probably started life as a free bonus included on illicit copies of programs 'hacked' by the SCA and which due to their very nature were soon spread around. A few people have been heard to say that anyone who catches the VIRUS deserves to. Unfortunately the VIRUS is not selective and will quite happily 'spread' to non-pirated disks etc. This now seems to be the case as it has reared its unsavoury head in some rather unexpected places. One company whose name we will not mention (thanks for the £8000.00 in used, unmarked bank notes) sent us several new programs to review, each of which were infected with the VIRUS. Luckily none of them had been released to the public before we told them of the problem.

So how does the VIRUS work?

For a disk to be bootable (Auto-startup) it must contain certain start-up information in a special boot sector. This sector is read in when such a disk is inserted at the Workbench prompt and the code executed. In the case of an infected disk the boot information also contains a routine that locates itself somewhere out of sight in the

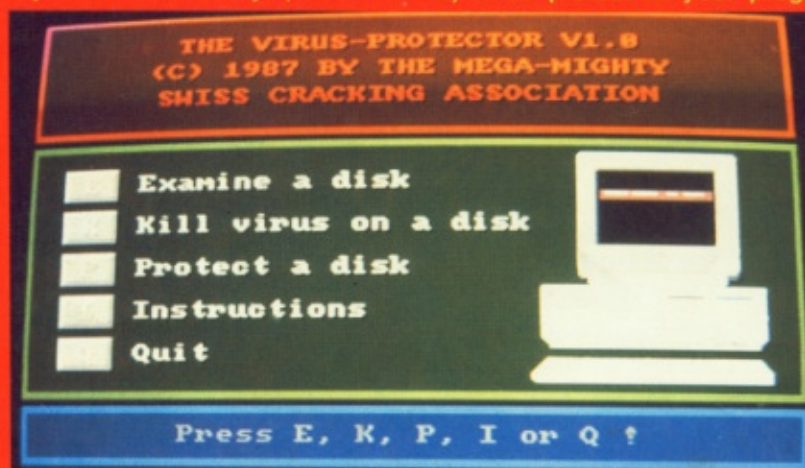
Amiga's memory and where it won't be disturbed by the three-key reset. Once activated it starts a random timer which when it triggers, terminates any program you are running and brings up a silly message telling you that your Amiga is alive and what clever boys the Swiss cracking service are. If this were all it did then it would not be too bad but once the VIRUS has been loaded it copies itself onto any unprotected disks that are subsequently inserted thus propagating itself. Now the 'SCA' may think this funny (we could

someone who has deliberately 'attacked' his fellow computer colleagues. However, it does work and further more it also inoculates any disk which it has disinfected to prevent future infection. Some small recompense for the original inconvenience and damage.

How can I protect myself from the VIRUS?

There are a number of things that can be done to help prevent the chance of you contacting the VIRUS.

- 1) Don't use pirated software!
- 2) Write protect all your program



make some comments on the Swiss sense of humour but we won't) but it can have serious and unpleasant results especially on commercial or business programs. Hacking may be accepted as a challenge created and overcome. Piracy is stealing as simple as that. However, spreading a destructive virus of this kind is vandalism or as the virus killer disk rightly but oddly calls it 'a violence'. We would be happy to hear from the 'SCA' for an explanation of this stupid and destructive act. We hope they will in future devote their talents to more worthwhile activities.

I think I might be infected. What can I do?

The most important thing to do is to identify the disks that are infected. The best way to do this is to use one of the VIRUS detectors/killers/protectors that are now available. Unfortunately the copy I have was made by the Swiss cracking service themselves and although not a case of once bitten twice shy I am somewhat reluctant to use a product made by

disks (program permitting).

- 3) Power off the Amiga if you run a program of suspect origin before you load any new programs.

Alternatively you could INSTALL each disk using INSTALL dfo: (df1:). However, any programs that make use of the boot sector to start the program such as Insanity Fight will no longer work and would probably serve better as beer mats.

We would like to thank Bill Hardwick of Digipix for providing information for the above article. He has kindly offered to provide AUJ readers with a Virus Killer disk, which will of course be extremely useful for Amiga users as a form of insurance against damage to their software. The nominal cost of the Virus Killer disk to AUJ readers is £2.00. This includes the price of a disk containing the Virus Killer program, postage and packing.

If you would like a copy of the Virus Killer disk please send us the coupon below. (Photocopies will not be accepted.)

Please send me a copy of the Virus Killer.

I enclose £2.00 to cover the cost of Disk, postage and packing.

Please tick type of computer:

A2000 ☐ A1000 ☐ A500 ☐

Name _____

Address _____

Cheques/P.O.'s made payable to DIGIPIX

Please send to:
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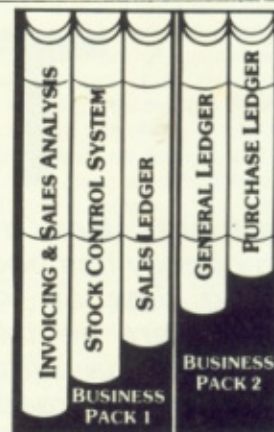
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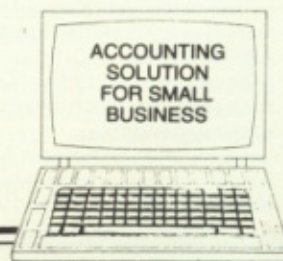
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computer should — detachable keyboard, with keypad, separate cursor keys. A sturdy CPU with inbuilt 3.5 drive (at the front) mouse and joystick ports on the right side.

Everything seemed in just the right place. Even expansion was made easy on the A1000.

The basic unit came with 256K of inbuilt memory that could easily be expanded to 512K by an additional memory unit which fitted into a socket, cleverly concealed at the front of the machine.

A further expansion port, for external memory, was located just past the two joystick ports. Be removing the cover, it was easy to fit another two megs, adding even more power to the Amiga. In all, a further 8 megs of external memory could be added.

The Amiga monitor could fit snugly on top of the CPU of the A1000 which meant a saving on space and no interference between monitor and computer. (There being a screened lid on the inside of the Amiga preventing such interference.)

The other point I particularly like about the A1000 which sadly is missing from the other two, is that the keyboard fits under the CPU when not in use thereby preventing dust of little fingers

THREE OF

The Amiga User Group's Tony Lacey has been for a long time an Amiga lover. Here he takes a look at the three Amigas, how they emerged and what you might consider before you fall for the Amiga's charms.

Not one, not two, but three Amigas to choose from! Which one would suit you? What's the difference between the models?

I hope to try and explain and answer these and similar questions that I get asked all the time at the AUG. (Amiga Users Group)

The three Amigas currently on the market are: The A500, the A1000 and the A2000.

They are all OSA (Open System Architecture) which means they are all easily expandable.

Oddly enough the first Amiga to burst on the computing scene was the A1000. Much to the shock and horror of an

eagerly awaiting Commodore buying public because the initial price was £1,400.00. A lot of 64 and 128 owners felt betrayed and just could not afford to upgrade, much as they wanted to.

So, in the end Commodore dropped the price, but only slightly! However, it was soon discovered that here was a machine that was easily worth twice its original price, as anyone who was at a particular Commodore show will remember mass demo copies of "Defender Of The Crown" being thrown into the nearest machine to sighs, gasps and general drooling from the audience.

It wasn't only the fact that the machine was all powerful, it looked the way a

to get at it! Maybe a minor feature, but one which I think gives the machine its attractively aesthetic look.

However, the keyboard itself, or rather the keys, are not as other computer keys; they are, for reasons of space closely grouped and so hitting two at a time is not un-common. But, that's something that you can avoid once get familiar with the computers.

The main problem with all three machines has been with the Amigas operating system. The first version was surprisingly called 1.1 and with the A1000 on power-up you had to load in "kickstart" which basically does what it says — kickstarts the machine ready for



a program disk. This was fine for a while, but 1.1 was soon discovered to have a few bugs and so 1.2 was released. This meant that some software written under 1.1 was not suited to the newer 1.2 OS.

But, that wasn't too much of a problem — you had to load in kickstart anyway so why not have two versions, 1.1 and 1.2 depending on what software you were going to load in after it. Quite straight forward really until the other two Amigas were launched with kickstart version 1.2 on a ROM chip, inside the machine!

Shock! Horror! That now meant that older software that only ran under 1.1 wouldn't work with these new machines. I am glad to say that most of the software houses re-wrote their software to run under 1.2 but there are still programs that will not run unless 1.1 is loaded first!

Last March both in Hanover and London the two new Amigas the A500 and the A2000 were launched. Due to my involvement with the AUG I was lucky enough to be at Hanover for the launch and what a show it was! The Commodore stand at the show was packed to overcrowding and was at least the size of a football pitch (no exaggerating I assure you!)

It was now clear and also stated by the Commodore Sales people that here

were two machines which would appeal to two totally different markets. The A500 the 'games machine' (Ugh! How I hate that saying!) and the A2000 the business machine.

The A500 is a totally different looking machine to its sister. The keyboard and main unit all one, with the disk drive on the right hand side. No room to place a monitor directly on top, in fact as much as I hate to say it, to me it looks like something the competition would make!

If you get the impression I don't like the machine you would be almost right. The one thing I do like about the 500 is that expandability up to 1 meg is made easier than on the 1000, but that's about all.

If the 500 was launched as a bottom-end market machine and aimed at people who maybe couldn't afford an extra £300 or so on a monitor why was a TV modulator not included?

The modulator is the A500 owners life-line to their domestic TV's, but it looks a monstrosity sticking out the back of the machine and costs extra as well!

The other no-no as far as I am concerned regarding the 500 is that because it is lower to the ground than the 1000 the expansion port is almost inaccessible to existing expansion units

such as a Megaboard II, or for that matter other add-ons that use that port, for example drawing tablets.

Until recently other existing Amiga hardware has had to be re-configured for the 500. A genlock unit is now available. This links your video and Amiga together.

On the other hand the A2000 has 1 meg of memory as standard and looks like a tank. Or rather it looks more like a Commodore PC. At least an Amiga that has PC emulation!

But, not that easy to put together. The add-on cards that fit into the slots inside the 2000 can be pesky like devils to get in correctly so if you are thinking of purchasing a 2000 with PC Bridge Board et al, then let your friendly dealer install them for you.

The keyboard is a cross between an Amiga and PC but, has the feel of a PC. There are the PC only keys that do nothing when the machine is in Amiga mode. The cursor keys are out on their own and are in a different formation but once mastered present no problem.

The keyboard fits in the front as do the mouse ports, but they are set deep inside and connection can get fiddly. The mouse is also slightly different and is a little bit more 'over responsive' on some surfaces.

Connections at the back are different again on the 2000, it being IBM compatible so, the parallel and serial connectors have been changed. Also changed at the back, or rather removed, is the 5 volt rails to power things like DigiView.

Genlock is another fiddly affair with the 2000 not having a composite video output. There is, however, an internal slot for a PAL encoder or Genlock board.

On power-up the fan comes into operation. This sounds like hurricane Charlie is on its way. Perhaps a high-powered fan is fine if you've got all the extra add-ons going — it keeps them all cool, but man, is it noisy! There are slots in the front of the 2000 for your IBM 5.25 drive and an extra Amiga 3.5 drive. There is also a light ready for the hard drive should you so wish to purchase one.

On the 1000, IBM compatibility is via a unit called 'Sidecar.' It fits into the expansion port and has a 5.25 drive inbuilt. A technician once told me that the Sidecar is really a Commodore PC without a monitor output. That being the case why have I heard of so many problems with it?

But the Sidecar was brought out when there was no alternative to PC emulation on your Amiga. That was before the 2000 was launched. Now, with the 2000 who needs a Sidecar to run PC software?

Which Amiga you choose depends on what you want to use it for — home, business, leisure, graphics, etc.

T.L.

A KIND



Robtek's




Brilliant Diamond Competition

Well, don't say you don't get prizes that are amazing in AUI! Robtek's classy new Diamond label is starting on a new high profile campaign. They want you to remember the name. So how better, AUI suggested, than to give away real diamonds! 'Brilliant,' said Robtek, 'We'll give AUI Readers the chance to win £5,000 worth!' So five lucky, lucky, winners are going to have something to flash around worth £1,000 each. (Flash

around! I beg your pardon!) So that everyone gets an equal chance, no more than *one* entry per AUI is allowed. We will include this competition in the February CCI which will be in the shops in January, so that if you want to have a second go you can find another coupon there.

All the answers can be found in this issue of AUI.

- 
1. Name two Robtek labels
 2. Name the Robtek boss, and where he presently lives
 3. Name three Robtek games
 4. In which area of computing are Robtek concentrating?
 5. Name one non-game product Robtek are distributing

Tie Breaker sentence

I think Robtek's products are worth considering because (not more than 12 words)

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Entries must reach AUI by March 31st, 1988 on the coupon on this page (photostats will not be accepted)

TO: Robtek's Diamond Competition
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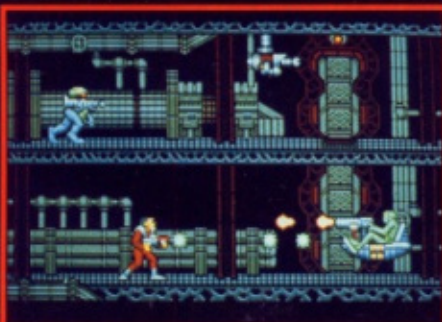
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Can you become Drak the Last of the Obliterators? Can you survive? Can you overcome such unthinkable odds?

COMING SOON

TERRORPODS

It's been a long watch... As the sun disappears over the horizon, the uninviting, grey bleakness of Collan becomes apparent. Following the intense heat of the day, the onset of night adds the bitterness of sub-zero temperatures to an already hostile environment, and the stark interior of the D.S.V. appears almost homelike.

Deep melancholy is suddenly smashed by the shrill scream of a siren. The status panel has gone crazy, an extraordinary array of lights flash uncontrollably. Good grief... what's happening?

Frantically, you turn to look at the command scanner, hunting through the mass of information before you, in a desperate attempt to decipher what has happened.

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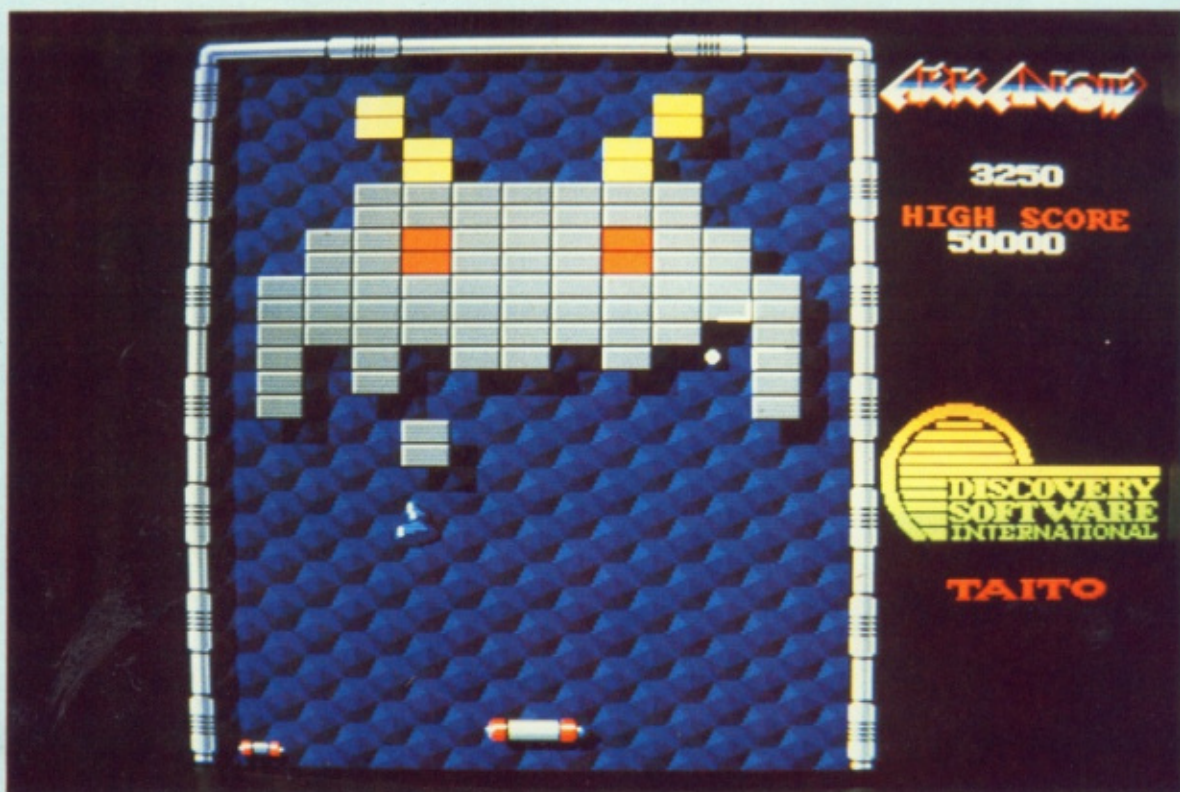
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ARKANOID

Discovery Software



One of the strangest fads to hit the arcades recently must be the revival of Breakout style games. Breakout was little more than a slightly enhanced version of those bat and ball TV game that preceeded today's home computer games. These Breakout machines were so basic, the only colour were strips of film stuck on the monitors! Then, years later, it turned up again, but this time with much improved graphics, sound and gameplay which it needed to compete with its competitors. Arkanoid was that game.

Since then it has been the source of many home computer games, and a few more arcade machines. The extent of its success still surprises me. Until now, Amiga-owning Arkanoid fans have had a few imitations of varying quality to choose from, but can now play the real thing, and believe me, it is just like the real thing!

The story, as told by a short colourful cartoon strip in the packaging goes like this. In the vast reaches of space, the good ship Arkanoid is carrying 4.5 million humans in suspended animation.

These survivors of an alien attack are in search of a new home somewhere among the stars. Suddenly, from out of nowhere, a drone fighter attacks the Arkanoid and causes a flood of gamma radiation into the ship. The two pilots of the Arkanoid eject in the Vaus Craft, leaving the humans safe in their suspension pods. An evil and warped force witnesses the trouble and traps the Vaus in a space labyrinth. Can you control the Vaus and escape these evil forces?

"The basic object is to bounce a ball off a bat which moves along the bottom of the screen, and break every brick on the screen with the ball"

Of course, all that rubbish has nothing whatever to do with the game, it could just as well be the story behind hundreds of totally different games, but that seems the norm with most computer games

anyway. For the .01% of you who have never encountered Arkanoid, Breakout, Impact, Demolition or any other similar game, the basic object is to bounce a ball off a bat which moves along the bottom of the screen, and break every brick on the screen with the ball. When all the bricks have been smashed, the game moves on the screen with a different layout of bricks.

Arkanoid's main deviation from Breakout is in the power capsules which float down the screen throughout the game. When caught, these give your bat extra power or alter the state of the ball. Different capsules can be recognised by the letter which labels them. An S slows down the ball, a C lets the bat catch the ball, an E expands the bat, a D makes the ball split into three, an L gives the bat the ability to shoot the bricks, a B breaks a hole in the wall to the next level, and a P awards an extra life. Four types of aliens bounce around the screen, and will explode on impact with bat or ball, and send the ball in a random direction.

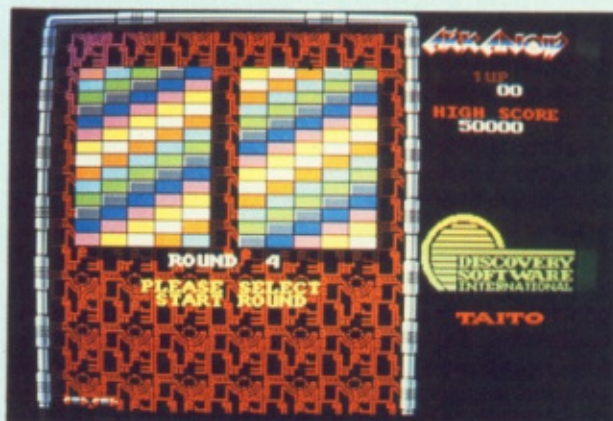


When all the screens have been broken through, the final conflict between you and the evil one (the bloke on the packaging with the fishnet stocking on his head) takes place.

"Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!"

Marble Madness set the standard for arcade conversions, and Arkanoid matches it in its complete fidelity to the original. I'll admit that Arkanoid isn't one of my favourite arcade games, but the quality of the conversion simply can't be faulted. Graphics and sound effects are identical, and due to the mouse control, the game plays just the same too. Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!

I, as a gamer across a number of computers, may have become a little tired of the Arkanoid

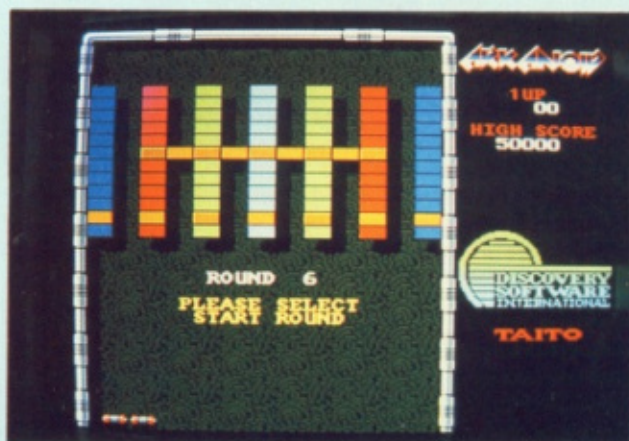


theme, having played similar games a lot recently, but any fan of the coin-op will be delighted to hear that its Amiga version is just as good as the original.

Ocean who converted it to 8 bit computers and the ST, chose not to do the Amiga version, but will be kicking themselves when they see this. It was written in America, but a PAL version is available. At the moment, its UK retail price is unknown, but for a rough guide, it sells for \$49.95 in America. Arkanoid is colourful, simple, and will make a good buy for any players starting out in the world of gaming, and of course, the fans of the coin-op. With this, Discovery have proved themselves as a very competent bunch, from whom a few more coin-op conversions would be more than welcome. If you want a game that will become an Amiga classic, go and buy this, you won't be disappointed.

T.H.

Price: \$49.95.



MEGAREVIEW

GRID START

Anco



Opponents' cars are acceptably drawn, with just about enough different sized frames to give a 3D effect. The obligatory scrolling horizon mountains/city has been drawn far too large. At the size it is, the car would seem to reach it in no time, but it just serves to enhance the effect when turning a corner. Hay bales also line the bends, I would have thought to serve as crash barriers, but a collision with one results in your car exploding!

So far, it may sound as if Grid Start is a load of rubbish. This isn't the case, because although it has these faults, the general gameplay is very good. Perhaps I've been spoilt by all these full price games, but there seems to be something missing in the gameplay. There's a strange feeling of loneliness, maybe because the apparently close horizon is never reached. In its favour, Grid Start has the smoothest road movement I can remember seeing on any home computer race game, and requires a substantial amount of skill and concentration to complete. Not only that, I know that some prefer this to EA's effort for the sheer excitement Grid Start reaches.

At the price (£9.95), you could do a lot worse than buy this. There's nothing new in Grid Start, but it is a first class attempt at a racing game, worth a very close look if speeding around a track hell for leather is your scene.

T.H.

Price: £9.95

At the other end of the price range from EA's Test Drive, there's Anco's Grid Start. The object of the game is to race 23 other cars around one of six tracks from around the world, and finish in first place.

The familiar 3D view made popular by Pole Position is the display method. Your car is controlled by steering, accelerating, braking and changing between five gears. There's also a turbo boost for faster acceleration. Before racing, the player can choose the track, and whether to compete or practice. In practice, the game is just the same as in competing, except that the booster cannot be used, and it takes place over 99 laps as opposed to five in a competition.

The race starts with you at pole position on the grid. The light turns green and the opponents zoom off. For some reason, you stay at the grid for a couple of seconds, being overtaken by the others. When you do get going, the red and white road kerbs move very smoothly, forming neat bends. Signs at the side of the road have a good number of frames as they grow from the horizon, but are unfortunately spoilt by a second image that flickers behind.



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QUAD

We all want — and probably need — short cuts to help us set to work on a computer as complex as the Amiga. “QUICK AND DIRTY” is what someone has called the kind of hint that lets you get straight to the heart of the beast. Here Giulio Zicchi starts a series of “Quads”.

Having owned my Amiga for some six months now, I have come to terms with the fact that it is truly a vast machine to get to grips with.

Unlike the good old 64 there is no way of entering a few simple pokes to produce nice effects. For a start, you have to take into account that it is a multi-tasking machine and while you may want to change the screen colour, for instance, there will almost certainly be another task running that wants to change it back! In this series of articles I hope to share the little snippets of information that I have gleaned by reading the reference guides (essential reading — especially the Hardware Manual) and generally just hacking into the machine.

While most of what I know at the moment amounts to ‘small beer’ considering the amazing software that is available for the machine, I hope that these tips will encourage other beginners, like myself, to delve deeper into the Amiga.

As most of you will know already, what distinguishes the Amiga from ‘ordinary’ computers is the use of custom chips to handle the graphics and sound, freeing the 68000 to get on with the main program processing.

The copper is a graphics coprocessor that resides inside one of the custom chips and handles almost the entire graphics display. Although it has only three instructions — **WAIT**, **MOVE** and **SKIP** — it is the copper that is responsible for loading the colour registers, displaying the current bit plane memory, displaying sprites, control the blitter etc.

Receiving its instructions via DMA, the copper is capable of changing the contents of most of the hardware registers.

In this example I will show how it is possible to wait for a specific video beam position and then load the colour registers to give a multicolour screen.

All copper instructions are two 16-bit words in sequential memory locations. First let's take a look at the **WAIT** instruction.

The **WAIT** instruction first contains the Y and X position to wait for in the high byte and top seven bits of the low byte respectively. The second word is a mask word which determines which of the set bits in the first word are used for the comparison. Bit 0 in the first word is always set to indicate that this is a **WAIT** instruction — e.g.:

\$2C01,\$FFFE wait for Y pos \$2C and X position \$00, using all 15 bits for the comparison

The **MOVE** instruction first word is the address to add to the custom chip base address to determine the register to load, and the second word is the data to move. Bit 0 of a **MOVE** instruction first word is always zero.

Given that the base address of the custom chips is \$DFF000 and that colour register 0 (background colour) is at \$DFF180:

\$0180,\$0000 move into \$DFF00 + \$0180 the word \$0000 where the format for a colour register is \$XRGB for RED GREEN and BLUE values of \$0-\$F

By constructing a copper list comprising consecutive **WAIT** and **MOVE** instructions, we can load any of the custom chip registers based on a given video beam position.

The copper scans its instructions list every vertical blank period when the video beam is at the very top of the screen, thus allowing us to perceive a stable display.

A copper list is terminated by **WAITing** for an impossible beam position, e.g. \$FFFF,\$FFFE which means wait for Y = 255 and X = 255, a situation that will never occur.

The examples in this series will all be in 68000 assembler, simply because it is the quickest and most efficient way of getting to the custom chips. I use the Devpac assembler but the examples should work with any of the current assembler packages available for the Amiga.

Turning now to the listing you will notice reference to the DMA control register and it is this register that controls which DMA channels are enabled. To enable a DMA channel, bit 15 of this register must be set along with any bits you wish to enable. To disable a DMA channel, bit 15 must be cleared and any bits you wish to disable must be set. We will have a look at this register in depth in a later article but for now we are interested in the copper bit which is bit 7. So to enable copper DMA we write #8080 to DMACON and to disable copper DMA we write #0080 to DMACON. Note that bits other than those we set are **NOT** affected. The example does nothing more than display some coloured bars on a blank background but does serve to illustrate how easy it is to use a copper instruction list. In future articles we will be showing how to generate bit plane displays and also do some scrolling and sprite movement.

G.Z.

AMIGA COPPER LIST EXAMPLE

```

;
;
EXECBASE      EQU      4
DMACON        EQU      $DFF096
OLDOPENLIBRARY EQU      -408

```

```

MAIN:  MOVE.L  EXECBASE,A6      Exec Base pointer
        LEA     GFXNAME,A1      Pointer to Graphics library
        MOVE.L  #0,D0           Don't care which version
        JSR     OLDOPENLIBRARY(A6) Call Rom routine
        TST     D0              D0 holds library base address
        BEQ     ERROR_NO_LIBRARY Or not !!
        MOVE.L  D0,GFXBASE      Save address
        MOVE.L  D0,A0           and move to address register
        ADD.L   #32,A0          Offset to current copperlist
        MOVE.W  #0080,DMACON    Disable copper DMA
        MOVE.L  (A0),OLDCOPPER  Move current copper to storage
        MOVE.L  #NEWCOPPER,(A0) Move new list address
        MOVE.W  #8080,DMACON    Enable copper DMA
WAIT:   ANDI.B  #40,$BFE001     Test left mouse button
        BNE     WAIT           Loop if not down
        MOVE.L  GFXBASE,A0      Pointer to address register
        ADD.L   #32,A0          Add offset
        MOVE.W  #0080,DMACON    Disable copper DMA
        MOVE.L  OLDCOPPER,(A0)  Move old address back
        MOVE.W  #8080,DMACON    Enable copper DMA

```

ERROR_NO_LIBRARY:

```

        RTS                      Exit !

```

```

GFXNAME:
        DC.B    'graphics.library',0  String for OldOpenLibrary
        EVEN

```

```

GFXBASE:
        DC.L    0                Storage for Gfx Base address

```

```

OLDCOPPER:
        DC.L    0                Storage for Old Copper list

```

```

NEWCOPPER:                                ;Our new copper list

```

```

        DC.W    $0100,$0000
        DC.W    $2C01,$FFFE,$0180,$0002,$2E01,$FFFE,$0180,$0004
        DC.W    $3001,$FFFE,$0180,$0006,$3201,$FFFE,$0180,$0008
        DC.W    $3401,$FFFE,$0180,$000A,$3601,$FFFE,$0180,$000C
        DC.W    $3801,$FFFE,$0180,$000E,$3A01,$FFFE,$0180,$022F
        DC.W    $3C01,$FFFE,$0180,$044F,$3E01,$FFFE,$0180,$022F
        DC.W    $4001,$FFFE,$0180,$000E,$4201,$FFFE,$0180,$000C
        DC.W    $4401,$FFFE,$0180,$000A,$4601,$FFFE,$0180,$0008
        DC.W    $4801,$FFFE,$0180,$0006,$4A01,$FFFE,$0180,$0004
        DC.W    $4C01,$FFFE,$0180,$0002,$4E01,$FFFE,$0180,$0004
        DC.W    $5001,$FFFE,$0180,$0006,$5201,$FFFE,$0180,$0008
        DC.W    $5401,$FFFE,$0180,$000A,$5601,$FFFE,$0180,$000C
        DC.W    $5801,$FFFE,$0180,$000E,$5A01,$FFFE,$0180,$022F
        DC.W    $5C01,$FFFE,$0180,$044F,$5E01,$FFFE,$0180,$022F
        DC.W    $6001,$FFFE,$0180,$000E,$6201,$FFFE,$0180,$000C
        DC.W    $6401,$FFFE,$0180,$000A,$6601,$FFFE,$0180,$0008
        DC.W    $6801,$FFFE,$0180,$0006,$6A01,$FFFE,$0180,$0004
        DC.W    $6C01,$FFFE,$0180,$0002,$6E01,$FFFE,$0180,$0000
        DC.W    $FFFF,$FFFE

```


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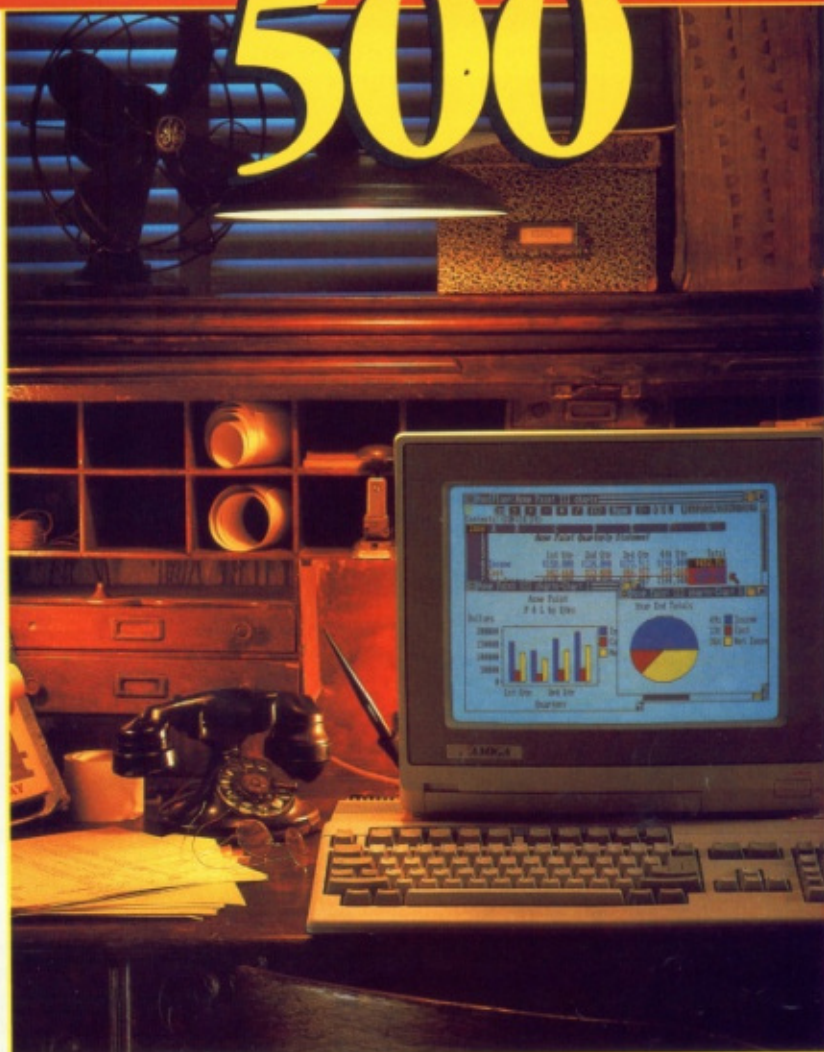
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THE 64 EMULATOR

It must be a good bet that virtually no-one who comes into the possession of an Amiga will not have used, or more likely owned, a computer before. The highest probability is that there will be hundreds of thousands, even millions eventually, who upgrade from the world's best selling computer — the 64 — to what will almost certainly be the home computer of the 1990's. But when Judgement Day comes one of the most heinous sins that computer manufacturers will be charged with will be "incompatibility".

You may be, or have been, a Commodore owner but even if you were one those millions who bought the 64 and used it lovingly for years, once you buy your Amiga all the software you acquired is condemned to the trashcan — or the classified ads. Until now that is.

For Readysoft has come up with what Commodore should really have been prepared to provide to every shortly-to-become-ex-64 owner — an emulator.

Readysoft's "The 64 Emulator" for the Amiga is a high technical achievement. It is no mean task to carry out the necessary actions to make a 68000 machine of 512K think it is a 6502 computer with a tiny 64K. Of course an emulator the other way would have been an even greater achievement and would not be welcomed by CBM... An emulator is going to be an absolute boon to those people who have loads of serious software like spreadsheets and especially stacks of data on 5¼in disks in 64 format which they want to be able to access from their Amigas.

"The first thing you notice about The Emulator is the speed — or rather lack of it"

The 64 Emulator is simple to load, just like any other program on the Amiga. You boot it up and lo and behold, there on your Amiga screen

are the distinctive two shades of blue so instantly recognisable as the 64.

You need first of course to have connected your 1541 drive by means of the interface cable supplied with The Emulator into the printer port of the Amiga. The Amiga must indeed be a clever beastie to be able to take instructions from that port which is really for sending them out!



The first thing you notice about The Emulator is the speed — or rather lack of it. Most of the programs seem to run substantially slower — that is unless you are using productivity software such as Timeworks Swiftcalc which we tested and found appeared to run exactly as on the 64. However, when we ran disks of games we had in the office, anything that had fast movement or quickshooting was reduced to an absurdly drawn out action time that made them look like the slowing of a film when the projection equipment breaks down. So most 64 games are simply not going to be worth playing. Interestingly, though, Readysoft warns that protection on 64 programs may prove an obstacle we found no difficulty with any, even the heaviest, except perhaps Defender of the Crown, and Cinemaware have always been known for there special attention to that.

Many people will welcome the ability that the Emulator provides of accessing already existing data. If for example you have been carrying

"It has the excellent advantage of allowing you to put the data straight into an Amiga file"

out calculations or keeping accounts on your 64, then the Emulator will quite happily let you use them on your Amiga.

It has the excellent advantage of allowing you to put the data straight into an Amiga file, providing you save the data onto an Amiga disk first in Amiga format which, it will let you do with no trouble. You might have some small difficulty with the need to flip manually some characters from "Commodore ASCII" to "real" ASCII but this is easily accomplished.

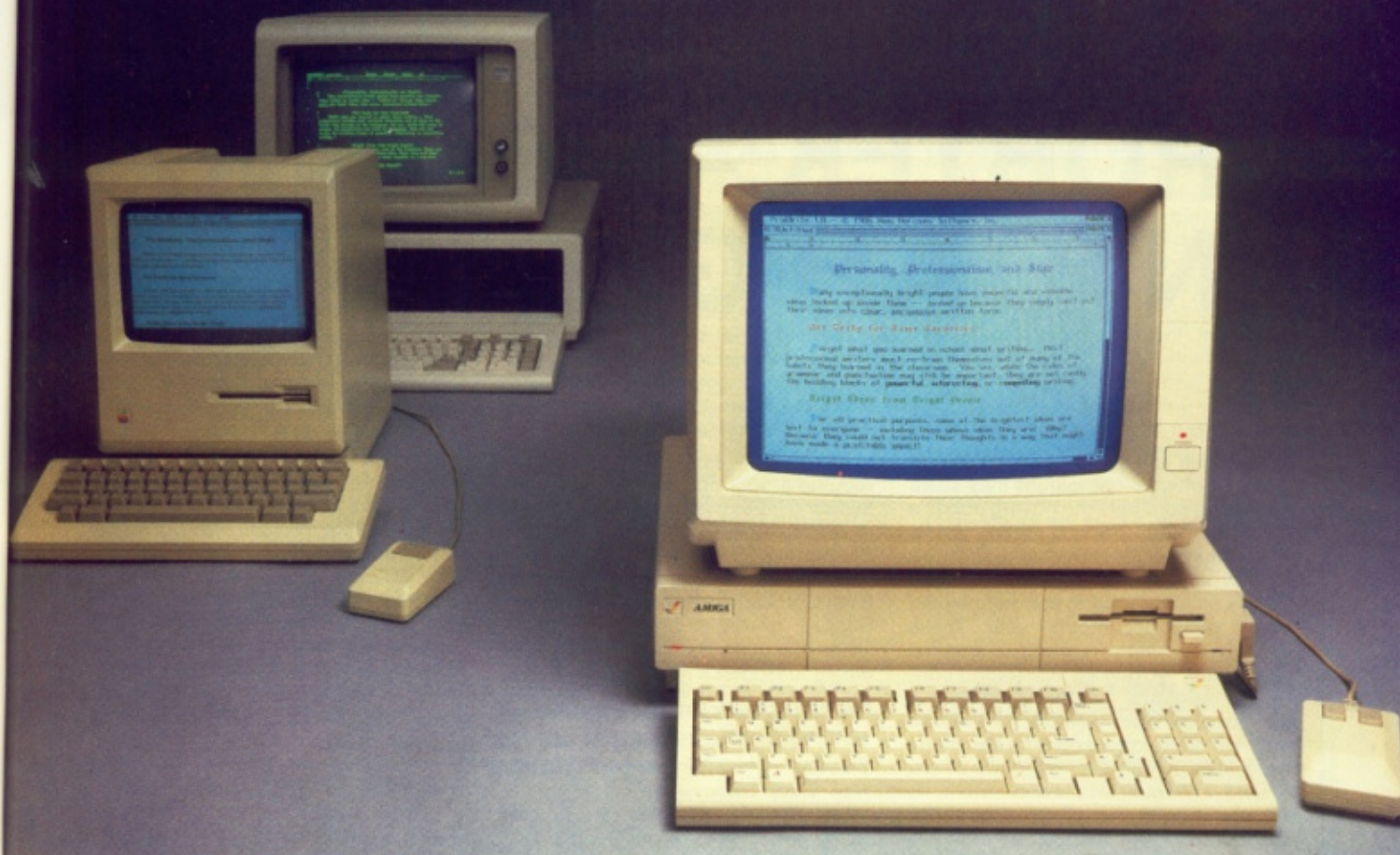
Of course not all games are disqualified by the Emulator's lack of speed. Text adventures present no problems and it handles pure graphics fast and confidently. Graphics packages like Blazing Paddles which we tested ran perfectly. Though why anyone should want to run 64 graphics on the Amiga heavens knows! Though, of course, you should remember that you cannot transfer graphics from the 64 to the Amiga because although such a transfer will work for text, ASCII is common to both machines, the graphics formats are entirely different.

If you are a straight shoot 'em up games player with little interest in anything else then The Emulator is not for you. If you are intending to use BASIC programs you may have written or constantly use, then it will be a considerable asset to your Amiga computing. For under £50 The Emulator is excellent value for the saving of effort and convenience it provides.

Contact: Readysoft, P.O. Box 1222, Lewisham, N.Y. 14092.

Price: £49.95 (approx.).

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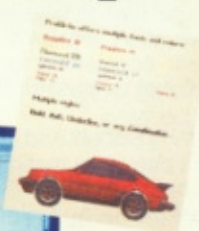
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ROBTEK — MOVING INTO A HIGHER GEAR

While some big, well-established software companies may seem to dominate the buying public's attention and pocket, there exists a small number less noticeable software houses whose products have gained them a solid reputation and the respect of the general computer user. These often highly creative and entrepreneurial companies provide an interesting contrast to the giants. Gradually, however, it has become more difficult for them to maintain their independence and many have fallen under the influence of the majors. Ocean swallowed Imagine, Beyond was taken over by Telecomsoft, Martech and CRL are now "associated" with Electronic Arts, Hewson has links with Gremlin and Mastertronic and so on. But there is one company that is determined to sustain its independence and at the same time to take advantage of a new situation which it believes allows smaller companies to fight on very nearly equal terms with the really big players.

The company is Robtek and the golden opportunity it perceives that allows it to move into a higher gear is the growing 16 bit, or more precisely, Amiga market. Robtek has been established for over two years and must be unique for a U.K. founded company in having its boss living outside the country. No, it is not for tax reasons or to hide from his two ex-wives but because Robert (that is where the Rob part of the company's name comes from) commutes between Brussels and London. This somewhat unusually long commuter's trip is due to the fact that in Brussels he manages the Belgian operation of another software house — Mastertronic. Neither he nor Mastertronic apparently considers this arrangement as likely to create conflicts of interest. Robert Zysblat is a non-stop enthusiast with clearly enough energy to run successfully the two jobs — Mastertronic and Robtek at the same time. It means though that he has to fly across to London from Brussels at least once a week but he denies that he finds

it in any way tiring. He keeps fit by jogging around the Belgian capital and avoiding his ex-wives, he comments. He is obviously enjoying the double role enormously. He has however, in the U.K. two senior colleagues: Paul Share, Robtek's Technical Director and Mike Segue, ex-Argus and now Robtek's Sales Manager. Both are highly experienced in Robtek's markets.

"Many thought that was wrong because games are not designed to be played without the 'lose' element"

Robtek, its founder declares, has not been visible enough to the general public. One reason for that may have been the rather unfocused nature of its early products. There seemed little connection between many of them and no specific area in which it chose to concentrate and in which it could be easily recognised. Perhaps the most well-known and successful product it has marketed was The Game Killer. The cartridge aroused considerable controversy at the time because it seemed to lead into areas that were somewhat dubious, particularly in allowing game-players to get "infinite lives". Many thought that was wrong because games are not designed to be played without the 'lose' element.

Zysblat, who has clearly enjoyed the controversy, points out that it is now accepted that it is the choice of the player whether he or she wants to win the set way or to take a short cut through the obstacles. The Game Killer is still a treasured tool for many games players.

Zysblat maintains that there was nothing wrong with selling a product that allows you to play a game without ever being killed. He uses The Game Killer to exemplify the creativity that companies like Robtek can offer. "We're innovators!" He declares. "We like to do things that nobody else dares . . . Robtek's role is to do things that are difficult . . ."

That is not a statement that the general run of U.K. software chiefs would care to make. As cautious businessmen they certainly do not want to try to do the difficult. It is a statement that echoes the recent comment to CCI by Trip Hawkins who built Electronic Arts into possibly the world's biggest entertainment company. He said: "It's fun being a pioneer". He made Electronic Arts an international success by the same eagerness for innovation that Robtek seeks.

Ironically, the Robtek name may become slightly less noticeable in future, irrespective of the company's success. For it now has two labels that it sees as emerging as brands in their own right. It is beginning to promote forcefully Diamond Games and High Tec as recognisable labels of quality. Diamond is to be Robtek's major games brand and High Tec is intended to emerge as a power in popular business software.

"These will be games, Robtek claims, that will offer super value, i.e. good quality games at virtually budget price"

Diamond is being given a strong push to bring its name and products before a wide public with an alliterative slogan modestly claiming to create "Decent Games". However, it is also pouring on the hype, starting with a competition in this issue of AU! where it is giving away £5,000 worth of diamonds.

Robtek's intention is to release about six games a month on the Diamond label. There will be games, Robtek claims, that will offer super value, i.e. good quality games at virtually budget price.

The first releases planned are the excellent Pinball, Diablo, Star Wars, Galaxy Flight and Jigsaw Mania. All of these games are for the Amiga. Robtek has in the past published some 8 bit games, normally for the 64, but it sees the very low price, mass market more

the province of a Mastertonic-style operation. And it should certainly know about that. It is unquestionably true that there are still far fewer 16 bit than 8 bit machines in use. That means that the competition for the 16 bit buyer is somewhat less fierce than in the overcrowded 8 bit market. And any reasonably good games can sell well enough to the still underendowed Amiga to bring a profit that is acceptable by a company like Robtek but possibly not large enough to be specially attractive to one of the international giants.

Robtek have already had one of the successes of the Amiga entertainment software list. That was Hollywood Poker for which Robtek managed to persuade a Miss Germany, among other beautiful girls, to strip off and let them digitise the photographs. These photographs now reward the skill at poker of Amiga players. It looks like there may be a second version of this popular game and it is known that many eager Amiga users are hoping for an invitation to be present at the next photographic session. Perhaps Robtek could run a competition for that too.

Zysblat is well aware that the High Tec label may take longer to establish but he is looking to release three or four

business style utility products a month. He believes that it is vital these days for a software house not to rely entirely on games, for the Amiga owner is not that same kind of computer user as the millions who bought the 64.

"It is determined to move aggressively into the 16 bit world and play a leading role in its development"

Although Robtek will not reveal many titles yet, it is clear that they have a growing list slated for early 1988. They have also a definite interest in hardware and peripherals. They already distribute one of the most successful memory products — a 2 Meg expansion that seems to have become the accepted requirement for all serious Amiga power-users.

It is not necessary for Robtek to create all the products it releases. As its reputation has built up, a number of U.S. companies manufacturing Amiga products have chosen Robtek to release them outside the U.S.A. and this trend of introducing already tested and well-received products is one that seems likely to increase. Falling into this category are products like Promise reviewed in this AU1 — and it also

includes a 64 emulator, which allows the Amiga to run programs written for the 64, which Robtek is actively considering. This will also lead to an exchange of products with Robtek's being released in the profitable U.S. market.

As another software house that is also concentrating on the Amiga told AU1, "This is the opportunity of a lifetime!" Robtek sees the Amiga situation in the same way. It is an opportunity that it is setting out to go for. It is determined to move aggressively into the 16 bit world and play a leading role in its development. It has already lined up a whole series of products that will be released during 1988. Robtek has decided to put substantial resources into raising its public profile and promoting its Diamond and High Tec brands. It has ambitions and energetic management. If the products it offers to the Amiga user can equal its determination to succeed, then there could be, as the 16 bit user base grows, a credible possibility that Robtek could emerge from the pack to challenge the really big players in the market. But that kind of success might bring a problem. On which side of the Channel will Robert Zysblat then see the biggest rewards and will Sabena Air lines lose one of its best customers?

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VIZAWRITE

The home publishing revolution continues to gain momentum — and new converts. Peter Lee evaluates the latest contender in a booming WYSIWYG market.

When people look back on 1987 it may well be seen as the landmark year when desktop publishing firmly established itself as a worthwhile business tool.

And helping lay down these foundations is the Amiga: what better machine to consummate the marriage of graphics and text? It has the power and potential to help you harness your ideas and convey them professionally.

But you do need the software that is capable of doing the job; word processors are invaluable it is true, but today, presentation is becoming more important — and that is why desktop publishing is continuing to grow in popularity.

Into this important and lively market comes Desktop VizaWrite from VizaWrite 64 author Kelvin Lacy.

VizaWrite is a true home publishing system, incorporating both word-processing capabilities and graphic reproduction; it comes on an unprotected disk to ease backups and transfer to hard-disk,

and supports memory expansion and multi-tasking.

The program gives you what you need — an exact representation on screen of what your document will look like when it is printed. It allows use of multiple fonts and text style of any font can be changed globally throughout a selected range.

Because of the display mode used, characters are double-sized so although the format you see is the format you get, it is easy to lose your sense of proportion over the overall design

VizaWrite comes on a disk containing Workbench so you can boot up the program straight away; any documents already created are saved with an icon to enable you to select and enter them from workbench — a very useful touch, even if a disk full of documents takes a while to display its contents.

The working screen, white on powder blue, reminded me of Textcraft — icons are displayed at the top of the first page, graphically showing the text format and spacing — justified, ragged left or right and centred. Clicking on the appropriate box highlights your choice, and the if any text has been entered, it configures itself to these limits.

Also on screen is a somewhat large ruler, showing margins and tabs — which can easily be altered at any time. Page numbers, headers and footers (if they're present) are also shown.

The program is equipped with the standard Amiga Workbench fonts — that is to say they're pretty banal. However VizaWrite allows other fonts to be loaded from third-party disks. I have never known what makes the default fonts so good that program developers fall over themselves to use them.

VizaWrite's initial font is Diamond, and once the program's loaded you can

go 'right ahead and input text. The screen shows part of an ordinary page and scrolls upwards as the end of the screen is reached.

Because of the display mode used, characters are double-sized so although the format you see is the format you get, it is easy to lose your sense of proportion over the overall design of the page as you only ever see around a third of it at any one time.

This is also a problem with VizaWrite's chief contender at the moment, ProWrite. I am not going to play one program against the other because while superficially similar in their implementation, there are enough differences to warrant any prospective user weighing their needs against what is on offer.

But I will say that at present, VizaWrite can only accommodate graphics in two colours — boring black and white. And even then there is no attempt to grayscale an imported coloured image. You either get solid black or solid white. The aspect ratio is also bizarre — a globe from Deluxe Paint turned out like an egg when used in VizaWrite!

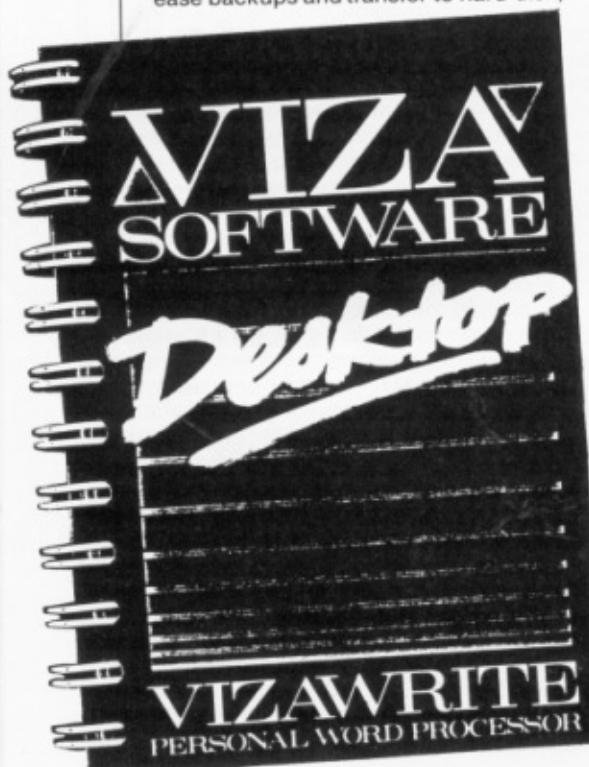
ProWrite works in multi-colours. But as one of the vast majority of humble monochrome dot-matrix printer owners, colour is a luxury I can afford to be without.

And in any event, VizaWrite boasts a very clever and useful re-sizing tool which will manipulate graphics; you can stretch images or shrink them to fill the allotted space, which makes up for the program's grievous oversight — the inability to flow text around a graphic.

A full range of pull-down menus is available by using the mouse, and without exception requestor boxes for option choices are extremely well-designed and foolproof

When you import an image into VizaWrite, no matter how small it is, you cannot enter text anywhere else on the lines taken up by the graphic; so if you need something like a letterhead or an explanatory note next to a drawing, you have to write it while you're in the art package you're using. Not friendly, and something I am assured will be put right shortly.

But the beauty of VizaWrite is its ease of use; if you are the type who will only



look at the manual as the last possible option, then have no fear — this program's built for simplicity. The major feature which will need referring to is the powerful Mail Merge, but even after a single reading this becomes second nature.

A full range of pull-down menus is available by using the mouse, and without exception requestor boxes for option choices are extremely well-designed and foolproof. There are also many shortcuts accessed through keyboard commands.

Cutting, copying, moving and pasting text is as straightforward as in any word-processor, only in VizaWrite you are manipulating text of varying fonts; should you need to amend or edit a particular portion, the correct font is automatically selected regardless of what you were using last.

Ruler settings are easily changed, with a neat trick for incorporating Tab stops; Tab settings are indicated by red triangular markers, which can be moved freely with the mouse, discarded by moving them off the ruler, or added by picking up a marker from a sort of Tab store and installing it on the ruler.

Margins are similarly edited, though for some reason measurements are indicated in inches; as a rule people use metric these days!

You can easily change the style of text in any portion of your document by marking it and changing an option

Any text under a ruler falls into place once any amendments are made to margins or lay-out format; and multiple rulers are allowed for configuring text differently in different parts of a document. You can choose to have your rulers visible throughout the document, or more usually chose the 'Hide ruler' option from the edit menu. There is also a method of fine-tuning the margin by inputting inches and fractions.

Similarly, Tab settings can be tailored to your needs, with the option to align them left, right or centred, with precisely measured positioning possible.

Because of the way the program works, text can only be inserted, and not overwritten.

VizaWrite supports plain, bold and italic faces of any font (with a rider that the maximum character size is 255 pixels by 255), as well as underline, superscript and subscript — anywhere in the document, which means multiple fonts can be used on one line.

And what's more you can easily change the style of text in any portion of your document by marking it and

changing an option — from light to bold, or italic perhaps.

Parameters for specifying page breaks are edited from a set-up menu, but you can force a new page at any time, and you can easily skip to specific pages in a long document without having to scroll laboriously through the entire text.

Search and replace options are implemented, with the ability to specify replacing all occurrences of a word or string, changing selectively, or simply finding the next occurrence. You can also stipulate a case-sensitive search.

File management is competently handled with helpful information available from a History feature. It is here you can protect work with a password as well as see the file's vital statistics — things such as the date and time of creation, a file note for information, number of words and free space available. You can also define the cursor style from this menu, allowing slow, regular, fast or no-flash operation.

As mentioned earlier, a desktop publishing program needs more than fancy fonts, it needs to be able to display illustrations, and VizaWrite accomplishes this elegantly and simply; you select the graphic to load into a document (perhaps from a Deluxe Paint brush or full-screen) and the artwork is inserted at the cursor position, pushing existing text downwards.

In just the same way as blocks of text can be moved or cut once loaded, graphics can be placed anywhere within the document, as well as being re-sized.

Changing the size of a drawing has its disadvantages though, in uneven pixel changes which can sometimes mean the object looking totally different from what you wanted! It would have been useful if a proportional sizing option had been incorporated to allow a uniform increase in size (ie increase the size horizontally by the same proportion as vertically).

Using VizaWrite to send the same letter to many people is handled by the Mail Merge facility, which is one of the simplest I have ever come across; there are no field names or numbers to clutter up your page or mind, because data is accessed sequentially.

You need to create a data file to contain the information you intend merging — name, address and so on, in the order you intend inserting it in the document.

And to upload it at the time of print-out, you simply type in the characters <> as identifiers; so if the first thing in your data was Fred Fish, that's what would be inserted by the program the first time it came across <> in your text — and so on for as many fields as you like. The other side of this coin is that if you want to refer to Fred Fish later on in the letter, you have to write his name in

that position in the data file — you can't make reference back to the earlier field.

VizaWrite maintains a Glossary where you can store various bits and pieces you'll need again in future documents; in reality this is simply a clipboard file for text and graphics — things such as your address or logo, to be recalled from disk as the need arises.

The printer set-up allows high quality output or draft, and you can simply print the document in normal 80 column output without any of the fonts being used

But the option's usefulness increases when you realise you can group items together in separate glossaries to be used for different purposes, making document management more streamlined. If the glossary item is text, a small window will show you what the first few lines say.

The printer set-up allows high quality output or draft, and you can simply print the document in normal 80 column output without any of the fonts being used; but this will destroy the what you see is what you get beauty of the program, with line-breaks at unexpected places.

The manual is well-illustrated and its clarity is superior to many I have seen for word-processing packages. There is an abundance of help, including a dictionary of terms (for instance: CLICK — To press and release a mouse button) and a thorough but scrappy-looking index.

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Conclusion

Many applications spring to mind to take advantage of this program — business presentations, advertising, newsletters — but even these serious uses cannot hide the sheer joy of being able to create good-looking layouts. VizaWrite is simplicity itself to use and produces the goods. But it will still stand comparison with rival ProWrite (check out the review in September Amiga User) as it all depends on your needs as to which you would spend your cash on. Some of the shortcomings I have highlighted should be rectified in any upgrades, so while these opinions hold good for version 1.03, it may well be that VizaWrite could get even better.

P.L.

£99⁹⁵

FACC II

In a hurry? Alastair gives us the FACCS about a new product that should help speed things up.

The Commodore 64 will always be remembered as one of Commodore's big hits. The 64 disk drives, however, may be better remembered for their slowness! Although the Amiga's drives are many times faster it is not uncommon to hear users bemoaning them. I suppose it's a case of the faster it gets the faster you want it! ASDG Inc. has taken pity on us speed mongers and have released FACC II, an 'intelligent' disk cache utility for the Amiga. The idea behind a cache is quite simple. Once data is read in from the disk it retains as much of the data as possible in spare memory in order to avoid repeated disk accesses that would read the same data again and again. Expanded Amigas will derive maximum benefit from cache buffers as they will have room for more.

FACC II uses sophisticated algorithms to optimize its use of memory used for cache buffers. The algorithm also makes use of the standard file structure to enable it to decide which blocks to keep in cache and which may be discarded. It can also avoid holding the same data twice by giving the option of retaining recently written data in cache or not.

Once invoked the main program, FACC II, is tucked away in the operating system and is not directly interfaced with by the user at all. There are, however, two user interfaces supplied; SATISFACTION, to provide compatibility with previous releases and a new interface, called FACCTION. This offers access to the many improvements provided by this second release.

The public domain tool RUNBACK is supplied to allow users of the CLI interface offered by FACCTION to drop back to a running CLI once they have invoked the interface. A real-time system performance monitor called SYSMON is also supplied which gives details of the current CPU, I/O and storage utilization levels. All documentation required to install and run these facilities is supplied on the disk in several document files. These documents include a nineteen page user manual and an eight page installation manual together with two documents aimed at the application programmer. I found all of these manuals to be both readable and useful.

Although it is possible to run from the supplied disk it is better to install FACC II onto your system disk so that it is available every time the system is initialized. One way of achieving this is to copy the tool into one of the workbench drawers such as the system drawer. In order to use all the features of FACCTION you must also copy RUNBACK and the ASDG-LOW-MEM. library into their appropriate directories. You should have no problem doing this if you follow the installation manual. A sample start up sequence is provided to allow FACC II to be automatically invoked at system initialization time.

"Another useful feature is buffer dumping, which allows all empty buffers to be quickly released"

The number of buffers used for the cache can be controlled. The amount of free memory is obviously dependent on the number of buffers allocated. FACC II can automatically detect a memory shortage and release buffers to increase the amount of free memory. The ASDG-LOW-MEM. library is used by this function which is disabled if the library is not found. The user may set the threshold which determines when a low memory situation exists. It is also possible to disable the low memory detection facility but this would allow the system to crash if a memory problem arose. When all the buffers are full the algorithm by which the tool works must decide which buffers may be refused. This decision is based on keeping in memory the last used blocks of data. The user may also decide to allow the algorithm to use its knowledge of the disk file structure in preference to a simple aging mechanism. The general principle is to throw away the data that is least likely to be missed. The ability to base the algorithm on file structure gives FACC II a fifty per cent performance improvement over the original release which did not have this option. This means that it achieves the same performance with 400 buffers as the original did with 600.

If the cache is full of vital information which will be used over and over again the user can optionally freeze its contents. This facility is probably more

important when used from within an application program than by an interactive user. Another useful feature is buffer dumping, which allows all empty buffers to be quickly released, thereby increasing the amount of free memory and avoiding waste. The freeze and dump functions can be used together with very good effect. When five and a quarter inch floppies are used the system cannot detect when they are removed. A purge facility has been added to cope with this situation. Purge empties all buffers used for the specified disk drive.

Both FACCTION and SATISFACTION provide a window and gadget interface. In both cases the window contains disk usage statistics, gadgets to change the total number of buffers in use, and a shrink gadget to alter the window size. The FACCTION window also contains gadgets to control memory thresholds and the other functions described above. The disk usage statistics contain details of the number of disk reads, disk writes, and buffer reads together with the percentage of reads which were from the buffer. This information is tabulated by drive and also details the number of buffers allocated to each drive.

In a series of benchmarks I have found that the use of FACC II can reduce access times by over eighty per cent. The first time the demo drawer which is supplied on the disk is opened takes six times as long as the second time when the data is read directly from cache. These figures are obviously dependent on many variables including the amount of memory available for buffers and the nature of the disk activity but from my tests I was very impressed. ASDG claim that FACC II can search 2048 buffers in the time it would take the AMIGA ADDBUFFERS facility to search sixteen. From what I have seen I have no doubt that they are right. If you are a heavy disk user and can spare a little memory than I strongly recommend you to try FACC II.

A.S.

ASDG £34.50

BAD CAT

Euro Gold



It was Epyx who started the multi-event sport games all those years ago, starting with Summer Games. Since then, their quality has improved with every one in the series. Because of this, it must be very hard to produce a game in a similar style, and come out on top of the inevitable comparisons. Bad Cat is one such game.

Instead of some six foot muscle-bound athlete, in the game you play a cat. This is no ordinary cat though, he is bad. So bad in fact, that he's learnt to walk on his hind legs, (two legs definately bad!) somersault, balance on giant circus balls, and ride a motor bike. Up to four players can take part over the four stages.

Stage one is set in the park, and resembles the first event of the arcade game Combat School. The idea is to reach the end of an assualt course, get the key, and ride off on the waiting motor bike. Viewed from the side, the obstacles that you find get progressively harder. Starting with some walls to be jumped over, working through water jumps, climbing frames, and a swing. Carefully timed jumps, and a lot of experimenting will get

you to the end where you ride off on the bike. Bonus points can be gained from walking on a ball which involves moving the joystick at a set rhythm (the speed of which must be found from trial and error).

This stage is in the flip-screen format as opposed to using scrolling. It's the most fun of the events, but can be very frustrating until you have worked out how to finish it.

Next, there is an interlude. This seems a pointless waste of time, and offers no enjoyment. You're presented with a plan view of the city streets, with police cars driving around. You and your bike are represented by a dot, and this must be guided to a flashing red dot. Extra points can be earned for collecting circus balls. Unfortunately, this crops up between every event.

At first sight, stage two looks like the log rolling event in World Games. You start standing on one of two circular platforms which continually move left and right. Above you is a bar along which coloured shapes move. The object is to jump up and grab the appropriate shape as it passes. The correct shape is indicated on a big screen in the

Braving the interlude once more, you find yourself under the city in the sewers. This takes the same format as the first event, but replaces walls and climbing frames for torrents of water and rats. To give a dingy atmosphere, all the graphics are very dark.

Some more events would have been nice, to prolong the game's lasting interest. The sprites and backgrounds are well drawn, but use alternate-pixel shading too much, and gives a rough effect. The majority of the game has little sound, but the few sampled and programmed

B.V.

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Grand Slam

Just about the time of the first world war, when the Russians were somewhat loosely joined to the Germans to be officially at war with the Allies, a sudden rumour swept Britain. The Russians had arrived in the north of the British Isles! How they had come or what they were there for, no-one really knew. So convinced were many people that this mythical invasion had taken place that they swore they had seen the Russians. How did they know that they were Russians? Because they had snow on their boots!

It sometimes seems that computer games designers are still living in those days or the time in the 1950's when the Cold War was at its height and the Russians had become the personification of evil. If it is not aliens from outer space who want to take over our polluted planet, it is the Russians who want to destroy the Free World. And, of course, if you are a Russian, what you want most of all is to escape; to defect to the forces of Light from the sad lands of Darkness. So what more natural than if you are a submarine commander in the Russian Navy and have under your control the very latest submarine with all the top secret equipment for you to want above all things to desert your country and family, renounce the nationality that has given you a successful career — and will probably make you an admiral if you play your cards right. Oh yes and you wouldn't let a little matter of murder stand in your way, would you? Or the fact that the whole Russian Navy will set out to sink you on sight...

Well, that pretty unlikely scenario is what you have to accept in *The Hunt for Red October*. It was a very successful novel and interestingly the copyright is

still held by the United States Naval Institute — so the U.S. Government must have found it a useful bit of propaganda to sponsor.

Argus now called *Grand Slam* and under new ownership who created the computer game — got into the Russian spirit of the thing by reversing a few N's to give the titles a look of the Russian Cyrillic alphabet. That and the unlikely scenario might deceive a few simpleminded computer players but what *The Hunt for Red October* really comes down to is a rather well put together submarine simulation with a strong tension-inducing hunting rather than being hunted element.

Your task is to steer your way from up near the Arctic Circle down to a rendezvous with the U.S. Fleet off the eastern USA so you can live happily ever after in the land of endless Coca-cola and Big Macs. No easy task though when you have to watch out for difficult seas, natural hazards and most of all for the Russian Fleet that is most inconsiderately annoyed at the idea that you have murdered one of your officers who didn't like the Coca-cola idea and that you might be presenting the Americans with all the latest Soviet submarine technology. Unsympathetic lot, aren't they? One of the best things about this game is the range of activities that you have to control while making your way from Commie slavery. In addition to the depth, you have to steer by changing the heading — sometimes very rapidly when under attack, control your sonar — to discover where possible attackers may be — and your periscope. There is a night scope, your engines and when you are driven to

R RED OCTOBER



defending yourself, your torpedoes.

There are all sorts of complicated requirements of which you have to be aware, like not being too close when you fire torpedoes or you may be damaged yourself; and the need to recognise the identity of the possible attacker because, of course, it could be an American ship and sinking one is no way to ingratiate yourself with your new friends, is it?

There is always plenty to do in the game as you have to keep a sharp look out for attackers who seem to appear out of nowhere. However, one excellent option you have when your concentration begins to lapse is to save the game to disk and start again from the place you left off when you have refreshed yourself — probably on vodka and caviar. This is a very useful option because this whole simulation works itself up into a very difficult game indeed. And after a while you get a genuinely hunted feeling, the sense that danger really does lurk out there everywhere, waiting to destroy you and that the world's hand or rather its guns and depth charges and mines are turned against you and only your determination and alertness can save you from a freezing watery grave.

The Hunt for Red October comes fully equipped with a number of extras including a Command Manual which though simply written and easy to understand is 37 pages long. The package even includes a Crew badge and a poster for you to stick up on your wall for added reality.

Of course there arrives the question for any submarine simulation of how does it compare to the

classic Microprose Silent Service which has already come out on the Amiga. Well, it is a great compliment to The Hunt for Red October to say that it certainly bears comparison to the Microprose epic. It is however rather different, less like a true simulation which places the emphasis more strongly on technical accuracy (Does anyone really know what the technical specifications of the latest Soviet sub would be anyway?) than a game in which it is the skilful, competitive element that is the magnet.

If you can get the submarine through to the haven of American hospitality, you will certainly feel highly delighted with yourself. Because it is truly an extremely hard task. If you do, I believe it will take you many hours and even then if you try a second time you will never be able to follow the same route — indeed you may deliberately vary it — and you have a whole new submarine game to play. So there is high value here, if that's what you want. How do I know this? Because even after a considerable time I still have not yet successfully completed the voyage and I shall have to keep going back until I do. Any game that can make you say that has some special magnetic magic about it. My view is that The Hunt for Red October will certainly be judged as one of the best games to come out on the Amiga so far. But could we give the Orwellian over simplification "Four legs good, two legs bad" — "Western Angel, Russian Devil" let the myth rest or even a quiet burial at sea?

Z.M.S.

£24.95

NINJA MISSION

Melbourne House

Mastertronic's latest contribution to the arcade scene comes in the shape of two Amiga-based machines, known as the Super Select Systems. These machines give the player a choice of five independent games to play, all housed in one cabinet. One has a sporting flavour, containing Leaderboard, World Darts, Sport Time Bowling, Table Hockey, and Pool. The other follows the more conventional arcade themes, and includes Xenon, Space Ranger, Blasta Ball, Sidewinder, and Ninja Mission. For this last one you don't have to rush to the draughty arcades but can play it at home on your own Amiga.

Taking the part of a heroic ninja, it's down to you to recover the seven jade idols of the village of Tambo Machi, which were stolen by the evil Akuma. Akuma is a powerful force, and has many faithful followers experienced in martial arts, who will fight to the death on his command. The seven idols have been placed around his fifteen screen fortress.

To begin with, Ninja Mission seems no more than another Exploding Fist clone. Akuma's fortress is made up of five floors, each one screen smaller than the one below. On the first floor, the enemies must be defeated one at a time using sixteen moves, which includes throwing knives and stars. When all the idols have been collected, with a sudden surge of energy, you leap through a hole in the ceiling, entering the next level.

As you'd expect, the fighting gets harder as you progress through the game. Instead of single fighters,

you encounter gangs of up to four at once. The knives and stars are a quick and safe way of killing the first opponents, but evil ninjas which appear later, pick up stars and throw them back at you. This introduces a new, if minor element to the much-used game style. I can't say there's much else that we've not all seen before, but it is perhaps easier to get into quickly because of this.

Although not amazing in the graphics department, the sprites are well drawn and attractively large. The main character in particular has some realistic animation, his jumping and somersaulting are the most believable of all the martial arts games around. I would have liked to see some more interesting backgrounds, the existing ones are a little lacking in detail.

On the whole, Ninja Mission is well done, but the exception is its sound. A rather repetitive oriental tune plays, occasionally giving way to quiet and rather weak sound effects.

I'd prefer to see more original games appearing for the Amiga, but at the price (£9.95) this has to be an outstanding buy. With Mastertronic writing their own arcade games, and thus saving money others would spend buying rights to a game, perhaps it'll force the normal price of 16-bit software down to a more reasonable level. We live in hope. Whilst not original, or particularly innovative in any area, Ninja Mission is great fun, and when compared to Karate Kid for example, is also exceptionally good value for money. Highly recommended.

Price: £9.95

B.V.



Strip Poker II

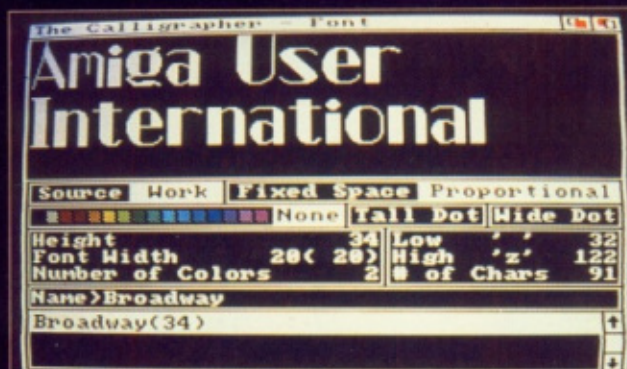


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CALLIGRAPH



1. Load in or Create new font

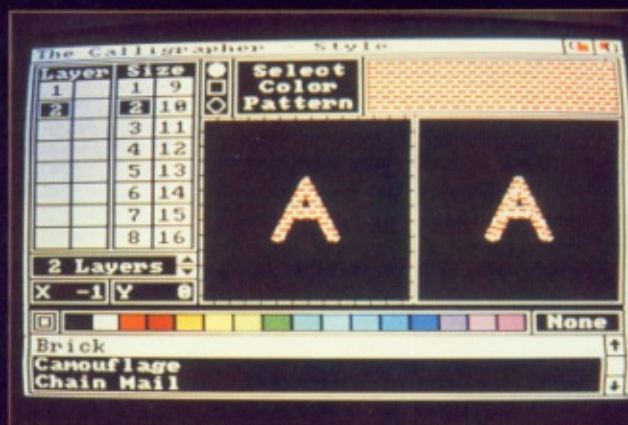
Until recently only single colour text fonts were available for the Amiga. This was a great shame as the Amiga is capable of some amazing COLOUR graphics. If you needed coloured text you had to use a paint program and manually colour each character. There are now, however, several software houses producing programs that utilise colour fonts (rumour has it that the new Workbench 1.3 will include a colour font facility). The major difficulty in working with fonts especially colour fonts is ensuring that all the characters share the same attributes.

"Calligrapher's outstanding quality is the ease with which you can try different ideas, see them on the screen, modify them and change a whole alphabet in just a single keystroke"

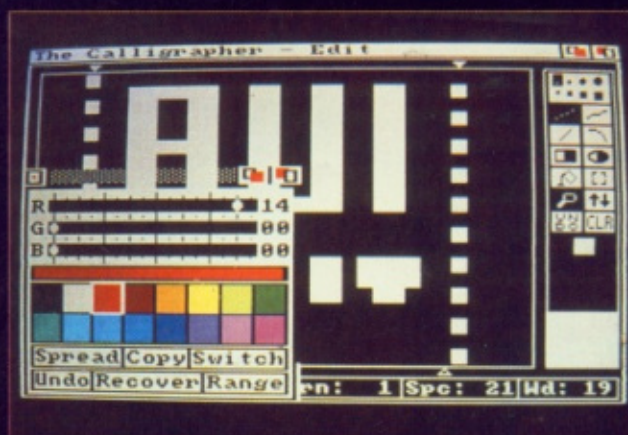
Calligrapher will allow you to modify old fonts or create new ones with up to 16 colours and any size from 1 x 1 pixel to 160 x 256 pixels. Calligrapher's outstanding quality is the ease with which you can try different ideas, see them on the screen, modify them and change a whole alphabet in just a single keystroke. Fonts can be outlined, patterned, italicised, resized, merged, have shadows added and more. There are six different screens through which all these effects can be achieved.

FONT SCREEN — Used to load and save fonts. It also includes a facility that enables you to view text in the font you have created.

SELECT SCREEN — This is where you decide which characters your font will comprise of on which some of the specialist effects will apply.



2. Create style and colour font



3. Edit individual characters

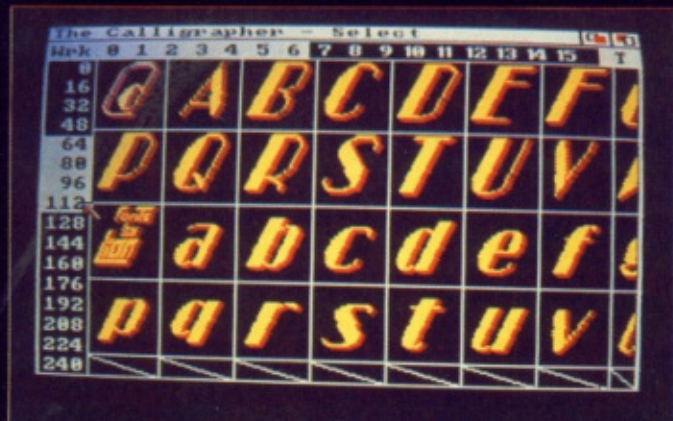
EDIT SCREEN — Here characters can be edited. Most of the usual drawing facilities are available such as: Draw freehand, lines, circles, ellipsis, boxes, zoom. Most of these are very similar to DPaint in operation. **EFFECTS SCREEN** — Fonts can be resized, their spacing adjusted, they can be slanted to varying degrees, underlining added and colour palette changed. **STYLE SCREEN** — Many special effects can be created here. A style is made up from 1 to 16 layers all placed one on top of the other. Each layer can be individually patterned, coloured or enlarged. By offsetting them in relation to one another it is possible to give the appearance of shadows, outlines etc. etc.

CALLIGRAPHER

Interactive Softworks



4. Change the size, slant or spacing



5. View or select characters

"All the styles of lettering that Calligrapher allows can be incorporated into any of the other graphic or font-using packages"

PATTERN SCREENS — Allows images produced with other packages to be imported and used as patterns with which to 'paint' the fonts.

All the styles of lettering that Calligrapher allows can be incorporated into any of the other graphics or font-using packages.

At first gith Calligrapher seems a little complicated but after a couple of times past the walk through examples it soon falls into place. Most commands are available via either the mouse or keyboard. A very useful reference card is included.

For anyone involved in presentations or videos, the possibilities that packagers like Calligrapher offer are exceptionally exciting and provide another convincing argument for the usefulness of the Amiga.



6. Test your new font

Creates...

MOEBIUS

Origin

Oriental strategy games are something of a rarity so this new release from Origin/Microprose offers something new in the way of entertainment.

At heart, very much in the basic style of the Ultima series, Moebius concerns the hunt for the stolen Orb of Celestial Harmony. As the newest disciple of Moebius the Windwalker, it will be your task to recover the Orb and so rescue the people from tyranny's thrall.

The game is in two distinct phases. The first concerns training any number of disciples in the art of bare-handed combat, sword fighting and the powers of the mind. Until you can show yourself adept in all three areas, you will not be allowed to progress to the main game.

In the training arena, you may fight against assassins or place guards. The top half of the screen shows the action (two large-sized figures pitted against each other) while the lower part of the screen records damage inflicted and alternative ways of controlling your character.

The game can be played using a variety of control methods. Single key commands can be used or, if you prefer the mouse, simple movement or the accessing of menus and icons can be utilised as alternatives. For example, use of the mouse in combat causes the pointer to turn into a sword (or leg or arm) which will change to show the direction that you can execute your blows and movements.

The animation in these sequences is somewhat jerky but effective enough. Sound is mainly confined to musical effects — there are options to switch it off partially or fully.

Once past the training phase, you are then faced with progressing through four zones and this is where the game becomes more like the Ultima style of play. Most of the screen is taken up with a view of the current area, overlaid at intervals with sundry images and underlined with an occasional message. At the bottom, statistics such as the strength of your body, mind, karma and dexterity are displayed as pure data or as changing icons.

A wide range of commands are available for your mission. In addition to the various combat options (and you may battle wild beasts as well as human foes), you may entreat villagers of both sexes to aid you. But don't approach them while armed or they may not co-operate — or worse and ironically, they may summon the enemy whom they so despise.



Your sword may be used to chop down vegetation or sharpened with a whetstone. A torch can be used when it is night and a hammer and shovel may have their uses. Water can be obtained from cisterns, rivers and streams while body and mind elixirs (obtainable usually following the defeat of an evil monk) can prove beneficial.

You will be able to cast fireballs and use a wide range of magic such as charms of teleportation and invisibility. To operate the various charms, you may need such esoteric items as a tiger tooth (for ventriloquism) and beetle pincers (for paralysis).

In addition to your magic, bare-hands and sword, you can also deal with the enemy by hurling shurikens (throwing weapons, I believe). Other features include being able to listen, view maps, obtain and use chests, speed up or slow the game to your own preference and save game states for later reloading.

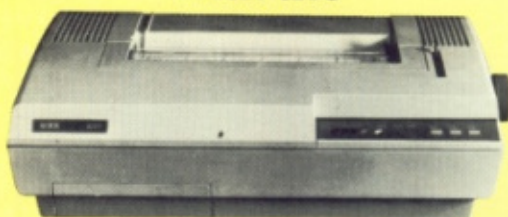
The game is a bit expensive but does offer plenty of interaction and a really long playing time — something like 50-100 hours. The graphics are quite effective although not the best you'll see on the Amiga while the animation is a long way from being smooth and flowing.

However, the variety of commands, the combat system and the length of challenge make this an interesting fantasy strategy game well worthy of your attention.

Price: £25.95.

B.C.

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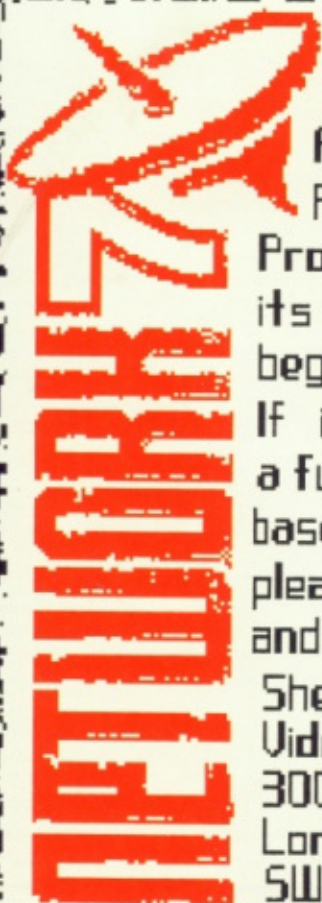
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Gary Whiteley, creator of computer graphics video company Del Muerto Production, explains how he discovered the Amiga and found a whole new business.

I was sceptical about claims made by manufacturers about their latest computers (remember the one about the ZX81 being able to run a power station?) but finally decided to take the plunge, asked the bank manager for a loan, and bought the all-singing etc Amiga A1000. Why? Because here at last was a machine with the potential to produce good quality colour video graphics, had MIDI music possibilities and plenty of scope for software development as the A1000 looked set to take on the market. It also had the convenience of a composite video output.

So, computer purchased, I started my business, Del Muerto Productions, at the end of December 1986.

My first graphics production began a day later! Now I was faced with the task of trying to produce graphics while still learning the complexities of Deluxe Paint and Deluxe Video and simultaneously trying to meet a 3 day deadline to produce graphics and captions for a video promotion commissioned by Eastern Arts Association. Add to this the problems caused by discovering that

the Amiga composite video output (at least I had one of the newly-introduced colour versions) wasn't quite up to scratch. However, by judicious tweaking of settings on the Lo-Band U-Matic (¾" Industrial Standard video format) edit suite and time base correctors — at 33 Art Centre's Video Unit in Luton — and the careful use of colour to avoid blurring and jittering, we finally managed to get an acceptable (to us, not Commodore) signal into the Gen-Lock input of the vision mixer. And after 8 hours sleep in three days the production was duly delivered on time to great acclaim.

"I tried out one of the long-awaited Gen-Lock units (which had suddenly increased in price by £200 since I'd ordered it) in the hope that it would sort the picture out"

Now aware of the poor signal quality available from the Amiga I began to get

depressed. It really wasn't up to what I considered good quality, having been involved with video production for some 4 years. So I began to make some enquiries — was I doing something wrong? I tried out one of the long-awaited Gen-Lock units (which had suddenly increased in price £200 since I'd ordered it) in the hope that it would sort the picture out. It didn't although the results on the Amiga's own screen were impressive its output was, to me, disappointing. I returned it to the dealer. After several calls to Commodore (sorry, they've moved again!) what I had begun to suspect was confirmed — the signal wasn't true PAL (the UK 625 line TV standard) and was a conversion from the NTSC (American TV 525 line standard) Amiga model. Oh well, I should have followed my own advice about computer ads. But the bank manager had me for another 5 years so I had to muddle on.

Feverish activity again produced a series of graphics for inclusion in 2 training tapes for Luton International Airport, including animation from DVideo and DPaint. Again, these tapes were extremely well received.

A few small jobs followed — an animated logo for a local company making pop-videos, a set of titles for a Save The Children Fund video and a few animation demos.

Then some real work arrived!

Some colleagues (Gorilla Tapes), of some standing in the world of independent video, got a commission from UK/TV's Channel Four to produce a 52 minute 'scratch' video for the Eleventh Hour series and they asked me to do a few graphics for them. Some samples were shown and they were enthusiastic. Ideas began to flow and slowly the graphics became an integral part of the show.

"INVISIBLE TELEVISION", which is essentially a day in the life of television compressed to 52 minutes. Because of the extensively cut-up nature of the programme (imagine changing your TV channel at least every 30 seconds) a lot of title and link graphics were required in various shapes and styles. Ideas kept being changed and hence so did the graphics.

Working in parallel with the Gorillas and local artist Rai Smith the graphics were produced mainly by using either TV images frozen into a digital frame store and captured into the Amiga via Hi-Res (monochrome) DigiView, from

graphics and photographs again Hi-Res DigiViewed, by using Hi-Res Deluxe Paint I or by a combination of these methods, and no graphics tablets.

"Suddenly there was the ability to turn out high quality work quicker, especially where cleaning up grabbed images was concerned"

Life was made much simpler when my upgrade to Deluxe Paint II finally escaped industrial action at Customs and with the installation of the 1MB Insider (thanks to Kevin at AUG for explaining how to install it when there's no sub-board in your Amiga), suddenly there was the ability to turn out high quality work quicker, especially where cleaning up grabbed images was concerned. It was the boost I was looking for. So, by combining DigiView, DPaint and some extra fonts transferred into DPaint — and an awful amount of time — the graphics were finally created to everyone's satisfaction, including the commissioning editor at Channel Four, who thought they were wonderful.

By this time I had also acquired a Triangle BR7 RGB convertor box which, while still not being exactly broadcast spec, helped a great deal in the transfer of work in progress to U-Matic for off-line (rough-cut) editing and appraisal.

Finally it was time to transfer the graphics to broadcast format tape. This was done at Visions in London, a large video facilities house, with the picture being laid directly onto Betacam (not to be confused with Betamax!) tape, since even the BR7 wasn't able to provide a stable enough signal to synchronise with the pulse-locked system there. So, once again the signal let us down somewhat, but we did succeed in getting reasonably crisp pictures onto tape.

Next, with a little help from *VERY* expensive gadgets such as Quantel, ADO and other digital effects units, some of the pictures were expanded to full screen size (it would have been far cheaper if the software companies had released PAL versions of their software simultaneously with the NTSC ones) and others compressed, rotated etc.

The programme was transmitted on Channel Four on 21st December 1987.

Again, I find that I'm going to have to invest in a PAL Encoder (a box that takes RGB input and encodes it to full spec PAL signal) if I really want to get a broadcast quality signal and as these cost more than I originally paid for the Amiga I think I'm going to have to wait a while. But, let's hope that soon people will take this machine more seriously and recognise the potential for low-cost video production, especially in small scale, low budget production and comm-

unity areas. To me, it's not good enough that Commodore can entice buyers for the A500 by saying things like 'as used in the Chart Show' — how about an ability to produce picture quality too without having to spend £1500 on a PAL encoder or £1000 a day to hire broadcast facilities if you don't have that kind of money (or even an extra £400 on a Gen-Lock unit).

Other recent work has included a collaboration with Stan & Jackie Hearle (Artbeat). As a result of this an animated video was produced using Aegis' Video-scape 3D animation software and successfully shown at the last PCW Show on Triangle Television's stand in the Commodore Village (where the original of this article was stolen, along with its accompanying disk). Readers of this magazine will recognise it from stills of 3D castles and trains. Jackie and Stan did all the hard work — I just pasted it together on the video machines. This collaboration looks set to continue for some time, with a new animation being produced for showing at the Which Computer Show and the possibility of some TV commercials. I've also recently done several more sets of video graphics and titles for local companies and a showreel is in the pipeline — hopefully available by February 1988.

Now, back to work. The next project for Del Muerto is to produce a pilot tape for advertising local arts events — to be produced on a monthly basis, if successful, on Lo-Band U-Matic and distributed on VHS tape to local sports and community centres, libraries etc as a form of cultural magazine.



I would like to stress that whilst unhappy with some aspects of the Amiga's video output, I am still a staunch supporter of this machine and it's good to see that the standard of software is increasing by leaps and bounds and that PAL software is becoming steadily more available but that there's a long way to go yet!

G.V.

Contact: Del Muerto Productions (0582) 21448.



BACKLASH

Novagen

I don't know about you, but one thing that really annoys me is a load of long-winded irrelevant scenario that has to be ploughed through to find out how to play a game, when the simple play instructions could be written on a postage stamp. For this reason, Backlash gets off to a good start in my book; its instructions are so brief and to the point, I thought I must have mislaid a novella.

Backlash is from Paul Woakes, the author of Mercenary, and as you might expect, is played in well-fast 3D. Mr Woakes has dispensed with vector graphics, and moved on to solids. The speed of the game is very noticeable when compared to 8-bit games such as Driller and even Mercenary. There are no plans for 8-bit version of Backlash, and it's easy to see why. Its lightning fast, swirling movement would just be impossible on lesser machines than the 68000 level.

Unfortunately, the good point about no storyline I mentioned, is also indirectly a bad point. The object of the game is merely to score as many points as possible by shooting the aliens. It seems a shame that there's not more to it than that, as the 3D system it uses works very well.

The game is set in a vast flat desert-like area, inhabited by a variety of hostile life forms. These emerge from hatches on the ground, shooting fireballs and missiles at you. The only thing for it is to blast them to bits. Whatever it is you're meant to be in (I presume it's some sort of tank), has an infinite amount of fireballs which can be shot in rapid succession. These shoot off into the distance, bouncing along like some highly destructive snake.

The speed and smoothness really show off the power of the Amiga, and are a considerable improvement on those of Mercenary

Most baddies you encounter are in the form of a flying saucer or spinning top, but now and then you'll come across a brilliant winking eye. Blasting any of these results in an excellent explosion effect, with particles flying off in all directions. The speed and smoothness really show off the power of the Amiga, and are a considerable improvement on those of Mercenary.

Good sound effects during the game add to the impression of mad blasting and destruction.

This super-fast 3D is all very clever, not to mention pretty, but after a short time, Backlash seemed more a demo than a game. Some incentive to progress such as different levels, would make it much more interesting in the long run. I'm not saying it should be an arcade adventure, straight shoot 'em ups can be great fun, but there just seems something missing in the gameplay.

Democles, the sequel to Mercenary should be along soon, which promises just as impressive 3D, and a lot more depth. That's what I'm waiting for, but if you think a clever, fast up-to-date Battle Zone type game is what you're after, Backlash will be worth the folding stuff. Although I think £20 is rather expensive, you'll certainly get some outstanding shoot 'em up excitement for your money.

T.H.

Price: £19.95



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AMIGA 2000

A Psychological Heavyweight

Our Commodore Amiga 2000 arrived with the specification of one internal 3½in drive and a 2088 Bridgeboard, with the Bridgeboard — in effect a PC — comes another 5¼in drive which requires installing. This configuration, however, causes confusion to some software as it is equipped to recognise the drive that we did not fit — the second internal 3½in drive — as DF1: So any instructions from software for DF1: provokes a request from the Amiga for a DF1: disk! You cannot blame the machine for that misapprehension and this is correctable by assigning all DF1: commands to DF2: — the external A1010 3½in drive we used.

The installation of the bodyboard and 5¼in drive is not the easiest of procedures. The screws are recessed and that makes it a fiddly job. The Bridgeboard is a very tight fit and caution is needed to ensure that there is no possibility of it snapping. The whole installation period, nevertheless, took no more than forty minutes. The best way, of course, is to get the dealer who supplies it to carry out the installation before delivery. They are very willing to do this as it ensures that the installation is carried out correctly and they do not get it back again with a disgruntled request.

After we had the Bridgeboard and drive installed, we sat back and looked at the 2000. The first thing we noticed was that the keyboard no longer, as with the 1000, would fit under the case of the computer.

This seemed to us a pity for the Amiga 1000 had that extremely pleasant advantage of disappearing underneath the case and leaving extra workspace when the compute was not in use.

The new 2000 keyboard is also longer and IBM compatible style. This will certainly make anyone familiar with PCs feel at home but we asked ourselves why Commodore should have found it necessary to dispense with the "tuck-away" neatness. It may have been thought that the already substantially taller 2000 — the depth of the case is almost twice that of the A1000 — would have been altogether too high with another space underneath.

There may well be another explanation. Possibly Commodore thought of the A2000 purely a business-orientated computer. As such it needs to look like a business machine. A keyboard on the desk has that workmanlike appearance that could give it that extra conviction and anyway, they might have thought, it is a home machine not a business computer on which you need to save space. They may have got it wrong there. Efficiency and space-saving are more a factor in business decision-making than in home computing. Though the extra height required might indeed have produced a slightly ungainly look. The loss of the "tuck-it-away" A1000 procedure is characteristic of

the changed sense that anyone familiar with the earlier machine will immediately notice. We felt somehow that everything had changed. "Every plug, every port" Someone said sadly. Even the power switch is now at the back. Awkward? A little. So why should anyone want to change that? Because they can have a moulded unit with the switch attached was our guess. And so it proved when we examined it.

"Our first problem was that our newly installed 5¼in disk drive did not work; not, however, the A2000's fault but our own. We had plugged the cable in the wrong way"

So it is clear that many of the changes that Commodore has made are not, as is often thought, for malign or perverse purposes but for highly practical reasons that will probably save them, and the customer, money. But for the practised A1000 user the unfamiliar is the uncomfortable. For the new Amiga 2000 user almost certainly it will all seem just wonderful — until the next Amiga comes along and whatever novelties that possesses will seem unnecessary and hostile too . . .

Our first problem was that our newly installed 5¼in disk drive did not work; not, however, the A2000's fault but our own. We had plugged the cable in the wrong way. The picture in the instructions was certainly capable of misleading but the instructions were perfectly correct. Those instructions needed to be followed carefully and faithfully because once again, things just do not work the way you would expect them to from A1000 experience.

We first examined the MsDos facility. There are two PC modes: Black and White and Colour. Both modes can be in action at the same time but it is important to go first to the Black and White mode and then tell it to go on to Colour. You can revise its instructions to enable you always to begin with Colour, if you wish.

One of the fundamental advantages that the Amiga 2000 possesses is its ability to have its PC and Amiga sides talk to each other and exchange data. Text can be taken from the PC window into the Amiga Clipboard, i.e. Notepad, very easily. You simply highlight the copy and pull it over. It can then be pasted into the Amiga window and incorporated into any file. This quick and simple procedure can also be carried out in the opposite direction, too.

So you have not only the advantage of running PC software but also taking data from it and carrying it into the Amiga's superior graphic and sound capabilities for its convenient use there. "One day all computers will be built like this . . ." someone said.



Another neat idea is that by a double click of the mouse the borders in the PC material can be dispensed with. And a colour change of the screen is also available. Yes, of course, to established Amiga owners these may seem ordinary but for the users of MsDos they are highly unusual.

"Another un-standard benefit is the ability to create 'virtual' disk drives"

There is a priority-setting device that allows a series of tasks to be carried out in a regular, preferred order. This is especially useful if one task is taking large portions of system time and resources before the others, perhaps of greater importance, can get to it. Another un-standard benefit is the ability to create "virtual" disk drives. That way, for example, it is

possible to keep one disk of a dual disk program in memory.

This can be done either for the 5¼in or 3½in disks. If you wish to transfer whole files between the AmigaDos and the MdDos this can be done through a single command "Aread", which puts PC data onto your 3½in disk. "Awrite" copies it the other way onto your 5¼in disk. The 2000 has the normal reboot sequence for PC's of Control, Alternate, Delete which is the standard three key reset. It is also better than just a PC for it is fully XT compatible.

The 2000 is externally expandable to 9 Mg (1 Mg inside) but the PC has to be upgraded separately (by PC RAM expansion card) another 128K which is the same as most PCs. Its 8088 Intel processor can be paired up with the 8087 Intel co-processor for fast Math work.

(CONTINUED FROM PAGE 49)

As in the Sidecar, Commodore's technically successful but far from bigselling PC for the A1000. It uses the parallel port of the Amiga as a printer port by clicking on a LPT 1 icon. When this is done the PC mode will print but not the Amiga and it is necessary to release it before the Amiga will take over to do its own printing.

Both the Parallel and the Serial ports are now IBM compatible and you can also attach extra drives to the Bridgeboard.

There will be practical problems for upgrading 1000 owners in addition to the psychological. If, for instance, you have one of the old A1000 DigiViews you will not be able to use it because they have changed the gender of the socket and anyway they have also altered some of the wires, we estimate six. So even if you change the gender plus yourself, you still will not be able to make it work on the 2000. It is possible to use special adaptors but they may not be easy to obtain. There is now no composite video, which may seem something of a surprise change. The 1000's sprites was, it is true, less than wonderful and we suppose that one reason for the change may be to ensure that any composite video now used will be one on a card which should be of much higher quality. And if 1000 owners have any old Kickstart 1.1 software still in use, it just is

not going to work. Time and Commodore and Kickstart marches on . . .

We have chosen to test almost entirely the MsDos attributes of the Amiga 2000 because the Amiga side of the 2000 is, in performance, very little different than the already existing Amigas — the 1000 and A500. That is not to say that its performance is not exciting. For anyone who has not already experienced the Amiga excitement, the A2000 will come as a revelation. There is no computer in its price/performance range that can get anywhere near it. Indeed to see the MsDos standard head to head with the Amiga technology brings home forcefully just how technologically superior is the Amiga. The Amiga 2000 has the undeniable advantage of being able to offer both the qualities of the computer of the next decade and also the less thrilling but highly useful abilities of an IBM clone, with all the automatic benefits that confers.

The 2000 is a highly business-like machine which will no doubt look very much at home in the modern office. It has all the heavyweight power of the internationally accepted range of IBM PC's and looks the solid and reliable business part. But inside there lies the exciting spirit of Amiga innovation — that same touch of computer magic that makes people seeing it for the first time realise the strength of the phrase — Only the Amiga makes it possible.

Price: £1,500, depending on configuration.

WHY A 2000?

Why does there have to be an Amiga 2000? Why didn't Commodore just stick to the 1000 with a lower level machine, the 500, aimed at the cheaper end of the market? Because the world is not a simple place. The A1000, fine machine though it is, fell between two stools. It was neither the obvious business computer and it was too expensive for the home market. The A500 will, on the other hand, clearly satisfy a need for a superior home computer and, as the price falls, take the place of the 64 as a natural international entertainment machine.

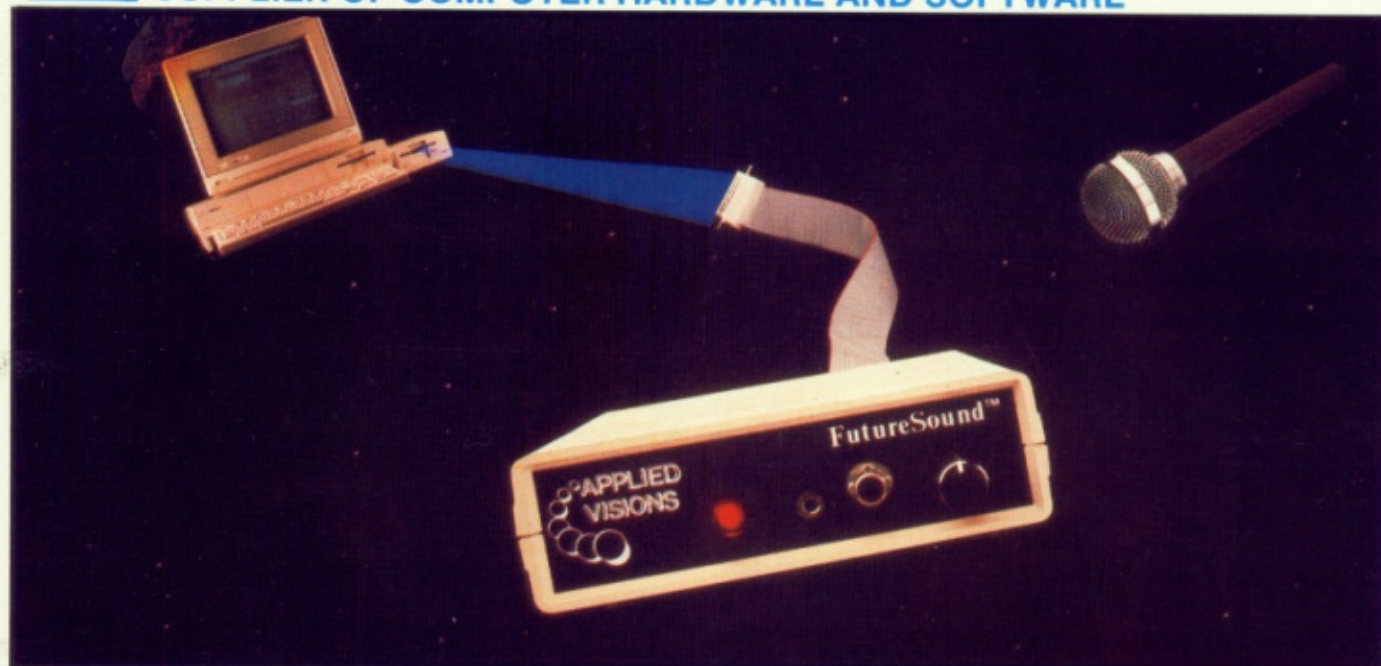
The 2000 is not immediately credible especially to the many loyal 1000 owners. Its market orientation is not obvious but it exists. A personal computer for business today must run MsDos. We may argue whether that is really necessary but not whether it can be justified. MsDos is unarguably the international small business computer standard. A Macintosh may buck it, even successfully, in a minor market but for the mass market, as Amstrad and Compaq and Epsom and Commodore know, that is the way it is.

So why, you might ask, does anyone need to buy a 2000 when it is probably possible to acquire a PC or XT and an Amiga separately for a little

less than the 2000 costs? Because if you want to buy an Amiga, you now have to buy a 500 and many business people would not be seen dead with a "games" machine on their desks, even if there might be financial advantages. If therefore the 1000, at its price range and level, cannot be practical and the 500 is not suitable for anything than the home market then, ipso facto, Commodore needed another Amiga to give them a share of the lucrative business market. They might only sell one 2000 to every ten 500s but that smaller number can turn out to be as profitable, or nearly so, as the larger sales of the mass market computer.

For the "niche" markets, specialist areas, like design or video, then you might not need the MsDos facility but maybe you can even run your accounts on it and in any case for many people the 500 just does not look important enough for professional uses.

So, in many ways, the 2000 was both logical and inevitable. Its success will depend less on its unrivalled technical advantages than on CBM's ability to exploit the psychological foibles of the business world.



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COMMODORE MICROCOMPUTERS NOV/DEC 1986 QUOTE

Our favourite sound digitizer is Futuresound from Applied Visions. It comes complete with microphone, interface, good software and decent documentation. It is a good buy and may be the choice digitizer for programmers who need sound effects in their programs.

DELUXE NEWS MAY 1987 QUOTE

The OPEN THE POD BAY DOORS HAL Line that appears on the Deluxe Video demo disk was actually one of the very first recordings ever made using Futuresound. Futuresound the premier audio digitizer for the Amiga.

CCI JANUARY 1987 QUOTE

A sound created with Futuresound and saved in IFF could be read into INSTANT MUSIC or DELUXE MUSIC for further manipulation. Using Futuresound is simply a matter of making certain that everything is properly connected and then loading the software. If Deluxe Paint made you look, then Futuresound will make you listen.

YOUR AMIGA JULY 1987 QUOTE

Futuresound is a professionally presented product, from the solidly built hardware to the neat manual with large type and clear diagrams. If your hobby stretches to £175, or sound sampling is something you need to achieve on the Amiga, then I am unaware of a better way of performing it. By Anne Owen

FUTURESOUND is fully IFF compatible (actually three separate formats are supported) your sounds can be used by most Amiga sound applications. Such as Aegis Sonix, Deluxe Music Construction Set, and Deluxe Video Construction Set from Electronic Arts. With Futuresound and Deluxe Video your video creations can use the voice of Mr Spock, your mother in law, or a disturbed super computer. Programming support is also provided. Whether you're a "C" programming wiz or a Sunday afternoon Basic hacker, all the routines you need are on the non-copy protected diskette.

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Dear AUI

I have an Amiga A500 with the A501 memory expansion. I wish to set up the 'startup-sequence' file in the 's' directory of 'WORKBENCH' so that 'Diskcopy' and 'Format' normally in directory 'system' are copied to the 'RAM DISK' and accessed from there. Although the files copy OK, when I 'ASSIGN SYS:RAM:', WORKBENCH still asks for the two files from 'SYS:system' on the floppy disk! What am I doing wrong? I have edited the 'startup-sequence' file correctly with the following commands:-
DIR RAM:
COPY DFO: system/#? to RAM:
ASSIGN SYS: RAM:
PATH RAM: add

If this is incorrect could you please explain why and if possible print the commands I require.

Thanks

Shaun Watts

Dear Shaun

'Diskcopy' and 'Format' are expected to be on device 'SYS:' in the directory 'System'. Your third line (ASSIGN SYS:RAM:) is correct, but you have copied the system files to 'RAM:' without having made a 'System' sub-directory.

To get your new 'startup-sequence' file to work, replace DIR RAM: with MAKEDIR RAM:SYSTEM, in the COPY command change RAM: to RAM:SYSTEM, and change PATH RAM: ADD to PATH RAM:SYSTEM ADD.

Once the new 'startup-sequence' file is working, you will have to include 'df0:' in front of 's/startup-sequence' to access this file for any further editing.

Dear AUI

Here's another begging letter for help. Having just recently purchased an Amiga A500 I started looking around for assembly language programming books. Unfortunately they all seem to revolve around C. I mentioned this fact to a friend and the subject got around to books for the 64, Rae West's name was mentioned along with the book programming the 64. As this was such an excellent book I thought it might be worth asking you if he has got around to writing one for the Amiga, if not could you please suggest some titles?

Yours sincerely
Terry Bradshaw

Dear Terry

There are no 68000 Assembler books specific to the Amiga, and Rae West is not working on an Amiga book. The best general book is **68000 Assembly Language Programming — 2nd Edition** by Lance Leventhal (Osborn/McGraw Hill, 0-07-88123-1, £19.95).

If you need something simpler to get started, try **First Steps in 68000 Assembly Language** by Robert Erskine (Glentop, 1-85181-0811, £12.50).

There are two Assemblers available for the Amiga: Kuma's K-Seka (£49.95) and Metacomco's Macro Assembler (£69.95).

Tab Books have announced that they expect to release a book entitled "AMIGA ASSEMBLY LANGUAGE PROGRAMMING" sometime in 88. (0830627111 — £11.20).

Dear AUI

I am a final year computing student at the University of Ulster (at Colerain) studying computing science. Part of my degree requires that I design and implement a system from scratch. Ordinarily this would be a difficult task, but my project, a bulletin board, is undoubtedly too large a problem for a single individual (having until the end of February to complete it). Since this has already been acknowledged by my lecturers it is not my immediate problem. My problem is that neither I, nor my lecturers, can find a single book or reference that would be of any help.

Since I am a regular reader of your magazine (admittedly amongst a few other magazines), I, on realising that you have covered similar topics from time to time, am calling on your expertise and knowledge of the industry to try and possibly provide me with any information that you think could assist me. I understand that this is asking for a lot but I would be for ever grateful.

Yours hopefully,

Kieran Hegarty

Dear Kieran

There are two American books available in the UK which will help you:

How to Create Your Own Computer Bulletin Board by Larry L. Myers (Tab Books, distributed by Foulsham, 0-8306-1633-0, £11.50) includes listings in a mixture of Basic and 8080 Assembler. The author has designed and operated two Bulletin Board Systems (BBSs) in the Albany, New York area.

The Netweaver's Source Book by Dean Gengle (Addison-Wesley, 0-201-05208-3, £14.40) is a guide to micro networking and communications. The author was a co-developer of the CommuniTree BBS software. This differs from most BBS systems in supporting conferences, an idea originating with Murray Turoff at the New Jersey Institute of Technology — see **The Network Nation** by Starr Roxanne Hiltz & Murray Turoff (Addison-Wesley, 0-201-03141-8, £34.95) — and now operating as the international EIES network (still based at NJIT).

There is one publicly accessible CommuniTree host in the UK: have your computer and modem call the Honey Tree on 0874 711 174 (300 baud).

Incidentally, for any Commodore users interested in setting up a BBS, there is host software available for both the

Amiga (BBS-PCI, Micro-Systems Software, £99.95) and the C64 (BBS64, Steve Punter, £89.99).

Dear AUI

Please could you help me? After long thinking I made a final decision and bought an Amiga 500 at the PCW Show.

My problem isn't really a problem, I need some information. In the Commodore Village there was a man demonstrating Defender, behind him there was another computer (an Amiga 500) which had a demo running. This was music playing and a cat walking in a square which was moving up, down, side to side and forward and backwards. Please could you send me the name of the demo and the address where I can get it from (and price).

Also at the moment I am using a friends monitor and he will want it back soon. What resolutions can I use, using a TV with modulator or using the TV's RGB computer display (the TV is a Hitachi 14" colour portable code CTV 1444).

Thank you for your help,

Ian B McNamara

P.S. Your Mag is fab!

Dear Ian

El Gatto is an animation demo by Blair-Sullivan Computer Graphics. It is in the Amiga library of the Independent Commodore Products User Group (ICPUG). Note that in a 512K Amiga this animation is truncated: to see it in full you need memory expansion installed.

Using a TV with a modulator all four Amiga resolutions (320 x 256, 320 x 512, 640 x 256, 640 x 512) remain available (unlike an Atari ST), but the picture quality will be noticeably poorer than when using a monitor. You will almost certainly have to go into Preferences and alter Text from 80 characters per line down to 60 so that you can read text displayed on a TV.

In answering Michael J Lewis's letter last issue I wrote: "Amiga Basic does not support the IFF standard, so DeluxePaint pictures cannot be loaded into a Basic program".

This turns out not to be strictly true. With considerable programming effort IFF ILBM pic files can be loaded into a Basic program. There are a variety of example programs by Carolyn Scheppner in the BasicDemos drawer on the Amiga Basic disk.

These programs were not on the original Basic disk that came with the A1000 and there is no mention of them in the Manual, which is why I was unaware of their existence. They are well commented, and anyone wanting to write Basic programs that use images created with DeluxePaint (or other graphics programs) should print out listings, study them, and incorporate the required parts into their own programs.

Dear AUI

I am glad to enclose a P.O. for £9 and a Subscription Form for the next 6 issues of "Commodore Business and Amiga User".

As a new owner of the Amiga 500 and 1081 Monitor I feel the need for a good Magazine offering News and Reviews and Technical Advice and short listings of Amiga Basic to help make the best of the Amiga's wonderful graphics and amazing range of colours.

Amiga Basic offers a well-tuned range of commands but the Manual is very short of examples, which are easier to understand than a multitude of arbitrary mnemonics like "colour-id" and so on. It is much easier to learn how to program from typing in a Utility or a Graphics program of Game of some kind. Amiga Basic offers a structured method of programming but also, it retains a mixture of GOSUB and GOTO's along with the self-contained but confusingly named SUB procedures.

My first attempts at programming ran into one or two small problems — first, the SLEEP command didn't suspend operation of the program, it just went straight through each time, so I had to use a key-press detect with a WHILE WEND loop or an IF THEN GOTO pause: loop back to a label.

One of the books I was given is full of very blatant programming errors — a chap called Spanik in "Presenting the Amiga" has examples such as:-

"Circle drawing:" and "Point forward:" — used as Labels and, of course, the Basic Interpreter puts these Reserved words into capitals as it should and then gives a Syntax Error. He must have written the book without having an Amiga at hand!

To save buying another Printer I am linking this CPC6128 and the Amiga to the same Epson LX80, which does a good job, with a two-way switching box device. At present I'm in rather a muddle about how to arrange the systems near enough together and shift the furniture and so on.

I have yet to test the next step I have taken: I have copied the Preference File on to Dpaint Disk with the Printer settings as I think they should be — i.e. Epson, Parallel Printer, Narrow Tractor, and also set the Graphics options to Gray Scale and so on. I have discovered that when the CLI prompt comes up after the initial loading of Dpaint, it is possible to type in — Preferences and get it all(?) loaded. Then the next CLI prompt will accept the usual — Dpaint — command and load the program as normal. Is this the correct procedure?

Amiga owners are still rather few and far between and when you get stuck — that's the time you most feel the need for a good Magazine. The new ST UPDATE is a very good magazine and I would like to see a similar advanced and

readable coverage for the Amiga 500.

Yours sincerely,

John Gray

P.S. Question: How do I get the PRINT option in DeLuxePaint to do a Graphics Dump to my Epson LX80 — so far all that has happened is that the Epson went mad and printed out the fastest page of nonsense characters I've ever seen it do — not the gray scale picture I was hoping for!

Dear John

To obtain more examples of Amiga Basic programs than the very few in the manual, print out listings of the programs in the BasicDemos drawer. Open the BasicDemos drawer to see what the programs are called, load Basic, then load a program (remembering to type in BASICDEMOS/in front of the program name). List it to the printer with the LLIST command.

Christian Spanik wrote *Presenting the Amiga* during the Winter of 1985/86 using a pre-release version of Amiga Basic. I do not have the original German version of the book, but think that "Circle drawing" and "Point forward" appear as labels in English because the translator was ignorant of Amiga Basic and tried to 'improve' the original labels in the translation.

The best book on Amiga Basic is *Advanced Amiga Basic* by Tom R Halfhill & Charles Brannon (Compute! Publications, 0-87455-045-9, £14.95).

We do not intend to follow too closely in the footsteps of *ST Update*, which was recently sold by Sunshine Publications to Focus Magazines. The new owners have effectively closed it down, by amalgamating it into *Your Computer*.

Since the *DeluxePaint* disk is uncopiable I regard it as too precious to risk copying Preferences onto it. I use my standard Preferences (set for my printer) by loading *DeluxePaint* from the CLI as follows: Boot with your normal Workbench disk. Open a CLI from the Workbench (N.B. not by aborting the load of Workbench with <CTRL>D). Enter CD? and, after the command has loaded, put the *dPaint* disk in the drive, then enter DF0: at the DIR: prompt. (If you have a second drive, just put *DeluxePaint* in it and enter CD DF1:). Finally, enter DPAINT.

Should you ever want to copy Preferences, use the following command from the CLI:

```
COPY WORKBENCH: DEVS/SYSTEM-
CONFIGURATION TO <Your New Disk
Volume Name>: DEVS/SYSTEM-
CONFIGURATION. This works because
everything saved in Preferences resides
in the system-configuration file.
```

Dear AUI

We have recently bought an Amiga A1000 and would like to use it for business purposes as and when the software becomes available but we have

a problem. We are unable to use a £ sign as the Amiga only has a \$ sign on the keyboard and unfortunately in our business a £ sign is of great importance to us. Is it, therefore, possible to have the dollar sign key adapted to print the pound sign instead, or is there any other way to give us this function?

We would obviously prefer the adjustment to the keyboard rather than the software option, but any information you could give us, i.e. Who, Where and Cost etc. would be greatly appreciated.

We are regular avid readers of your magazine and feel sure that you are the best people to help us in our present dilemma and we look forward to your reply.

Yours faithfully

Tony Emson

Dear Tony

You will be happy to learn that you do not need to adapt your keyboard.

The Amiga's character set includes a £ sign. To see it, enter <ALT> L. An ASCII value of 163 is used by programmers who want their software to display £ onscreen.

Most printers sold in the UK can print a £ sign. It occurs at ASCII 156 in the IBM Character Graphics Set 2 (e.g. using a Commodore MPS1000 with DIP switches 1-1 and 1-6 on).

The printer drivers in the Amiga system software handle the translation of ASCII values from what is used by the Amiga to what is used by the printer selected in Preferences so, from Basic, LPRINT CHR\$(163) will print a £ sign or, from the CLI,
copy * to prt: <RETURN>
<ALT> L <RETURN>
<CTL> <backslash>

The first line causes each line subsequently typed in the CLI to be sent to the printer. The final <CTL> backslash (the key next to BACK SPACE) stops typing from being sent to the printer and returns the normal CLI prompt.

If you want a standard British keyboard layout (with the £ sign on shifted 3), edit the file 's/startup-sequence' to replace SETMAPUSA1 with SETMAP GB. This also produces two other changes: the at sign (shifted 2) and the quotation mark (next to <RETURN>) are swapped around, and the hash sign replaces the apostrophe on the key next to <RETURN>. (You still have an apostrophe on the top left key.) No one has bothered to produce new keytops for these changes, but you could doubtless make your own sticky labels and put them on the front slopes of the three affected keys.

Regardless of which keymap is set by your 'startup-sequence' as your default, you can always alter the current keymap from the CLI by entering SETMAP <keymap id>. The various national keyboard layouts are shown in Appendix C of the A500 manual.

DYNAMIC DRUMS

Giulio Zicchi beats the drum for a new Amiga percussion package

Dynamic Drums will turn your Amiga into a professional drum machine. Or so New Wave Software would have us believe in the manual accompanying this package.

Well, I can't quite see Phil Collins using it to write his next album but for the rest of us it comes pretty close. Dynamic Drums arrives on two disks and with a short (ten page) manual. Double clicking on the icon from Workbench gets us up and running, presenting us with the main screen and a requester to load a sample drum kit. Quite a choice to be had here, ranging from rock, through funk and even a NeoCountry kit, whatever that is!

The main screen is divided into three sections; the Drum Keypad Window, the Song Window and the Pattern Window. Turning first to the Drum Keypad Window, we see an enlarged representation of the Amiga numeric keypad with a different sampled sound assigned to each key. At this stage the manual advises us to 'press the keys and play the drums'.

Having tried out the various sounds manually we have the option to start entering patterns into the pattern memory or loading one of the many demonstration patterns supplied on disk.

Dynamic Drums is capable of storing up to ten patterns at a time in a memory and combining them to

make a complete song. Entering notes is as easy as pressing a function key to start Record mode and playing along in real time to the metronome beat. If your ability isn't up to this then a quantize function is provided for error correction. Alternatively, you can enter the individual beats in the pattern window using the mouse, although I found this a frustrating experience due to the miniature size of the dots in the graphic display window.

Time signature, quantize and tempo functions are all easily changed with a simple click on the left mouse button or a press of the relevant function key.

Macro songs

Once we are satisfied with the pattern(s) we have recorded we can turn to the Song Window which allows us to combine the patterns together. Using a handy form of shorthand enables us to create quite lengthy songs, e.g. entering 3a4b in the song window would play pattern 'A' three times followed by pattern 'B' played four times. A nice touch is the implementation of 'macro songs' labelled X, Y and Z. Entering the example above in any of the macro boxes and then entering 'X' in the main song box will cause a 'sub-routine' jump to the relevant pattern combination. Handy for repetitive sections.

Okay then, we've composed our patterns and combined them to make our song but we'd like the hi-hat to be a little less obtrusive in this particular song. Hidden behind the Drum Keypad Window is the Drum Control Window. A click on the depth gadget reveals it and allows us to change the relevant volume and tuning settings of each individual sample currently in memory. It is also possible to assign the sounds to any of the four sound channels of the Amiga.

My only complaint about what is otherwise an excellent package is the so-called Midi implementation. Given the scope of MIDI and its capabilities I was disappointed to find that the only concession made was the ability to turn MIDI on or MIDI off. The manual explains that this will allow us to synchronize Dynamic Drums to the clock from an external device such as a sequencer or drum machine but doesn't even tell us which device number we are or how the samples will be triggered — a regrettable shortcoming. This aside, Dynamic Drums is a very nice package indeed, due in no small part to the quality and quantity of the samples provided on disk and the comprehensive control the user is given over those sounds. A compulsory addition to anybody's software collection.

G.Z.

New Wave Software

TEST DRIVE

Electronic Arts

Can there be anyone who's never dreamed about slipping themselves into the driving seat of one of the meanest sports cars imaginable, and letting rip without a care for any other road users? The arcade game *Out Run* made that dream come true for many, but with the price of the machine running into many thousands of pounds, and no Amiga conversion planned, your dream might never come true. That is, unless you take this latest game from Electronic Arts for a test drive.

You've just made your first million from your software company, and decide to see what's on offer down at the local showroom. Exciting the salesman with wads of money, you are offered a test drive in any of the five sports cars.

To start with, you're presented with a superb side view of a Porsche 911 Turbo. Below is a panel displaying information on the car such as approximate price, acceleration, top speed etc. Moving the joystick scrolls the other choices onto the screen, with their respective specifications. The choice is between the Porsche 911 Turbo, a Ferrari Testarossa, a Lotus Turbo Esprit, a Lamborghini Countach, and a Chevy Corvette.

Each car is brilliantly drawn, and gives you a great urge to get in and get going. When the car has been selected, the window or the whole door opens to show the cool driver who gives you a quick flash of his pearly teeth before driving off.

The route you've chosen for the test drive is along a dangerous road on the side of a mountain, as seen in the film *The Italian Job*. The controls of your car have been simplified to an arcade-style level. As well as steering, you control the accelerator, brakes, and gears. Starting in neutral, the engine must be revved and put into gear. As the car isn't yours, you might as well burn some rubber. Give it some welly and stick it in gear, then hear those tyres screech. Gears can be controlled in one of two ways, either the conventional up/down, or mimicking the gearstick movement.

Taking a look over the detailed dash-board, you see the steep mountain on the right of the road, and a sheer drop on the left. *Test Drive* is from America, so it helps to drive on the right most of the time. The graphics are understandably not as good in this part when compared to the stills of the

JUMPDISK - 1987

During the past twelve months JUMPDISK has published many excellent games, utilities and business programmes. Add these to tutorials, reviews, hints and tips, letters and new items and you have the world's No. 1 selling magazine on a disk for the Amiga. The festive Christmas and 17th consecutive monthly issues continues the trend.

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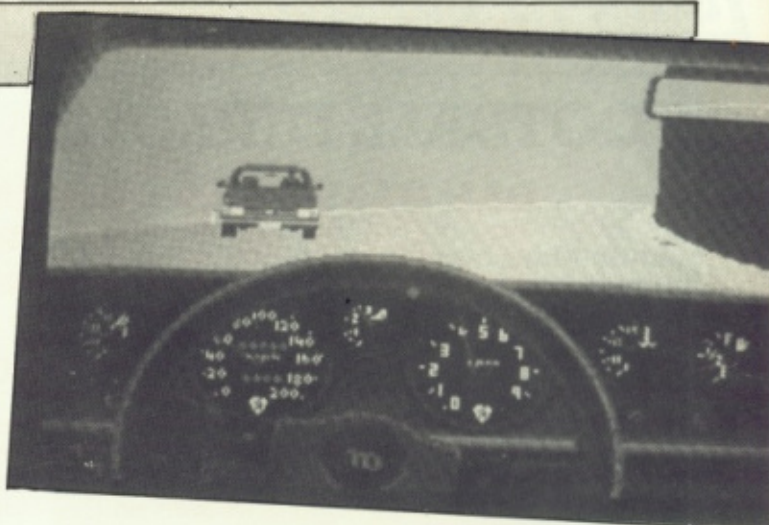


cars. On-coming cars appear with realistic speed, but jump large steps at a time, slightly spoiling the 3D effect. The road bends, dips and rises, but this too is rather jerky sometimes. A lot of graphics are being moved here, but I think it could be smoother if Accolade (the programmers) try hard enough, though the overall effect is very good.

To go with the cars, there are vans, trucks, potholes and water slicks to make life harder. Perhaps the biggest hazard comes in the form of the highway patrol police. They set up radar traps and use them to clock your speed. As the speed limit is usually about 55 mph, and the cars all do at least 150 mph, you're in for a bit of hassle. An advanced warning comes in the shape of the LEDs in your car. Soon after the LEDs flash, you'll see a police car in your rear-view mirror. Bottle-jobs will stop and get a ticket, but smoothies can out run the police.

There are five stages on the way back to the showroom. Between each is a gas station, where you get a progress report and some more great graphics. Each level gets harder to drive; bends get tighter and the road becomes more crowded. If you reach the end without writing off the car, you get to keep it. (Lucky you!)

I thought it a little strange that in some parts, there's a lot of detail, such as the car selection, and the odd bird plop on the windscreen, but not so in others, like the crash sequence which is the



same whether you over-rev the engine, fall off the edge of the cliff, or crash into the mountain-side.

Some more variations in the game would not have gone amiss; the scenery stays the same throughout the game. Despite this, the game is excellent to play. Well above average engine sounds and skids combine with realistic graphic effects of the car skidding to give a real feeling of speed. Played in a swivel-chair, the game becomes even more fun as you sub-consciously turn with the car!

Test Drive could be better, but as it is, it's a great game that I recommend to all frustrated C5 drivers.

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T.H.

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EAGLES NEST

Pandora

The name "Eagles Nest" will be familiar to C64 gamers, as it was a hit last summer on 8-bit micros. Now Amiga owners have the chance of slaughtering loads of soldiers and becoming a war-time hero.

The Eagles Nest is a strategically placed castle which has been taken over by the enemy, who are using it as a base. Unless this fortress is destroyed, the enemy will put their counter offensive into action which could seriously affect the war's outcome. Three top soldiers were assigned the job of blowing it up, but were captured before they could accomplish their mission. Before their capture, they managed to set up a system of explosives around the castle, which only needs to be detonated. It's up to you to infiltrate the Eagles Nest, rescue your colleagues, and detonate the explosives.

It's obvious from the start that this is a Gauntlet variant. The view is from directly above, and the walls of the fortress form a maze of rooms and passages. There are two castles to choose from, and each is made up of a number of floors. On each floor there's a detonator to be found. Activating all of these will complete the first mission. Later missions involve rescuing the captives.

As your soldier walks around the castle, the screen scrolls not very smoothly in four directions, although it only scrolls when you reach the edge of the screen. This works OK, but a constant pixel scroll would have been easier on the eyes. Crowds of soldiers guard the Eagles Nest, and take two shots from your rifle before passing away. These soldiers don't shoot at you, but drain your stamina if they touch you. In much the same fashion as Gauntlet, they're not intelligent, but are attracted to you, almost magnetically. Keys, ammo, food, medical supplies and chests can be found to keep you going. Some chests contain jewels, some are empty, and some contain dynamite. Accidentally shoot some dynamite and you're a gonna. Extra points can also be earned from killing officers and collecting treasures.

To help you with the first floor of the first castle, a map is supplied, but only shows the positions of the rooms, the whereabouts of supplies and the detonator has to be discovered by exploration.

Eagles Nest's graphics are attractive and detailed in places, but are a little lacking in colour. The scrolling and animation are a bit

below the standards we expect from the Amiga. Its music is atmospheric, but most of the game is played in silence. What in-game effects there are, are good.



I didn't get as excited over the 64 version as some did, but Pandora have done a good job in converting the game. Gauntlet fans will probably want to wait for the real thing, but this will prove an enjoyable game to have in your collection. It's hard to say how it could be improved (apart from the scrolling), but it just didn't have that something to keep my attention after a few sessions of play. A good game that should be considered when buying your next piece of Amiga fast moving fun.

B.V.

Price: 19.95

Space Ranger

Mastertronic

Mastertronic, the budget software kings continue their excellent value range of Amiga games with Space Ranger, which is another of their Arcadia Amiga coin-op games.

Now it so happens that an evil alien race known as the Morgdianians have paid a visit to our good Earth. These aliens are the most mean, vicious and nasty race in the universe, and get their kicks from inducing pain and suffering on "inferior life forms". This is bad news for all the cute creatures that have evolved on earth, who haven't needed to develop their defences before now. They are easy prey for the aliens, and only you can come to the rescue. You're an elite space ranger, and wield a well aimed gun. Equipped with your anti-gravity armour, laser gun and a pocket-full of nets, it's up to you to clean up the Earth and rid it of these evil menaces.

Space Ranger takes the Defender theme, and develops it into a far superior game. A multitude of highly imaginative, friendly looking critters (as they are called), innocently go about their daily business. Most are ground-based, and run up and down or leap into the

There are three different backgrounds which change with the levels

air. Others swoop around the sky, merrily tweeting and quacking. All this is set against a three speed parallax scrolling background of mountains and forests.

"Ah, how pleasant!" you're thinking, but here come those no-good aliens to put a downer on things. A mother ship hovers in wait for any unsuspecting critters to wander beneath it. It then turns on a tractor beam which pulls them into the craft. That's not all, there's also a variety of aliens who will catch the critters and take them to the ship. These include rhinos, goblins, big green monsters, and wierd walking hands. A well aimed shot will kill these, freeing the poor little cuties. On the other hand, a poorly aimed shower of laser fire could easily result in a critter being shot.

When all the critters have been rescued, captured or killed, you're awarded a bonus for all that you saved, or are fined 5000 points if you fail to rescue any. There are three different backgrounds which change with the levels. The first is a Road Runner-style rocky desert, the second is a very nice snowy winter scene,

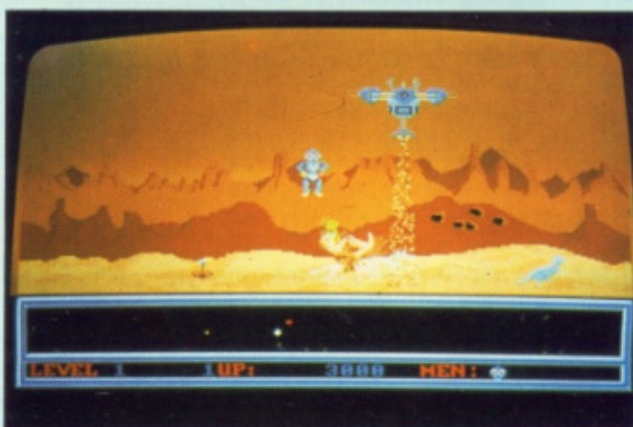
complete with Christmas trees, and the third is set in a thick jungle. Although there are only three backgrounds, each level gets harder and introduces new characters.

Space Ranger's appeal is mainly in its cuteness. The baddies look bad, and the goodies look really terrific. The effective backgrounds make the game a pleasure to watch. A small niggle is that the foreground scrolling would benefit from being a little smoother.

Defender variants are nothing new, but this is the best I've seen. For once, a budget game (£9.99) has graphics and sound of full price quality; suitable and effective sampled sounds can be heard throughout the game. Space Ranger is also fun to play, and whilst not stunning, is an example to be followed by other budget companies. Definitely one of the best cheapies around. Highly recommended.

T.H.

Price: £9.99

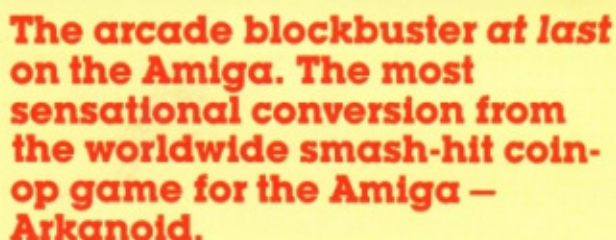


ROUND 6

PLEASE SELECT
START ROUND

1UP
00
HIGH SCORE
50000

TAITO



Through Amiga User International Magazine you can play the enhanced European version of Discovery Software's terrific new game about which our review says

"Apart from the Discovery logo and option to start on any of the first 20 levels, it may as well be straight out of the coin-op!"

As a special introductory offer from Amiga User International Magazine you can get Arkanoid for £19.95 – £5 off the recommended retail price – an amazing bargain! As our review says (again!) "If you want a game that will become an Amiga classic, go and buy this, you won't be disappointed."

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PROMISE

The majority of 'serious' users of microcomputers will own and use a word-processing package of one description or another. For many, a simple package may well be quite sufficient. For those of us who often create large documents the tedium of checking for spelling mistakes and punctuation errors can be eased by the use of spelling checkers, of which 'PROMISE' is one of the latest. Created by 'The Other Guys' it is designed to run on an AMIGA with at least 512k of storage. It comes supplied on a single 3.5" disk together with a clearly written twenty page booklet of operating instructions. There are really two major components to PROMISE. They are a spelling and punctuation checker and a spelling helper. The main function of the package is performed by the checker, with the helper giving user access to the dictionary to look up words while using a word processor. Most document formats appear to be supported, including Textcraft 1.0, FTEXT IFF files (as used by later versions of Textcraft), and both formatted and unformatted ASCII files. Scribble and Notepad both use formatted ASCII files whilst ED, EMACS, and EDIT use unformatted. Scribble's Dot commands pose no problems once the checker has been told to ignore the first occurrence. It is not necessary for the user to tell PROMISE which format the document is in as the package detects the format automatically. The supplied dictionary contains 95,000 words and may be added to by building your own user-defined 'Custom Dictionaries'.

The spelling checker loads the main dictionary into memory at startup and creates a null custom dictionary by default. Once the main dictionary and index are loaded the user may then elect to load the custom ones. More than one custom dictionary may be maintained, so for example a student may keep specialist engineering terms in one and chemistry terms in another. This split by function could prove to be a very useful feature of the tool. The punctuation checking function

THE SPELLCHECKER

Robtek brings in an interesting addition to Amiga word processing

ensures that simple rules are obeyed such as starting sentences with a capital letter and finishing them with a full-stop. It also ensures that punctuation marks are either followed by a space or are at the end of a line.

There are three methods by which PROMISE may be invoked. Inserting the disk in df0: at the 'Insert Workbench' prompt, double clicking its icon or from a CLI window by entering 'RUN PROMISE: SPELL-CHECK'. Problems can occur if you have less than 360k of free memory available if you invoke it from within workbench.

PROMISE is window driven and makes good use of the Amiga's window/gadget facilities. The loading and saving of files such as custom dictionaries and documents is menu driven from within directory windows. These are used to display and select disk files, enter filenames and to change disk drives. To check a document it is first necessary to click the 'select input file' gadget, this opens a directory window from which you may select the file to be checked. Once you have found the correct file you start the checker with the 'start spelling check' gadget. If PROMISE finds a word that is not in one of its dictionaries it displays it in a 'text display box' and offers you a number of options. These are: correct it, ignore it this occurrence, ignore all occurrences throughout the document, or to add it to a custom dictionary. If you believe the spelling of the word to be wrong but don't really know how to spell it then you can invoke the spelling helper which is accessible either from the spelling checker or stand-alone. It appears in its own window and is also gadget driven. To find the correct spelling you need only provide the letters you know. The missing portions can be substituted with wild-card characters, '?' for unknown letters and '*' for an unknown number of letters. When invoked from the checker the system attempts to supply a reasonable search argument. There is a very clear description of how to use the wild-card technique in the instruction booklet. It is a good idea to try this

out before using the checker as the attempt made by the checker to define a pattern to locate is not always what the user may really want. I noticed that it was not very good at locating words ending in apostrophes. It is a simple matter to correct the supplied letter pattern though, and once this is done the word can be found (if it is in the dictionary).

Most users will be content to maintain their custom dictionaries by loading at the start of a checking session and resaving with the new words learned in that session, but it is possible to edit the custom dictionaries using any editor or word processor that can read an ASCII file. If a user wishes to combine different custom dictionaries it is a simple matter of invoking the checker and loading the dictionaries in turn. These can then be saved to produce a combined dictionary which can be loaded in one operation from now on. The manual loading of custom dictionaries is both a strength and a weakness of this package. It takes a little effort to load the desired custom dictionaries but this can give a very versatile dictionary structure to the skilled user.

PROMISE is a very helpful tool for users of word processors which do not contain a spelling checker. It is claimed that it can check over a thousand words per minute. It certainly seems fast in practice. The speed is probably derived from the fact that the entire dictionary is loaded into memory before any checking is done. It does mean, however, that there is a performance trade off as the program takes a while to load and get started but runs rapidly once in memory. Even users of Scribble which has its own built in dictionary of over 40,000 words may be interested in PROMISE because of its larger vocabulary and additional punctuation checker function. Given the very user friendly implementation of PROMISE, anyone who is looking for a good, expandable, and above all else, easy to use document checking facility should check this one out!

Price: £39.95

Contact: Robtek Ltd, Unit 4, Isleworth Business Complex, St Johns Road, Isleworth, Middx TW7 6NL.

Tel: 01- 847 4457.

LATTICE C 4.0

Richard Franklin, longtime Commodore computing expert, takes a close look at a vital tool for any serious Amiga programmer



In early 1987, Lattice Inc. produced an upgrade of their popular C compiler for the Amiga range of computers. This upgrade was version 3.10 and as far as I was concerned, they had gone as far as they could with the product. But I was wrong, Lattice Inc. have now produced a further upgrade called version 4.0.

This incorporates the added functions and improvements of version 3.10 with some other goodies to improve speed (compile and execute) and reduce the size of the final executable file.

The first thing I noticed when I removed the manual and disks from the packaging was the presence of not the two disks as with Lattice V3.10 but FOUR disks. Disk one and two directly correspond to their counterparts in V3.10 and I will look at them first. Disks three and four are extras but also have lots of useful things on.

The manual itself has been re-written and is well presented and easy to follow. Full explanations of the V3.10 added functions are included as well as simple examples for the beginner to get to grips with the package.

As with V3.10 when booting up, the startup-sequence requires the presence of disk two (disk one is the bootable disk). Apart from a bit of added colour in the sequence, everything seemed normal but then PopCLI and ConMan were booted up as well. For those of you unfamiliar with these two utilities, I will tell you what they do.

PopCLI

This program is a short (about 4K) public domain utility that sits in the background checking for keyboard or mouse action. If no action occurs within a specified time limit, PopCLI blanks the screen until some action is detected (such as moving the mouse). Also, by pressing Left Amiga/Escape a new CLI is opened for you whether a CLI exists or not. This is much easier than opening the CLI from workbench or having to type NEWCLI in your current CLI.

ConMan

Another very useful background task that enables line editing from the CLI. It also keeps track of previous commands that can be recalled by pressing the Up and Down cursor keys. Amazingly the executable for this is less than 1K in size.

Now to the contents of the disks themselves. In disk one, examining the C drawer shows several new commands. These are: LC, LC1, LC2, OMD, OML, ASM, and BLINK (nothing unusual there). Also: LCOMPACT (a source/header file compacter), and FD2PRAGMA (more on that later).

LCompact

LCompact compacts a given source or header file so that the compiler can read it much faster (all comments and excess white spaces are removed). Also commonly used compiler directives, such as #define, are tokenised.

Examining disk two showed four drawers:

Source — source code to some of the Lattice run-time support library routines.

Examples — source code to some example programs.

Lib — new indexed library files that are readable by the new version of BLINK (version 7.2 supplied). These have been compiled using the compiler option 'b' (base relative addressing of data).

CompactH — new updated (version 1.2.1) header files. All of these files have been compacted using LCompact to improve compiler time. There is a new drawer in the CompactH drawer which is called 'Proto'. This drawer holds (what Lattice call) the Prototype header files. These header files contain complete declarations of library functions including their parameter types. Also, if enabled (default), each file contains a list of #pragma directives. This is the main, and probably the most useful, addition to the Lattice C compiler.

The #pragma compiler directive has the following syntax:
#pragma libcall <base> <routine>
<offset> <magic>.
e.g. #pragma libcall DOSBase Open
1e 2102

This allows the compiler to override the Amiga lib stub routine to call the Open() routine, instead of pushing the parameters onto the stack then calling the stub routine. Open sets up the registers correctly and then calls the actual Open routine. The compiler can set up the registers required and go directly to the library routine Open(). This method is not any shorter than the original but does improve on execution speed.

The command fd2pragma in the C drawer of disk one creates the #pragma instructions out of the .fd files on the Amiga Extras disk supplied with Workbench 1.2. The proto drawer contains files with #pragma statements for all of the Amiga functions.

Disk three contains just two drawers:

Compiler Headers — the uncompact header files.

Assembler Includes — Full version 1.2.1 assembler include files.

Note: The assembler now supports the syntax used by Metacomco and means that it is now possible to do normal assembler applications development with the Lattice assembler.



Disk four contains library files compiled without option 'b' (base relative data addressing) for programs that can't use that option.

Also included on disk four is an extras drawer containing useful routines and hints at smaller code production.

Other additions to the compiler are that support is now given for short (16 bit) integers and also the implementation of builtin functions for standard string and memory manipulation routines.

The functions available are: strlen, strcmp, strcpy, memset, memcpy, memcopy, and printf. Definitions of these functions in the include file 'strings.h' have been specified as 'builtin'. To go back to the normal functions, the programmer just has to #undef these functions. Also, when an error or warning is reported during compilation, the actual line where the error/warning occurred is printed to the screen with a little arrow underneath showing where in the line the error occurred (Just like Manx). This facility can be disabled.

Apart from the ability of BLINK to read indexed. lib files, there is support for overlays as well. This allows the programmer to generate code that will be loaded only when it is needed and then removed after use. This gives the advantage of more memory for data storage.

An extra bit of information is given at the end of linking. This information is the actual size of the executable file.

One other addition to the runtime support is a replacement routine to c.o (startup code). This replacement is called cback.o and if used rather than c.o in linking will cause the program to become detached from the calling task (CLI). This can only be used if the program opens its own standard output window or does no standard output itself.

Finally, I thought it would be a good idea to check if source files written for V3.1 (I have been using it since May) are compatible with V4.0. I have one major program being developed at the moment and also a general purpose routine for inclusion in it. Both programs compiled without any error but there were a couple of warnings in one of the programs that were not given using V3.10. When I compared the executables with the V3.10 executables, I was very pleased with the reduction in size:

Program	V3.10 size	V4.0 size
1	35984	28332
2	26612	20792

Conclusions:

Lattice C for the Commodore Amiga range of computers has always been a very good product to use. With the improvements in version 4.0 it is even better. The addition of the assembler include files make it a total development package. With the continuing development and improvement of this package by Lattice (and others) it is a very good investment and I would recommend the package to anybody seriously considering writing software for the Amiga.

R.F.

Contact Lattice

Standard £189.95

Developers £299.95

AmigaDOS Manual

The Amiga has one of the most comprehensive Disk Operating Systems that exist in a micro-computer. Normally the user interfaces with the DOS via the Workbench, and does not know that the DOS even exists! When using Workbench the commands that the user has access to are limited to some degree in that only a small number of the commands that DOS can use are implemented. To access these additional commands the user must use the preferences tool and select CLI ON. This will enable you to activate the Command Line Interpreter. This will give you access to a more general type of display, i.e. no icons and also enable you to use the additional commands. One of the things that you could do is modify your startup sequence to automatically set up the date and time, and copy your favourite utilities into the ramdisk for speed.

The AmigaDOS manual is now in its second edition and includes both DOS V1.1 and V1.2. This manual is divided into three parts; the Users Manual, Developers Manual and the Technical Reference Manual. The first section is by far the most important and needs to be read by every Amiga user. It provides the information on how to use the DOS system and goes into the basic operation of the system file structure and device names. Also covered is; how to run commands as background tasks, making use of the multitasking ability of the Amiga, command files, directing command I/O and most useful to the new user an example session. Next comes a section devoted to disk creation and labeling, how to look at the directories, and the use of some of the more commonly used DOS commands.

The next chapter is the AmigaDOS command list. This has all the information on the DOS commands and

the syntax used. This will be the most often used section of the book and goes some way toward justifying the £23 price tag. The commands are presented in a standard way and once you get used to the conventions it is fairly easy to understand, but I found that it took several hours of fiddling about with the commands until the penny dropped on how to use them. Each command is explained in detail, and some commands have examples to demonstrate.

AmigaDOS commands form a sort of high level language on their own, allowing loops IF/THEN and jumps and several other structures that make Amiga/DOS so powerful

One of the most vital things is to be able to create and edit command files. These files hold great power for the user in batch processing and just about anything that needs multiple DOS activity can be automated with the command files. There are two editors available ED and EDIT. ED is the screen editor and EDIT is the line editor. The functions and commands available in each are comprehensive and are fully described. Like any new system it takes a bit of effort to get use to them but the Manual is very well produced and each function is carefully explained. It should be noted that the AmigaDOS commands form a sort of high level language on their own, allowing loops IF/THEN and jumps and several other structures that make AmigaDOS so powerful. A list of error codes and a glossary bring the Users Manual to an end.

The Developers Manual is devoted to the calling of AmigaDOS commands from within a program, and assumes a working knowledge of

"C". It goes into great depth on how to develop a program that will run successfully under AmigaDOS. Also covered is the use of the Amiga Assembler, that is available in the developers pack. This section essentially describes the functions and libraries that have been produced in "C" and how to use them. If you are experienced in the use of "C" then you will find this section very familiar indeed.

The final section, the AmigaDOS Technical Reference is of more general use. It explains the file structure and how the file directory is formed. DISKED is described in detail but it must be noted that this is a function ONLY FOR THOSE WHO KNOW WHAT THEY ARE DOING. Serious and fatal damage can be done to your disk if you go hacking about with Disked. Always use a copy disk for practice!!!

The structure of binary files is described, such files are produced by assemblers and compilers and the various formats are explained. AmigaDOS data structures are also explained, the main functions of which are concerned with I/O and how this interfaces with the rest of the system. Finally there is a section of additional information that explains how to create new disk devices for the Amiga and how to make code run on expanded systems.

The book is a bit of a mixture, designed for everyone from the raw beginner, to the developer. It must be said that the book is very well presented throughout and is a MUST for any Amiga user. Many will find that the power offered by the CLI is even greater than that obtainable using icons and mice.

A.E.

Price: £23.

Contact: Bantam Books.

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Included is a powerful spreadsheet module (Analyze!) that is as useful in the home as in the office. Whether for your personal budget and check register or your company's accounting and forecasting needs, the versatile pull down menus and keyboard shortcuts make this module easy to use. Its *multicolor 3-D graphs, special macro language and compatibility with*

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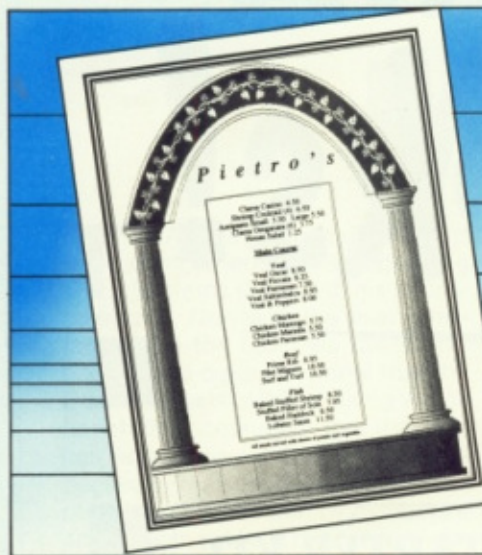
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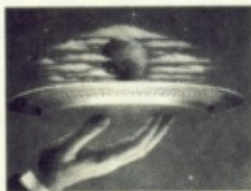
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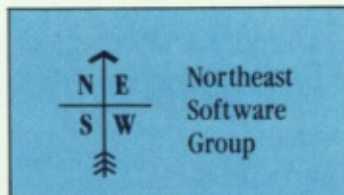
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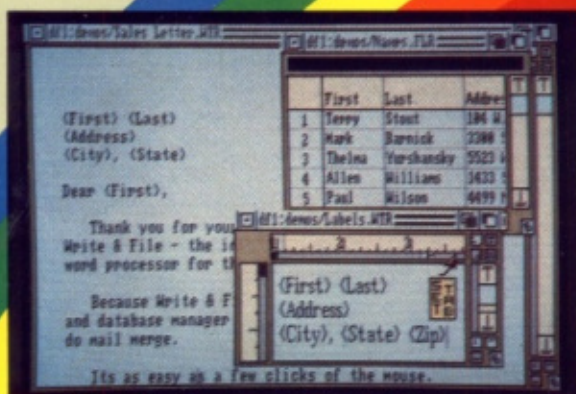
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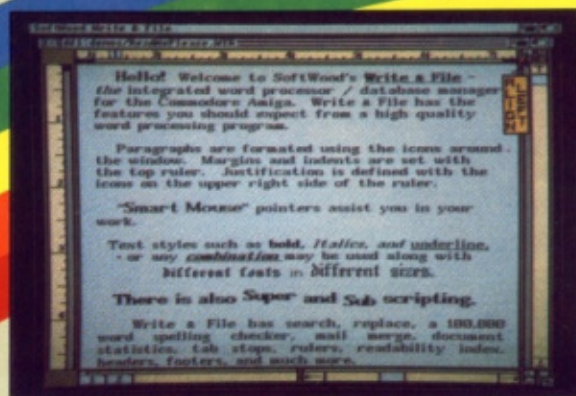
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FIRST STEPS WITH THE AMIGA

It is often commented that programming examples supplied in the Amiga manuals are frequently unusable. We thought therefore that many readers would welcome the opportunity to work through examples that are properly explained and function correctly. So over forthcoming issues of Amiga User International, we shall be providing a series of articles to enable you to take the first steps with your Amiga easily and comfortably. In this the first of the series, Paul Andreas Overaa covers the IDCMP — Intuition Direct Communication Ports.

When you write a computer program it will invariably be necessary for information to be collected from, and at a later stage results delivered back to, a 'real person'. The 'man-machine interface' and its relation to the program and system design process is a current research area for program designers, psychologists, and many others. From this research filter down the things that we take for granted in professional programs today... windows, icons and gadgets, use of the mouse, pull down menus etc.

At the highest level the Amiga uses the Intuition interface which supports a whole host of these 'user friendly' items. The user 'communicates' with the computer using the Intuition objects (gadgets, requests, menus etc.) together with input devices such as the keyboard and mouse. Intuition watches this flow of information, uses what it can and discards or passes on the remainder to any interested parties. To write programs that interface with Intuition it is therefore necessary to know, in a programming sense, how to ask Intuition to send you

information. It is equally important to understand how to receive, and interpret the 'intui-messages' that Intuition sends back to your program.

From a programmer's viewpoint the Amiga IS complex. Many programmers coming from a background of Basic and the 8 bit machines based on the 6502 or Z80 type processor will look at the manuals and run. For a start it is absolutely essential for the potential Amiga programmer to understand the C language — almost every book you read concerning the Amiga will ASSUME you are fluent in this language. You need the manuals (or access to them), some good C books (and I recommend the classic Kernighan and Ritchie one entitled 'The C Programming Language'), and sufficient time to do the machine justice.

I took possession of an A2000 only a short time ago and have now recovered from the initial shock of seeing the Reference Manuals. Because the machine is new to me I am, in some respects, in the same position as many other AUI readers. I hope that I can help

overcome some of the initial problems that you may encounter.

This month I am going to look at just one of the ways in which your program can communicate with Intuition — the Intuition Direct Communications Ports, or IDCMP's. I make a start by giving a simple 'shell program' that opens a window, sets up some gadgets and then monitors an IDCMP to obtain messages from Intuition. So that you can see what Intuition is doing 'behind the scenes' equivalent text messages are sent back to the CLI window telling you what 'intui-messages' are being received by the program. You can use the overall ideas to see the effect of setting various IDCMP and window flags. I'm not going to explain much of the code from a syntax viewpoint (you can find all that stuff in any good C book). What follows are some tips that I've discovered over the last few weeks — they are points that you won't find spelt out for you in the manuals.

Once you become familiar with the way structures are used to describe screen display objects you will find your

programs will usually contain large chunks of structure definitions. My first piece of advice is ISOLATE THEM, i.e., keep the structures for gadgets, borders and text etc., in a separate file — in this instance I include it as 'structures.h' at compile time but for larger programs it would obviously be better to compile it separately. In general this approach has much to commend it — you will find you can eliminate or greatly reduce the I/O dependence of your main program modules.

It is absolutely essential that you get into the habit of checking ALL operating system calls that allocate resources, to ensure that no problems have occurred. Your programs must deallocate such resources on exit... so be careful with your error handling! I strongly advise you to include explicit trace information within your programs (at least within the development versions). I've done this in this month's program and by using the DEBUG flag I can switch the trace/error information on or off. When things go wrong you will NEED ALL THE HELP YOU CAN GET so, for your own peace of mind, become a pessimist.

Having dealt with those two general points let me briefly describe the code for the example program. It starts with a few 'include' directives so that the appropriate header files are included. These contain all the structure/flag definitions etc. that are used by both your program and Intuition. Following that are some constant definitions and some global declarations, including the IntuitionBase and GfxBase variables.

The main() routine begins with a call to a function that opens the Intuition and graphics libraries and then opens a window. I've seen several books that provide extremely dubious coding for this type of initialization. The important point however is this...if at any time problems occur, everything that has been opened MUST be closed before the program terminates. I'm still not particularly happy with my begin_block() routine but to be honest I've seen worse!

With a multi-process O/S one does not use wait loops since it ties up the processor unnecessarily and thus degrades the overall performance of the system. Instead we put our program to sleep (by using the Amiga Wait() function). Our program therefore does not use any processor time until something wakes it up. In the case of this month's program we wait until a signal bit tells us that one or more messages have arrived. For each message that arrives it is necessary to get a pointer to the intuit-message (via the GetMsg() function), copy the required data from the structure, then tell Intuition that we've finished with the message by using the ReplyMsg() function. The example program only takes two pieces

of information from the message...its class and the address of the Intuition object. The latter item is needed because if we get a message saying a gadget has been hit then we need the gadget's address to get the gadget identification number.

I have specific reasons for believing that the nested post-test repetition forms found in the main() function are to be preferred to the pre-test 'while' forms you will find in most published examples of how to handle the IDCMP message collection. If the post-test forms worry you please feel free to translate them to equivalent 'while' forms.

Our program simply waits for Intuition to send it a message. If the message is of class = CLOSEWINDOW then the program terminates after closing the window and the libraries. If the message is of some other kind then it is handled by the switch statement. We get simple messages back at the CLI when disks are inserted and removed. If you select one of the three gadgets Intuition sends our program a message of class GADGETUP and in this case we pass the address of the Intuition 'object' to a routine called gadget_hit() which also reports back via the CLI that a particular gadget is now on, or off as the case may be.

We tell Intuition what messages we want to receive by setting various 'flags' in the NewWindow structure. If you look at the IDCMP flags in my example you will see that I've asked to be told when

disks are inserted and removed, when the user clicks on the 'close-window' gadget, and I've set a flag called GADGETUP. In the gadget structures one of the activation flags is TOGGLE-SELECT. When this is selected the gadget 'toggles' between on and off and each time this happens Intuition will send my program a message of class GADGETUP. I've sent window flags that allow a certain amount of resizing, dragging, depth arranging and I've asked for a close gadget to be included.

In general Intuition can be made to give us messages on everything that could happen (as yet though I've not come across a USER_COUGHED flag). The idea of course is to limit the messages to only those things that are of interest to the program.

So there you have it, a simple 'no-frills' example that you should be able to examine in detail without getting too much of a headache. When you have a working version of the program try running copies of it at two or three CLI windows simultaneously. Notice that when you click on a gadget only the CLI running that copy of the program returns a 'gadget on/off' message. If however you remove a disk Intuition will tell ALL of the program copies that a disk has been removed. Once you're over the initial problems (which we all get when working with new machines) you'll soon find that Intuition's facilities are second to none.

P.O.

```

/* ===== */
/* Title:      structures.h                               */
/* Ref:        87/A40/1-1                               */
/* Date:       27th July 1987                            */
/* Programmer: Paul Andreas Overaa                      */
/* ===== */

/* This file contains the structure data for setting up the screen */
/* display. Notice that our NewWindow structure contains a pointer */
/* to a gadget list, that the gadgets are 'chained' together (with */
/* each one containing a pointer to the next) and that i am being */
/* consistent with regard to the naming of those data structures */
/* associated with a particular gadget, i.e. Gadget01, Intuitext01 */
/* BorderVector01, Border01 all relate to my gadget number 1 etc. */
/* Choose an arrangement like this AND STICK TO IT: it makes these */
/* types of listings easier to follow. Be CAREFUL when setting up */
/* this stuff. When Intuition opens our window it uses the Gadget */
/* pointer in the NewWindow structure to find our list of gadgets. */
/* If Intuition finds a problem as it tries to set up the gadgets */
/* it may well decide that it cannot open your window. If you get */
/* a 'cannot open window' diagnostic in the program it could well */
/* be that you've made one or more errors in these definitions. */
/* ===== */

```


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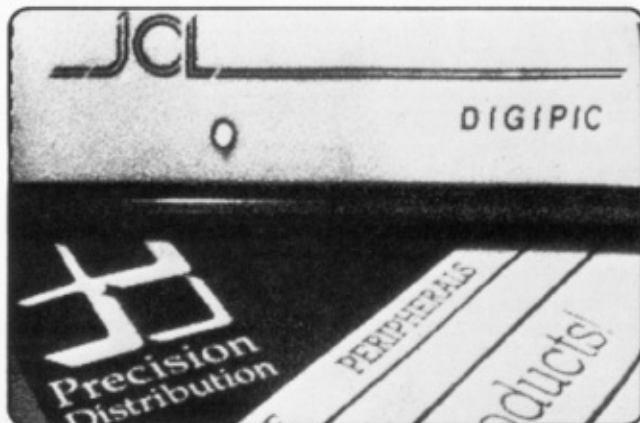


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```

USHORT BorderVector03[] = {0,0,62,0,62,18,0,18,0,0};
struct Border Border03 = {
    -2,-1,          /* border XY origin */
    3,0,JAM1,       /* front pen, back pen, drawmode */
    5,              /* count of the XY vectors in our BorderVector[] */
    BorderVector03, /* pointer to the vectors */
    NULL           /* next border */
};

struct IntuiText IText03 = {
    3,0,JAM2,       /* front/back text pens, drawmode */
    24,6,          /* XY origin */
    NULL,          /* font pointer */
    "3",           /* pointer to text */
    NULL           /* next IntuiText structure */
};

struct Gadget Gadget03 = {
    NULL,          /* next gadget */
    187,64,        /* origin XY of hit box */
    59,17,         /* width and height of hit box */
    GADGHCMP,      /* gadget flags */
    RELVERIFY+TOGGLESELECT, /* activation flags */
    BOOLGADGET,    /* gadget type */
    (APTR)&Border03, /* border to be rendered */
    NULL,
    &IText03,      /* IntuiText pointer */
    0,
    NULL,
    3,             /* user data (av gadget number) */
    NULL
};

/* ----- */
USHORT BorderVector02[] = {0,0,62,0,62,18,0,18,0,0};
struct Border Border02 = {
    -2,-1,          /* border XY origin */
    3,0,JAM1,       /* front pen, back pen, drawmode */
    5,              /* count of the XY vectors in our BorderVector[] */
    BorderVector02, /* pointer to the vectors */
    NULL           /* next border */
};

struct IntuiText IText02 = {
    3,0,JAM2,       /* front/back text pens, drawmode */
    24,6,          /* XY origin */
    NULL,          /* font pointer */
    "2",           /* pointer to text */
    NULL           /* next IntuiText structure */
};

struct Gadget Gadget02 = {
    &Gadget03,      /* next gadget */
    112,64,         /* origin XY of hit box */
    59,17,          /* width and height of hit box */
    GADGHCMP,       /* gadget flags */
    RELVERIFY+TOGGLESELECT, /* activation flags */
    BOOLGADGET,     /* gadget type */
    (APTR)&Border02, /* border to be rendered */
    NULL,
    &IText02,       /* IntuiText pointer */
    0,
    NULL,
    2,             /* user data (av gadget number) */
    NULL
};

/* ----- */
USHORT BorderVector01[] = {0,0,62,0,62,18,0,18,0,0};
struct Border Border01 = {
    -2,-1,          /* border XY origin */
    3,0,JAM1,       /* front pen, back pen, drawmode */
    5,              /* count of the XY vectors in our BorderVector[] */
    BorderVector01, /* pointer to the vectors */
    NULL           /* next border */
};

struct IntuiText IText01 = {
    3,0,JAM2,       /* front/back text pens, drawmode */
    25,6,          /* XY origin */
    NULL,          /* font pointer */
    "1",           /* pointer to text */
    NULL           /* next IntuiText structure */
};

struct Gadget Gadget01 = {
    &Gadget02,      /* next gadget */
    37,64,         /* origin XY of hit box */
    59,17,          /* width and height of hit box */
    GADGHCMP,       /* gadget flags */
    RELVERIFY+TOGGLESELECT, /* activation flags */
    BOOLGADGET,     /* gadget type */
    (APTR)&Border01, /* border to be rendered */
    NULL,
    &IText01,       /* IntuiText pointer */
    0,
    NULL,
    1,             /* user data (av gadget number) */
    NULL
};

/* ----- */
struct NewWindow NewWindow = {
    279,55,         /* origin of window relative to top left of the
                    screen */
    296,99,         /* window's width and height */
    0,1,           /* detail and block pens */
    GADGETUP+CLOSEWINDOW+DISKINSERTED+DISKREMOVED, /* IDCMP flags */
    WINDOWSIZE+WINDOWDRAG+WINDOWDEPTH+WINDOWCLOSE+RMBTRAP, /* window
                    flags */
    &Gadget01,      /* start of gadget list */
    NULL,
    "Test Program", /* window's title */
    NULL,
    NULL,
    300,100,        /* minimum width and height of window */
    400,150,        /* maximum width and height of window */
    WRENCHSCREEN    /* destination screen type */
};

/* ===== */
/* Title:      test.c */
/* Ref:        87/A40/1-1 */
/* Date:       27th July 1987 */
/* Programmer: Paul Andreas Overaa */
/* ===== */

#include <exec/types.h>
#include <intuition/intuition.h>
#include <RAM:structures.h>

/* These definitions avoid us having 'magic numbers' in our program */

#define INTUITION_VERSION 0 /*Any versions of these will do at present */
#define GRAPHICS_VERSION 0 /*so we set these to a 'do not care' value */
#define DEBUG 1 /*Let's see error messages during development */

```

CONTINUED ON PAGE 77

'Feud'

Feud is one of Mastertronic's most successful games. Now released on 16 bit Amigas, Andy Moss tries a 16 bit of Wizardry in the garden

I never was much good at gardening. I don't know, put me in a plot of plants and I couldn't tell a geranium from a gerbil. I suppose if you haven't got green fingers, you shouldn't bother. Now let's just say you are a wizard, and that wizardry is the way you make your living. To be any good at it, you need to have an odd spell or two in your book (after all what good is a wiz with no spells, it's like playing a guitar with no strings!) You can make most spells by mixing certain herbs together in your special cauldron from a recipe in the Old Book (a sort of magic users Delia Smith edition) but the problem is finding the blessed things. Herbs just cannot be grown by any old bod, you need skill. So to be a good wizard you need to be a good gardener. Unfortunately, in FEUD you're not. There is this rival wizard, who fancies himself as the local Merlin, and is naturally out to get you. What you have to do is run around the place visiting other peoples gardens and pinching their herbs. When you have collected the necessary amount for your spell you need to

rush back, mix them in your cauldron to make the spells that will do it to him before he does it to you.

I first saw this game on the 64 last year, and it really was very well put together. The Amiga version is just as pretty, with a mixture of terrain from woodland to huts to rivers to mazes and the townsfolk who amble along the road just waiting for you to turn them into zombies so they can hunt out your adversary Leanoric for you.

The main criticism I have, is that the game doesn't use the Amigas excellent scrolling facility, it just jumps from frame to frame, not very satisfactory. There is a distinct lack of sound, apart from the excellent loading screen, and not enough action takes place in between your bouts with Leanoric. A very simple game, yet addictive in parts, but what I hear you ask is the point of it all? Well two points really, one is that you get to be he who must be obeyed if you win, and the other is that you get a crash course on becoming a better gardener!

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Runner-up Acquisition *Taurus Impex*

DESKTOP PUBLISHING

Oskar Winner **Publisher 1000** **Northwest Software**

Publisher brings the highly popular facilities of DTP to the Amiga environment at a very reasonable price

Runner-up Pagesetter *Gold Disk*

International Oskars, have been awarded to products from all those that have arrived in the roughly two years since the emergence of the Amiga.

It was easiest to make the Games awards — though there are far more in that — or rather — those categories. The winners are, of course, personal choices and no doubt many AUI readers will take issue with some of them and support games that we have omitted. But while there may be disagreement with our selections, there are, it seemed to us, some games that stood out as exceptional, far ahead of others, either for their use of the Amiga's talents or the sheer imagination that had been employed in creating the game. Defender of the Crown, unchallenged as the most popular of all Amiga games, had that certain class that made it outstanding. And our Special Category Winner, Mindwalker, possibly the first and some would claim still the greatest Amiga game, had that creativity to an unrivalled degree. So, too, did the winners of the other games Oskars.

For the non-games categories, the awards were generally more difficult to make because the requirements of buyers greatly differ. For example, the purchaser of the earlier Scribble might not even today want all the many facilities offered by the more recent ProWrite. How can you compare the excellent Zuma Fonts with

other, totally different utilities such as CLIMate, Flow, ZING! or even the 64 Emulator? Or contrast music products so unlike as Future Sound and Instant Music — which may well be more complementary than competitive . . .

There are products, too, such as programming tools, which we decided not to cover as we consider that these do not conform to simple enough criteria to be judged against one another and in any case are not possible of the widest application to the majority of probable Amiga users.

So it came down to what had impressed us as products that were of an excellence that made their outstanding quality a benefit to and well worth possessing by virtually any Amiga user. Those we selected are all products — as are many that did not win Oskars — into which immense amounts of effort and imagination have been invested. They are the results of both teamwork and individual genius. They are the consequences of a step forward in computing that is only now, after two years, beginning to be understood and exploited. We think they are all deserving of "classic" status and fully merit recognition as having contributed substantially to the enhancement of the Amiga dimension.

EDUCATION

Oskar Winner

Discovery

Microillusions

The Discovery educational series is growing fast and so is the number of its fans among younger Amiga users

Runner-up

Galileo

Infinity Software

GRAPHICS

Oskar Winner

Deluxe Paint II

Electronic Arts

The greatest graphics tool ever offered to the general computer user and a legend in its own time

Runner-up

Videoscape 3D

Aegis

MUSIC

Oskar Winner

Deluxe Music Construction Set

Electronic Arts

This product provides a huge variety of musical options allied with the simplest of musical techniques

Runner-up

Futuresound

Applied Visions

SPREADSHEETS

Oskar Winner

Maxiplan

Oxxi

Highly flexible and comprehensive spreadsheet facilities right across the Amiga range

Runner-up

Analyze

Microsystems

UTILITIES

Oskar Winner

CLIMate

Progressive Peripherals

An intelligent idea of great benefit, economically carried out

Runner-up

Calligrapher

Interactive Softworks

WORDPROCESSORS

Oskar Winner

Scribble II

Microsystems

Achieved — and deserved — the highest level of popularity among Amiga users

Runner-up

ProWrite

New Horizons



THAI BOXING

Anco

Doing their bit to lower the price of Amiga games, Anco have decided to release another martial arts game, not karate this time, but what is commonly thought of as the toughest martial art of them all, Thai Boxing, where I believe one boxer a month is fatally injured...

A neat loading screen and a snippet of oriental music give way to a not so impressive title screen. From here, the mode of play is selected, either one or two players, and three initials are entered for each player.

The fighting starts in the familiar way, with two boxers facing each other, viewed from the side. An energy bar and a picture of the fighter's face is shown at the top of the screen for each player. When a hit is landed, the fighters faces start to bleed. From a little nose bleed, the faces get pulverised into bloody messes, not a sight for the faint-hearted. Fifteen moves are accessible from different positions of the joystick with and without the button pressed. Anyone familiar with any other karate game will know all the types of kicks and punches to expect, high ones, low ones, spinning ones, they're all there.



Unfortunately, the design of the sprites has not had sufficient thought given for they look more clumsy than the Amiga requires, and their animation, when compared to Mastertronic's Ninja Mission, are clearly less believable. They have too unreal-

istic a movement, and seem to move more like robots. However, the backgrounds are of excellent quality.

At random points in the game, the view changes from side on, to a slightly 3D look. This does add some variation to the Thai Boxing, but the sprites seen even less realistic in this part. A sweep kick looks more like a low headbutt! Player one usually starts on the left of the screen, but again, at random intervals, starts on the right. For some reason, when this happens, the fight controls remain the same, but pushing left makes him walk right and vice versa.

Sampled grunts, screams and smacks sound off throughout the game, but these are badly timed, and the sound of a kick in the face is heard some time after.

These days, beat 'em ups should really achieve a better standard than this, especially on the Amiga. Thai Boxing can offer some entertainment, and it is cheap, but it is not going to be an international smash hit until the sprite movement equals the background quality.

B.V



Price: £9.95


```

/* By setting DEBUG to zero I can cut trace diagnostics in final version */
struct Window      *Window, *OpenWindow();
struct IntuitionBase *IntuitionBase;
struct GfxBase      *GfxBase;

/* ----- */
main()
{
    struct IntuiMessage *message, *GetMsg(); /* MUST make proper declarations */
    ULONG class; /* before we use these things */
    APTR object; /* or we'll upset the compiler */
    USHORT exit_flag=FALSE;

    if (begin_block()==FALSE) exit(FALSE); /* Opens libraries and window */

    do{
        Wait(1<<(Window->UserPort->ap_SigBit); /* Wait for message/s */
        /* to arrive */
        message=GetMsg(Window->UserPort);

        do{
            class=message->Class; /* Copy the data for our */
            object=message->Address; /* use so we can quickly */
            ReplyMsg(message); /* tell intuition that */
            /* we've taken it. */

            if (class==CLOSEWINDOW) (message=NULL;exit_flag=TRUE;)

            else {
                switch (class) {
                    case GADGETUP: gadget_hit(object); break;

                    case DISKREMOVED: if (DEBUG) printf("disk removed\n");break;

                    case DISKINSERTED: if (DEBUG) printf("disk inserted\n");break;

                    default: if (DEBUG) printf("unrecognized event\n"); break;
                }

                message=GetMsg(Window->UserPort);
            }

        }while(message);

    }while(!exit_flag);

    /* User has hit the 'close' gadget so we hand back the resources we were */
    /* utilizing. Messages, if any, that arrived after leaving the above loops */
    /* will be discarded by Intuition as we close the window. */

    CloseWindow(Window);CloseLibrary(GfxBase);CloseLibrary(IntuitionBase);
    exit(TRUE);
}

/* ----- */
begin_block()
{
    if ((IntuitionBase=(struct IntuitionBase*)
    OpenLibrary("intuition.library",INTUITION_VERSION))==NULL)
        if (DEBUG) printf("Cannot open intuition library\n");return(FALSE);
}

if ((GfxBase=(struct GfxBase *)
OpenLibrary("graphics.library",0))==NULL)
    if (DEBUG) printf("Cannot open graphics library\n");
    CloseLibrary(IntuitionBase);return(FALSE);

if ((Window=(struct Window *)
OpenWindow(&NewWindow))==NULL)
    if (DEBUG) printf("Cannot open window\n");
    CloseLibrary(GfxBase);CloseLibrary(IntuitionBase);return(FALSE);

return(TRUE);
}

/* ----- */
gadget_hit(object_pointer)
APTR object_pointer;

struct Gadget *gadget;

gadget=(struct Gadget*)object_pointer;

if (DEBUG) printf("%s %d %s %d\n",
    "gadget ",gadget->GadgetID," set to ",
    gadget->Flags && SELECTED);

/* if our program was going to perform */
/* specific operations when gadgets */
/* were 'hit' then it is in this region */
/* that we would place the gadget */
/* handling code. */

}

/* ===== */

```

AMIGA DOUBLETALK

SIN

"The evaluation of this function is performed in single precision when the argument is in single precision and in double precision when the argument is in double precision."

AN EXCERPT FROM THE
AMIGA BASIC MANUAL

PD

FREE, GRATIS AND PRACTICALLY FOR NOTHING

(Public Domain Software)

There are now in excess of 150 different PD (Public Domain) disks available for the Amiga. These typically contain between one and twenty programs each, averaging about 6-7 per disk, although one disk I came across contained over a hundred. Many software and hardware companies include PD software in their packages as an aid to using the main program. In fact quite a few commercial programs are themselves direct descendants of PD software. There are a few PD programs that seem to crop up time and time again. The reason for this is simple enough... They are excellent! However, they seldom seem to get the recognition they deserve. Well, we hope to be able to put the record straight by taking a regular look at the best PD programs currently available and reporting our findings.

Fred Fish must by now be a household name to anyone with an Amiga. He took it upon himself to collect and document as much PD software as possible and has gradually built up an incredible library of over 100 disks. These are commonly known as the Fish disks and are by far the most widely distributed around the world. It is with this in mind that we have chosen to use the Fish disks as the main source of material for our reviews. Some other popular Amiga PD libraries are AMICUS, FAUG and ICPUG. Their main differences lie in the way that each group catalogues the programs. Some may put all graphics routines on one set of disks and Music

utilities on another whilst another group may wish to put a mixture of program types on each disk.

Where can you get PD software? The most obvious source is from your local user group. Most of these have a PD library and for a small handling charge or for the price of the postage and packing, will send you copies of PD disks. Many dealers also hold a limited range and will often provide you with a few disks full to get you started if you buy an Amiga from them. If you are unable to obtain software via the above sources then you can always try Fred Fish himself who, if you send him a stamped, self-addressed envelope, will send you a list of all the disks currently available in the AMIGA library, and any ordering information that you will require. His address is:

Fred Fish
345 Scottsdale Road
Pleasant Hill, CA 94523
(U.S.A.)

Do Remember, when ordering Public Domain software, that it is usually individuals who maintain these libraries and that they spend their OWN time making copies. So please make sure you allow a reasonable amount of time for them to send you your goodies before chasing them up. If you are asked to provide the blank disks always ensure that they are well packaged and that sufficient funds are sent to pay for the return postage etc.

Once you receive your PD disks you will no doubt be keen to try them out. Unfortunately not all PD programs have icons and you will therefore need to be familiar with the CLI (Command Line interface) in order to use them. The Amiga manual is a little (a lot) thin on the ground in this area so I will give you a quick guide to running programs from the CLI.

To use the CLI you first need to turn it on. To do this select preferences on the Workbench disk. In the preferences window you will find a small panel marked CLI:ON/OFF. Select ON. Then exit preferences using the SAVE option. Open the SYSTEM drawer and you will find a small white cube marked with "1>" (which is not visible unless the CLI ON option is set). This is the icon that will enable you to obtain a CLI window. If, like myself, you are likely to use the CLI quite often then it is worthwhile at this point moving it out of the SYSTEM drawer. To do this move the mouse pointer over the icon and while holding down the left button, 'drag' it out of the window and into the main Workbench window. Clicking the CLI icon should now open a CLI window with the "1>" prompt in the top left hand corner. The usual gadgets are available and the window can be moved, sized etc. In order to make best use of the PD disks there are at least three CLI commands you will need to use. These are:

CD Used to set or change the current directory or drive.

DIR Used to display the details or files on a disk.
TYPE Used to display the contents of a file.

At this point it is worth mentioning that if you are a single disk drive user you may well find the CLI much less friendly than those using two or more drives. Most of the commands that CLI invokes live on the Workbench disk and this will necessitate lots of disk swapping (more about that in a later article). For the purpose of running PD programs you can help eliminate this problem by first copying the above commands from the Workbench disk to the RAM disk. To do this enter the following lines:

Copy df0:c/cd to ram:

Copy df0:c/dir to ram:

Copy df0:c/type to ram:

Single drive users should now remove the Workbench disk and insert the PD disk. Multi drive users should put the Workbench disk in df0: and the PD disk in df1:. The following text contains the commands for both single and multi drive users. The single drive commands are shown within square brackets.

To see what is on a PD disk you need to enter: **Dir df1: [RAM:dir df0:]** this will display a directory of the disks contents. If the display looks as though it might scroll off the top of the screen before you have had a chance to read it then you can pause it by pressing the right mouse button. Releasing the button will allow it to continue. Alternatively, pressing the space bar will freeze the display until the RETURN key is hit. The directory can also be sent to a printer by entering: **Dir > prt: df1: [RAM: dir > prt: df0:]**.

This is what the directory of Fish disk No. 18 looks like:

Browser (dir)
Ash (Dir)
PigLatin (dir)
Multidim (dir)
Xlisp1.6 (dir)
AmigaDisplay (dir)
MC68010 (dir)
Scrimper (dir)

README.disk README.list 18

The most prominent entries here are README.dist and README.list18. README.dist is a disclaimer informing us that all the software on the disk is believed to be in the Public Domain. README.list18 is a file written by Fred Fish that gives a brief overview of all the software on disk 18. Every Fish disk has a README.listxx file where xx is the relevant Fish disk number. To read this file enter: **Type df1:readme.list18 [RAM: type df0:readme.list18]**. The remainder of the entries are sub-directories. In this example we will look at the program 'Multidim'. First we need to make the Multidim sub-directory the 'current' directory. To do this enter: **CD df1:Mul-**

tidim [Ram:cd df0:Multidim]. Now we can see what is in this directory by entering: **Dir df1: [Ram:dir]**. The directory for Multidim contains:

multidim multidim.C
POSTER

The contents of this sub-directory is pretty similar to those you will find on any of the Fish disks. A POSTER file will contain any instructions that the author may have included with the program. Files followed by '.c' contain the C source code for the program. The executable program is normally the file with the same name as the directory and does not usually have a suffix. To run the program you need only enter its name. To run Multidim enter **Multidim**

[Multidim]. In this case running the program would result in the following prompt:

Usage: multidim n (2-6) where n is the number of dimensions

This simply means that we need to add a parameter after the program name. In this case a number in the range 2 to 6. Therefore we need to enter something like: **Multidim 4 [Multidim 4]**. Once you have finished using the current program you can go back to the main directory by entering: **CD/ [Ram:CD/]** and then go on to examine some other program.

Well, that's all there is to running a PD (or any other) program via CLI. So now let's examine a few PD programs!

DPSLIDE

By Paul A Biondo

This is a popular and easy to use utility that will display a running slide show of DPaint or compatible images. It allows the user to select which pictures are to be displayed and for how long. The way in which each image is made to appear is also selectable. To pass all this information to DPslide the user must first create a command file. This consists of an entry for each image.

Example:

Girlpic, 0, 0, 0, 10
Lollypop, 2, 0, 0, 5
KingTut, 3, 0, 0, 5

In the above example the first image to be displayed is called Girlpic. It is followed by four parameters although at the present time only the first and last are used the others are for future expansion. They are Startmode and Displaytime. Displaytime is the number of seconds allowed to elapse before the next image is loaded and displayed. Startmode is a single figure in the range 0-4 and indicates the method used to

bring the image onto the screen. They are:

- 0: Pop up — Image 'Pops' onto the screen instantaneously.
- 1: Fade in — Image fades on to the screen.
- 2: Fade out/Fade in — Old image fades out then new image fades in.
- 3: Scroll Up — New image scrolls up over old image.
- 4: Scroll over — Entire display scrolls up bringing new image into view.

From this it can be seen that in our example KingTut will scroll up over Lollypop.

To run DPslide type:
DPslide commandfile

Where commandfile is the name of the file containing the command entries. DPslide will loop back to the first image when it reaches the last entry. While running, F1 can be used to pause/unpause the program, F2 will toggle the Workbench screen to the front/rear and F10 will exit the program.

How many times have you seen an Amiga running a picture slide show? Enough said!

BRUSH2ICON

The icon editor found on the Workbench disk leaves rather a lot to be desired. Wouldn't it be nice if you could use DPaint or Aegis Images to design your icon? Well, you can with a little help from the PD utility Brush2Icon. First you need to draw your icon using DPaint or some other IFF compatible program. When doing this you must remember that the Workbench screen is in 640 x 200 mode and only uses four colours. So if using DPaint you would select Medium resolution (640 x 200) with four colours. It is possible to give the appearance of more colours by setting

alternate pixels to different colours the result being something like a chessboard. I.e. A suitable pattern of blue and white pixels gives the appearance of a pale blue. Once you have completed your masterpiece you must save it as a brush. From CLI you then run Brush2Icon as follows: **Brush2Icon brushname toolname**. Where brushname is the name of the brush (simple, eh?) and toolname is the name of the program to be associated with the icon.

Each new program that hits the streets seems to have an icon that is much better than the last. I doubt if many were created using IconEd!

I.B.

SOFTWARE AND PERIPHERALS

LATEST AVAILABILITY LIST

This latest availability list shows the growing quantity of software and peripherals for the AMIGA. It has been compiled by AMIGA User with the valuable collaboration of leading distributors. We are very grateful for the special help we have received from Busbyte Ltd and Precision Software. Prices include VAT, where necessary and may, of course, be subject to change. Consult your dealer for price confirmation.

Product	Company	Price
---------	---------	-------

1. Communications

BBS PC	MicroSystems	£69.95
Dialtext Comms Pack	Electronic Arts	£29.50
Diga!	Aegis	£65.00
Digital Link	Digital Creations	£69.95
Maxicom	Maxisoft	£49.95
Online!	MicroSystems	£69.95
Ruby-Comm	Y2	£90.00

2. Publishing/Printing

Deluxe Print	Electronic Arts	£79.00
Home Publisher	Hi Tec	£24.95
Move Over Mac	Brown	£149.95
Page Setter	Gold Disk	£149.95
Pro-Write	New Horizons	£99.95
Publisher	Vision Technology	£99.95

3. Graphics and Video

Analytical Art	Crystal Rose	£69.95
Animator With Images	Aegis	£119.95
Artpak	Aegis	£44.95
Calligrapher	Interactive Softworks	£55.00
Deluxe Paint	Electronic Arts	£69.00
Deluxe Paint Art & Utility Disk	Electronic Arts	£29.95
Deluxe Paint II	Electronic Arts	£129.00
Deluxe Video Construction Set	Electronic Arts	£99.00
Digi-paint	NewTek	£59.95
Express Paint	PAR Software	£58.00
Form in Flight	Micro Magic	£60.00
Grabbit	Discovery	£29.95
Images	Aegis	£69.95
Impact	Aegis	£73.00
Page Flipper	Mindware	£46.00
Sculpt 3D	Byte	£79.95
TV*Show	Zuma Group	£99.95
TV*Text	Zuma Group	£99.95
Impact	Aegis	£169.95
Video Titler	Aegis	£71.30
Videoscape 3D	Aegis	£119.95
Zuma Fonts	Zuma Group	£26.00

4. Leisure

A Mind Forever Voyaging	Infocom	£34.95
Archon	Ariolasoft	£29.95
Arcticfox	Ariolasoft	£29.95
Arena Sports Simulation	Psygnosis	£29.95
Army Moves	Imagine	£24.95
Balance Of Power	Mindscape	£34.95
Bally Moo	Infocom	£29.95
Barbarian	Psygnosis	£24.95
Blackjack Academy	MicroIllusions	£29.95
Borrowed Time	Activision	£24.95
Bratticus	Psygnosis	£34.95
Bureaucracy	Infocom	£34.95
Chessmaster 2000	Software Country	£29.95
Deep Space	Psygnosis	£34.95
Defender Of The Crown	Cinemaware	£29.95
Deja Vu	Mindscape	£29.95
Delta Patrol	Other Valley	£24.95
Demolition	Anco	£9.95
Diablo	Unicorn	£24.95
Dr. Fruit	Anco	£9.95
Earl Weaver	Electronic Arts	£29.95
ECO	Ocean	£24.95
Emerald Mine	Anco Games	£9.95
Faery Tale	Micro Illusion	£29.95
Ferrari Formula One	Electronic Arts	£24.95
Final Trip	Anco	£9.95
Financial Cookbook	Electronic Arts	£49.95
Flight Simulator II	Sublogic	£59.95
GFL Championship Football	Gamestar	£24.99
Gizmoz	Digital Creations	£49.95
Goldrunner	Microdeal	£24.95
Guild of Thieves	Rainbird	£24.95
Gunship	Microprose	£39.95
Hacker	Activision	£24.95
Hacker II	Activision	£24.95
Hitchhikers Guide To The Galaxy	Infocom	£29.95
Hollywood Hijinks	Infocom	£34.95
Hollywood Poker	Diamond Games	£19.95
Hunt the Red October	Grand Slam	£24.95
Impact	Audiogenic	£14.95
Insanity Fight	Microdeal	£24.95
Karate Kid II	Microdeal	£24.95
Karate King	Anco Games	£9.95
King of Chicago	Mirror Soft	£29.95
Kings Quest	Sierra	£29.95
Knight Orc	Rainbird	£19.95
Leader Board	Access	£39.95
Leather Goddesses Of Phoebe	Infocom	£34.95
Little Computer People	Activision	£34.95
Marble Madness	Electronic Arts	£29.95
Micro League Baseball	Micro League	£59.95
Mindshadow	Activision	£24.95
Moon Mist	Infocom	£29.95
Ogre	Origin Systems	£24.95
One On One	Ariolasoft	£29.95
Pawn	Rainbird	£24.95
Phalanx	Anco Games	£9.95
Pinball Wizard	Kingsoft	£19.95
Planetfall	Infocom	£29.95
Portal	Activision	£24.95
Power Play	Arcana	£19.95
Q Ball	English Software	£19.95
Racter	Mindscape	£36.00
Rogue	Epyx	£39.95
S.D.I.	Cinemaware	£49.95
Seven Cities Of Gold	Ariolasoft	£29.95
Silent Service	Microprose	£39.95
Sinbad	Cinemaware	£29.95
Sky Fighter	Anco	£14.95

Skyfox	Ariolasoft	£29.95
Slap Fight	Imagine	£24.95
Soace Battle	Anco Games	£9.95
Space Quest	Sierra	£29.95
Star League Baseball	Gamestar	£29.95
Super Huev	Cosmi	£19.95
Temple Of Aoshai Trilogy	Epyx	£39.95
Terrorpods	Psygnosis	£24.95
Test Drive	Electronic Arts	£24.95
The Haley Project	Epyx	£44.95
The Pawn	Rainbird	£24.95
The Surgeon	Amisung	£49.95
Trinity	Infocom	£34.95
Uninvited	Mindscape	£29.95
Vader	Anco	£9.95
Video Vegas	Baudville	£29.85
Winnie The Pooh	Sierra On-Line	£49.95
Winter Games	Epyx	£29.95
Wishbringer	Infocom	£29.95
Wizball	Ocean	£24.95
World Games	Activision	£24.95
Zork I	Infocom	£29.95
Zork II	Infocom	£29.95
Zork III	Infocom	£29.95

5. Business

A*Filer	Megasoft	£49.95
Acquisition	Taurus Impex	£299.95
Amiga Accounts	Total Office	£149.95
AmigaCalc	Commodore	£79.95
Analyze! Graphics	Micro-Systems	£49.95
Analyze!	Micro-Systems	£99.00
B.E.S.T. Business Management	Business Electronics	£399.00
Hippo Word	Hippo	£189.95
Integrated Accounts	Eldersoft	£114.95
KSpend	Kuma	£79.95
Logistic	Grafax	£99.00
Maxidisk	Maxisoft	£69.95
Maxiplan	Oxxi Inc.	£129.95
Maxiplan 500	Oxxi Inc.	£99.95
Maxiplan Plus	Oxxi Inc.	£149.95
MIAMiga File	Softwood	£99.95
Office	Interlex	£49.95
Organise	Micro-Systems	£99.95
Scribble With Mail Merge & Spellcheck	Micro-Systems	£60.00
Superbase	Precision	£99.95
Talker Word Processor	Finally	£42.15
Textcraft	Commodore	£59.00
The Works	Micro-Systems	£149.95
Unicalc	Lattice	£65.00
VIP Professional (1-2-3 Clone)	Ditek	£149.95
Vizawrite (Desktop)	Viza Software	£99.95
Wordperfect	Sentinel Software	£249.95
Write & File	Softwood	£99.95

6. Utilities and Languages

64 Emulator	ReadySoft	£69.95
A/C Basic	Absoft	£195.00
A/C Fortran 77	Absoft	£235.00
APL Programming Language	Micro APL	£230.00
Aztec C	Manx	£260.00
Benchmark Modula-2	Oxxi Inc	£199.95
C.L.I. Mate	Prog. Peripherals	£30.39
Cambridge Lisp	Metacomco	£149.95
dBase III ISAM Package	Lattice	£115.00
Dev Pac	Hi Soft	£49.95
Explorer Disassembling Debug Monitor	I.A.N	£49.95
ISO Pascal	Metacomco	£89.95

CONTINUED FROM PAGE 81

K Seka Assembler	Kuma	£49.95
Language Plus Runtime System	True Software	£249.94
Lattice C 3.1 Fast Compiler	Lattice	£165.00
Lattice C 3.1 Professional	Lattice	£270.00
Lattice C Compiler	Lattice	£129.95
Lattice C 4.0 (Standard)	Lattice	£189.95
Lattice C 4.0 (Developers)	Lattice	£299.95
Macro Assembler	Metacomco	£60.82
Marauder 2	Discovery	£30.00
MCC Toolkit With Multi-user Utility	Metacomco	£39.95
Metascope Debugger	Lattice	£75.00
Modula-2	Modula-2	£99.95
Modula-2 Developers Version	Modula-2	£149.95
MS DOS-C Cross Compiler 3.1	Lattice	£325.00
Multi Forth	Creative Solutions	£179.00
Panel Screen Design	Lattice	£145.00
RAM Disc	MicroForge	£24.99
Screen Editor	Lattice	£75.00
Shell Enhanced CLI	Metacomco	£49.95
Text Utilities	Lattice	£55.00
True Basic Language	True Software	£149.95
True Basic Runtime System	True Software	£149.95
UB2 Forth	UB2 Software	£85.00
Unix Compatible Make	Lattice	£75.00
USCD Pascal - The Power System	Pecan	£79.95
Zing!	Meridian	£54.19

7. Music

AudioMaster	Aegis	£49.95
Deluxe Music Construction Set	Electronic Arts	£99.95
Drum Studio	Hi Tec	£39.95
Dynamic Drums	New Wave Software	£69.95
Future Sound	Applied Visions	£170.00
Instant Music	Electronic Arts	£29.95
It's Only Rock And Roll	Electronic Arts	£29.95
Music Student I	ACS	£49.95
Music Student II	ACS	£49.95
Music Studio	Activision	£34.95
Sonix (was Musicraft)	Aegis	£79.95
Soundscape MIDI Interface	Miaetics	£59.00
Soundscape Pro MIDI Studio	Miaetics	£184.99
Soundscape Sound Sampler/Digitiser	Miaetics	£124.99

8. CAD/CAM/Drawing

Aegis Draw	Aegis	£169.95
Dynamic CAD	Micro Illusions	£495.00
PCB Layout	Soft Circuits	£499.00
PCB Logicworks	Capilano	£99.95
X-CAD	Taurus	£450.00

9. Other

Business Statistics	Lionheart	£145.95
Decision Analysis	Lionheart	£110.95
Demonstartor	Meridian	£69.95
Discovery	MicroIllusions	£39.95
Flow Ideas Processor	New Horizons	£99.95
Galileo	Infinity	£55.00
Home Control System Starter Pack	MDR	£375.00
Isgur Portfolio	Batteries Inc.	£249.95
Multi-Variate Analysis	Lionheart	£145.95
Portfolio Gold	MDR Interfaces Ltd.	£9.95
Sales And Marketing Forecasts	Lionheart	£145.95

10. Peripherals and Accessories

2 Mbyte RAM Expansion	Comseec	£595.00
32 Bit Turbo Amiga System	CSA	£5,475.00
68020 14 Mhz CPU Board	CSA	£975.00
68020/68881 Fast/maths Pigeonback Board	CSA	£1,480.00
A3 Graphics Tablet	Cherry	£550.00
A4 Graphics Tablet	Anakin	£499.00
Alegra 512K Memory Expansion Board	Access Associates	£230.00
Amiga Dust Cover (500)	Amiga User	£7.99
Amiga Dust Cover (1000)	Amiga User	£16.45
Digiclear (captures from video/camera)	Busbyte	£79.00
Genlock With Software Utilities	Interactive	£430.00
H.A.M. 4096 Colour Digitiser	Digiview	£179.00
Hawk Scanner	Burocare Systems	£1,350.00
High Resolution Flicker Free Monitor	Mitsubishi	£799.00
Jitter Rid For 1081 Monitor	Ideas Created	£19.95
Kickstart Eliminator	Supra	£179.00
Modem Leads	Various	£19.95
Perfect Sound Sampler	SunRize Industries	£70.00
Polaroid Palette And Interface System	Polaroid/Imprint	£1,550.00
Real Time Clock	Busbyte	£59.90
Sidcar (provides IBM compatibility)	Commodore	£699.00
Sidcar With Amiga System 1	Commodore	£1,475.00

11. Printers

7 Colour Ink Jet Printer	Canon	£449.00
A3 4 Colour Pen Plotter	Hitachi 672	£599.00
A3 6 Colour Pen Plotter	Seitronic SPL 430	£899.00
A4 4 Colour Pen Plotter	Epson H180	£399.00
High Quality Colour Printer	Mitsubishi	£4,135.00
High Quality Ink Jet Printer	Xerox	£1,195.00
Juki 5510 180cps/NLG/DG Matrix Printer	Juki	£260.00
Laser Printer 300 dpi	Canon LPBB-A1	£2,600.00
Laser Printer 300 dpi	GMS	£1,995.00
Laser Printer 300 dpi Vector Graphics	Canon LPBB-B1	£3,799.00
Okimate 20 Printer With Amiga ROM	Okimate	£173.90
Printer Cable	Busbyte	£19.95
Toner Cartridge (black, brown, blue)	Canon	£86.00

12. Disk Drives and Storage

20 Mbyte Hard Card (needs Sidcar)	ITech	£695.00
30 Mbyte Hard Card (needs Sidcar)	ITech	£995.00
3M 3.5in Disks, DS, DD, Box 10	3M	£47.00
3M 5.2in Disks, DS, DD, Box 10	3M	£37.00
Disk Box, 40 x 3.5in Disk Capacity	Mforma	£19.95
External 3.5" Disc Drive	Cuana	£114.95
External 3.5" Disc Drive	NEC	£114.95
Supra 20 Mbyte Hard Disk With Clock	Supra	£793.35
Supra 60 Mbyte Hard Disk With Clock	Supra	£1,608.85

13. Books

Advanced Amiga Basic	Compute!	£14.95
Amiga DOS Manual	Bantam	£24.95
Amiga Programmers Guide	Compute!	£14.95
AmigaDOS Reference Guide	Compute!	£12.95
Beginners Guide	Compute!	£14.95
Elementary Amiga Basic	Compute!	£12.95
Hardware Reference Manual	Addison Wesley	£23.70
Intuition Reference Manual	Addison Wesley	£23.70
Modula-2 Seafarers Guide/Shipyard Man	Addison Wesley	£16.30
Presenting The Amiga	First Publishing	£9.95
Programmers Handbook	Sybox	£24.95
ROM Kernel Reference Manual I Exec	Addison Wesley	£23.70
ROM Kernel Reference Manual II	Addison Wesley	£33.20
The Amiga Handbook	Sunshine	£7.95
The Amiga System	Precision	£9.95

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