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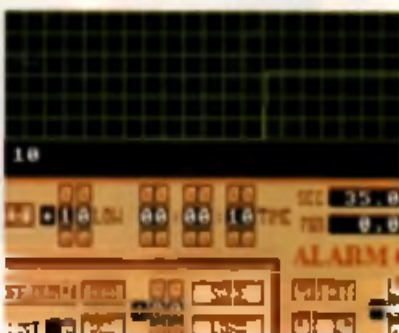
Sequelitis is back with a vengeance, as U.S. Gold unveil the eagerly-awaited sequel to *Eye Of The Beholder*—can it live up to our high expectations?



For those of you struggling with AMOS' many functions, help is here in the form of *Easy AMOS*.



Rescued from the Microsoft crash, Greafgold's *Fire And Ice* is finally here—courtesy of Renegade.



The wonderful world of electronic gadgetry makes its way over to the Amiga in the odd-looking form of Catus AB's *Tekno Amiga*.



Video titling is becoming more and more easy to do using the Amiga. New vids on the block, TV Show and Animation Studio come under scrutiny.

COVERDISKS

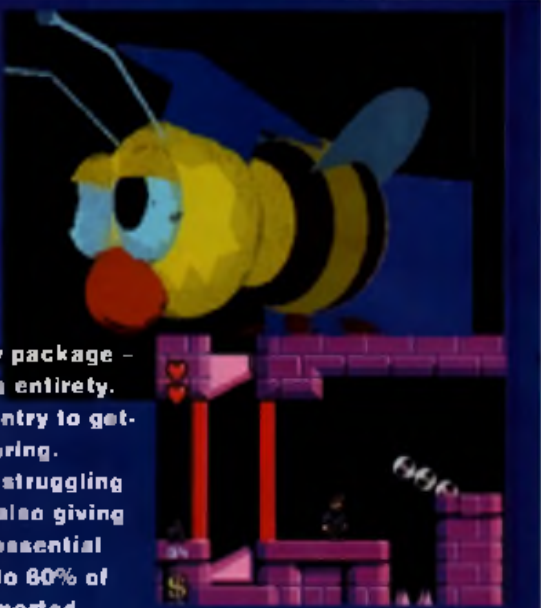
Our coverdisks have always been famed for their up-to-the-minute demos and variety of utilities and accessories, but this month we've got to admit that we've excelled ourselves.

Leading the way is Byte By Byte's stunning *Sculpt 4D Junior* package—and we're giving it away in all its entirety. *Sculpt 4D Junior* is the perfect entry to getting into 3D animation and rendering.

In addition, for anyone who is struggling with limited disk space, we are also giving you *Powerpacker 3.0*, too. This essential utility can save floppy users up to 80% of their disk space, and is well-supported within the PD circuit. Also, should you wish to upgrade, there's also a demo of *Powerpack 4.0*.

Finally, games players haven't been neglected, either. An entire level from Ocean's *The Addams Family* awaits your attention. Comprising the dungeon section from the final game's five-stage house, all manner of nasties and obstacles must be avoided as you guide Gomez around the sprawling mansion as he searches for his kidnapped son, Puggsley.

FOR MORE INFO ON THESE GREAT DISKS, TURN TO PAGE 18...



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GAMES 45 Ooky and Spooky, we enter Screen Scene with our exclusive review of Ocean's *The Addams Family*. As the Mancunian company attempt to bridge the gap between the Amiga and Console markets, we're there to tell you if they have succeeded. Supporting Gomez and Co., we also have reviews of Krisalis's *John Barnes* licence, Renegade's *Fire And Ice*, and 21st Century's *Deliverance*. RPG fans are similarly well catered for, with U.S. Gold's *Might And Magic 3* and *Eye Of The Beholder 2* making their long-awaited debuts along with Gremlin's *Space Crusade*.

TECHNICAL 106 LET'S DANCE Ray-Tracing is made even easier as *Ray Dance* hits the unsuspecting Amiga. Mal Broomfield explores its many applications and comes away suitably impressed at its speed.

111 BRIGHT SPARKS Does the thought of linking a series of circuit board experiments to your precious machine send shivers down your spine? It needn't any longer. CU Amiga enters the world of electronics as we dissect Catus AB's *Tekno Amiga*.

115 MAKIN' MOVIES The use of the Amiga in video work is becoming rapidly more easier, and the array of fades and wipes your machine is capable of are ever-expanding. Chris Jenkins looks at two new bundles which hope to revolutionise this evolving market.

120 VISIONARY Ever since would-be adventure writers dipped into *The Quill*, they have hoped that, one day, they can produce something to rival the likes of *The Hobbit* or *Twin Kingdom Valley*. With adventure game systems growing ever more complicated, at last there's a package to allow you to design your own calacombs and the creatures within them.

162 WHEN IT COMES TO THE CRUNCH Archiving is an essential means to getting the most from your disk space. Mal Broomfield looks at the options available.

COMPETITION 140 Win your own PD library **167** Special Australian compo



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RECESSIONARY BLUES

There may have been a general election, but the recession is still biting hard. CU Amiga reports on two important casualties of the present economic downturn and asks when will it end...

ZOO CLOSES

European Electronic Zoo, purveyors of fine quality software such as *Magic Garden*, *Germ Crazy* and *Under Pressure*, are no more. Apparently, the firm went under due to liquidity problems, but Zoo boss, Stewart Bell, was unavailable for comment as CU Amiga went to press. Despite a patchy track record, Zoo looked set for better things with the recent release of their massive RPG game, *Abandoned Places*. Scoring a healthy 83% in the March issue of CU, the game raced up the charts upon its release.

Sadly, the company won't be able to reap the rewards of the game's success. Coming just months after the Microsoft crash, we're left won-

dering how many more software companies will be forced against the wall. A good Amiga game can still expect sales in the region of 20,000 copies, but average titles are failing to shift more than 10,000 units. That's an important benchmark figure as when you take into account the development, production and advertising costs a company incurs during a game's manufacture, things will get tight if sales dip below this magic number. Already, there have been rumours that some firms are considering ditching the Amiga over the next couple of years, and moving towards the burgeoning console market. This has already happened in the ST market and whether the Amiga suffers the same fate rests firmly in the hands of Commodore. Although sales of the Amiga are at an all-time high, there's no doubting the need for a substantial upgrade in the near future. With the A800 and A570 in the pipeline, things are looking good, but until we can take a closer look at these machines we won't know for sure...

AMIGA CENTRE SCOTLAND TO CLOSE ITS DOORS

In a development that may come as a surprise to many, Amiga Centre Scotland is closing its Edinburgh based shop. ACS is well known in the industry as being the home of the Harlequin, the only true 24-bit display card available for the

Amiga, as well as for their part in organising a series of Animation festivals and as a local point for Amiga owners north of the border.

All is not doom and gloom, though. The reason given for the move of premises and the public lock-out is that now ACS will be able to spend more time on research and development of future



Harlequin upgrades and possibly some entirely new products, as well as selling related packages by mail order. Now we'll have time to do some work without having to bother selling printer cables, commented Martin Lowe.

When the economy does pick up, however, are the tough trading conditions hitting the high street. After the boom period of the late 80s and early 90s, the harsh realities of a bust economy have come home to roost and many independent computer retailers are finding it tough to compete with the big chains.



In case anyone needs to get in touch with Amiga Centre Scotland, their new address is: Harlequin House, Walkerburn, Peebleshire, Scotland EH43 6AZ. You can call them on 089 687 583 or fax on 089 687 456.

SILENTS QUIT DEMO SCENE

Top Danish demo creators, Silents, have made their last megademo for the Amiga. In a shock development, the team have released their stunning follow up to last year's *Global Trash* demo on video tape rather than floppy disk. Apparently, the group have become disillusioned with the scene and the technical restrictions imposed on them using disks for distribution.

Their new megademo, *Global Trash II*, features live Camcorder footage shot at a Rave, interspersed with some stunning new Amiga effects. Beginning with an incredible fog effect,

the accompanying music begins slowly before building up into a Hardcore rave beat. Interestingly, there are no scrolls, plasma or bob effects to be seen, only a host of amazing new effects. One of these features a *Sculpt 4D* animation of a man's face rotating through 360° and lip-synced throughout.

Silents have also branched out into game design, and originated 21st Century's *Pinball Dreams* which we reviewed last issue. Unfortunately,

the game was cracked before its release, and widely distributed on Bulletin Boards throughout Europe. Undeterred, the group are considering a number of new offers and are busy putting the finishing touches to an as-yet-undisclosed project.



BUNDLES ONLY FOR GVP ACCELERATOR

A flood of GVP minicards are due to arrive in the UK by the time you read this. The minicard variants, including at the moment an accelerator and a PC emulator, are an easy upgrade path for A500 owners. Fitting inside the GVP series II Hard Drive, the minicards don't require any modification to the A500 itself, leaving warranties intact. The ability to add an accelerator in this way is a first, and it's just as well that GVP have done it, since the Series II is notoriously unfriendly to third party accelerators installed on the motherboard.

Originally billed as add-ons, these minicards will now only be available in the UK as part of a complete unit. However, existing owners will be offered some sort of upgrade path. Said Andy Leaning of Silica: 'We are not sure what form this upgrade will take or how much it will cost, but we will not desert our customers.'



recent *Formula One Grand Prix* and have a number of other deals in the pipeline. Such product placement is common practice in American movies, where nothing appears unless it's been paid for, and Micro-Time look set to successfully import the idea into computer games.

According to MTM boss, Danny Bobroff, products are only placed where they will tie-in with the game in some way. Obviously, Seven-Up and Duckhams were naturals for *Grand Prix* and actually enhanced the sense of realism by dotting the ads around the race tracks. What next, one wonders? What about adverts for condoms in *Leisure Suit Larry*? Adidas trainers in *Kick Off*, and Barrett Homes in Bomark's *3D Construction Kit*?

HEX GOES HARDCORE

The world's first hardcore rave CDTV release, *Global Chaos*, is set to be unleashed sometime in May from innovative publishing house, Hex. If the name sounds familiar, that's because the same company were also behind the spectacularly bar *Top Banana* game, released at the beginning of the year.

The CD combines animation with three ambient house tracks and four hardcore techno tracks. Anyone who saw the smart intro to *Top Banana* will know what Hex are capable of, so expect more of the same. The CD will retail for £29.99.



CU ON-LINE

Well, not quite, but we will be soon. So if you've got a modem you'll be able to bombard us with all sorts of trivia over the phone lines. Until then, we've set up a CU conference on a number of boards. Anyone wishing to contact us can leave a message on the board in the CU AMIGA area and we'll get back to them as soon as possible.

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2:253/510	Amiga Junction	London/Surrey	0372 278000

CD ROM LAUNCH DELAYED

No sooner have Commodore pencilled in a release date for their CD Rom upgrade, than they promptly change their minds. Delays have seemingly plagued the machine since news was first leaked of its existence just under a year ago. Now, according to reliable information leaked to CU, the machine's release date has been delayed once more. Enthusiasts will now have to wait until September at the earliest to get their mitts on one of the drives which effectively enables an Amiga to run CDTV software.

Rumours persist about compatibility problems with the machine, and this could be one reason for the delay. Another could be the dearth of decent software support for the CDTV. Few titles are worth buying, and many are just expensive copies of existing Amiga software. Until there's a good selection of utilities and games readily available for the machine, Commodore may keep on delaying its launch indefinitely - who knows.

MORE FROM MAXIS

Simulation specialists Maxis, have been exceptionally busy of late. Due for release within the next couple of months is the Amiga version of *Sim Ant* which should be reviewed next issue. Then, towards the end of the year, we should see *A-Train*, a railway construction game of enormous depth set to rival Microprose's *Railway Tycoon*.

Sim Farm is scheduled for release early next year and, yes, it will simulate the running of a farm complete with battery hens and Foot and Mouth disease. Later still, comes *Sim Life* where the objective is to guide a life-form from its early primordial origins through the evolutionary process. There's the chance to play mad scientist with your chosen species as the game will have a genetic engineering option to help mutate your life forms into all manner of weird beasts.

At the back end of 1993, comes the sequel to the award-winning *Sim City*. Imaginatively titled *Sim City 2000*, the game promises to be immense with the city's infrastructure expanded considerably. There'll be many more construction tools to juggle than before and there will also be an enhanced CDTV version.

X MARKS THE SPOT

Weekly (weakly?) games title, *Games X*, has finally bitten the dust after nearly a year of outrageous claims that the magazine was pulling in readers faster than Julia Roberts gets film offers. On its launch in April 1991, erstwhile publisher, Hugh Golliner, claimed the title's first ABC would exceed 60,000. In reality, the title failed to be the money-earner Europress hoped for, and sales were rumoured to be nearer the 20,000 mark. The last issue of the multi-format mag hit the newsstands on April the 27th. Covering all computer and console formats left the magazine open to competition from single-format mags which could offer more specific and in-depth coverage. Only C&VG appears to have got the mix right concerning multi-format coverage and, that, again, is aimed at the pre-teen market.

ENTRY LEVEL LASERJET



The printer war is on again as Hewlett Packard launch their new entry level system. The HP LaserJet IIPlus is a cut-down version of the industry standard in laser printers. Incorporating the proven Hewlett Packard engine and 512k of memory, the new printer is aimed at people who use an HP LJIII in the office and want a similar standard of printer technology at home.

The IIPlus is fully upgradable with larger paper trays, memory boards (necessary for heavy graphics work) and even an HP PCL5 cartridge to allow full compatibility to the latest LJIII range, although you may find that simply being an LJIII is good enough for most applications.

One of the HP's claims for the LaserJetIIPlus is that, although its top speed is a mere four pages per minute (measured, as with all laser printer speeds, as the number of full page copies that can be output in a minute), its actual engine speed (the time it takes to accept the data and print the first page) is way ahead of most other systems. Incorporating a 16MHz processor and new internal hardware HP claim a ten second speed increase over previous LJIII models.

The price may still be a bit steep at £889, especially considering you will need extra memory to take advantage of full-page graphics at 300dpi, but at least it's a move in the right direction.



Mindscape's Sherlock Holmes

GAME MUTTERINGS

Industry vet. Mey Dinc, and his vivid Image cronies are currently working on a sequel to *First Samurai*. Nirvana, the team responsible for Ocean's *Elf*, are busy developing two games. *Disaster Strikes* is a game similar to *Elf* which uses a scrolling cityscape as its backdrop, and *The Edge* is a blaster requiring strategy as well as a gun-happy trigger-finger. *Darkseed* is *Another World*-y cinematic arcade adventure featuring some lush graphics by H R Geiger. *Stunt Island*, from Disney, allows players to design, fly and film their own stunts. Expect it early next year. On a similar theme, Disney are also working on a Roller Coaster sim which lets the player construct their ideal ride. Loopy, or what? CDTV owners can look forward to a spot of super sleuthing courtesy of Mindscape's new *Sherlock Holmes Consulting Detective* game currently in production. *Final Carrage*, the fast-paced follow up to *Smash TV*, is set to debut in an arcade emporium near you this month. Whether the license will be picked up by Acclaim or Disney is another matter entirely.



Disney's Coaster



Darkseed by Mirage



Disney's Stunt Island

IT'S THE END OF THE WORLD AND WE FEEL FINE

Imagitec Design, the force behind *Viking Child* and Mirage's forthcoming *Humans*, have yet another game up their sleeve. *Ragnarok*, also to be published by Mirage, is



Mirage are looking towards a Christmas release.

based on the ancient Norse game of Kings Table and involves a battle royale between the gods of Viking mythology. An intriguing strategy board game for the home computer, *Ragnarok* lets the player assume the guise of Odin, lord of the gods, and pits him against a variety of evil gods and their henchmen. *Ragnarok* has only just started development, but

REALTIME 12-BIT ANIMATION

Avidec is the latest video product to be taken on by Checkmate Digital. Having been stung by *Black Belt* with Ham-E, they are obviously looking to outdo the revamped Amiga when it eventually arrives.

Avidec comes in two configurations. The first is a 12-bit board, which only allows up to 4096 colours (the same as HAM) but it will do so in Hi res interlaced OverScan mode (768 x 580) and without any of the fringing effect associated with HAM. PIP (picture in picture, or the ability to have mixed resolution screens) will be supported and the package will come complete with application software and an offer for *TVPaint*, widely acclaimed as the best professional paint package.

Avidec 24 is essentially the same only with the capability to display 24-bit images at 768x580 resolution and consequently, the ability to double buffer 12-bit images for animation purposes. Unfortunately, neither of the boards follow approved expansion paths, though, and to fit one in an A500 will require the user to invalidate their warranty and may stop it from working with other peripherals or software.

There is nothing especially impressive in the specification but when you look at the prices, with *Avidec12* at £249 and *Avidec24* (including *TVPaint1.5*) at £399, you may want to give Checkmate Digital a ring on 071 923 0658

CD-QUALITY SAMPLERS ARRIVE

The latest hot news from SunRize industries is that they are now shipping their AD1012 sampler board. What separates this from the rest of the crowd is that it can sample at 100,000 samples per second, giving a sample frequency range up to 50KHz - well above the range audible to the human ear and almost twice the frequency of a CD player. In addition, the AD1012 samples at an enhanced rate of 12-bits giving a 4096 level sound resolution (a dramatic increase on the 256 level resolution currently employed by standard Amiga samplers).

The card can play back four channels of 12-bit sound simultaneously and decode a SMPTE time code for Video work. In fact the card is Toaster compatible and includes a SMPTE generator to trigger a cue-lit without the need for an external time code. Incorporated in the board is a 2105 Digital Sound Processor (a 40MHz chip rated at 10MIPS). This is a custom co processor which, rather like the blitter, handles all the sound functions without too much interference from the Amiga's processor. This enables the AD1012 to be effectively used in multimedia applications where the Amiga is needed to simultaneously control graphics and disk accessing as well as sound.

The accompanying software, Studio 16, allows direct sampling to disk. Many record companies are now using this method to prepare digital masters for CD reproduction. Unfortunately, at 5Mb per minute, you'll have to have a fairly big SCSI drive before you can master *Tubular Bells* for yourself. *Studio 16* is a package which will actually give better than CD quality reproduction, are promised soon, although pricing and release dates have not yet been given.

BY ANY OTHER NAME

Black Belt have run into trouble with their latest amazing graphics package, *Image Master*. They have been working for some time on a package which will promote the Amiga to the top of the list when it comes to high-quality video work. Some of the advanced features include 24 bit morphing routines like those used in the film *Terminator 2*. Manuals have been printed, disks duplicated, and boxes shipped but to no avail.

Apparently, *Black Belt* did not undertake an extensive enough product search before trying to break into the UK market - there already is a product selling here by the same name. For copyright reasons it would be illegal for anyone to sell it here under that name. Either the name must be changed (presumably including all the references in the manual and disk labels) or it can't be imported and sold.

Unfortunately, the package is already on sale throughout the rest of the Amiga world under this name. Changing the name and packaging would not only be confusing but also expensive - *Black Belt* estimate that it would cost them \$12,000 just to produce a new version for the UK. One possible solution that *Black Belt* are investigating is to get permission from the current owners. Until such a deal is made, *Black Belt* are advising customers in the UK to order their copies from overseas. Perhaps in light of this it will eventually appear under the name "Image Remaster".

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Quickshot's two new joysticks: the Intruder (top left) and the Aviator (right). Both are available in hi-quality versions.

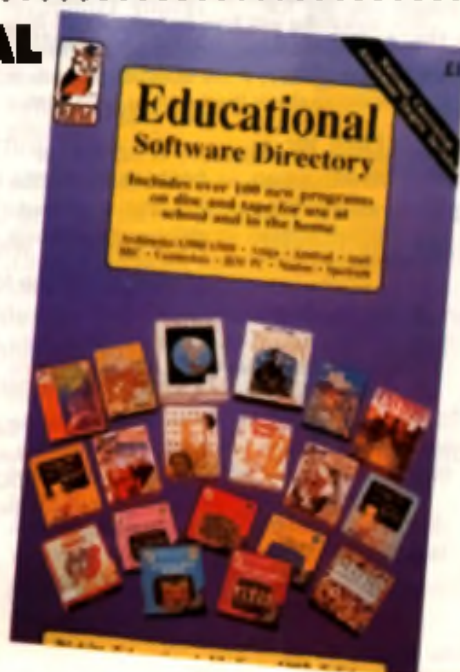
NEW AIRCRAFT JOYSTICKS

For committed light sim users, Quickshot have released two hi-tech joysticks to provide extra realism and control during play. The Intruder is a new one-handed, aircraft-type joystick which offers dual firebuttons, two-speed turbo fire control and a six-foot cable. With an extra wide joystick base and an easy to grip handle, this could be the answer to every flyboy's dreams. Priced at a reasonable £29.99, the stick should be in your local software emporium this month. Also on offer is the Aviator, featuring easy-to-grip handles, altitude and level indicators, frame-by-frame slow motion capabilities, four positive response firebuttons and two dual speed turbo-fire selectors. Such options don't come cheap, however, as the Aviator will set you back £34.99. We'll have a full review of both sticks next month.

FREE EDUCATIONAL SOFTWARE DIRECTORY

If your local softshop is a bit lacking in educational software, look no further than Rickitt's Educational Software Directory. The latest 1992 edition weighs in at a massive 96-pages and covers all major computers including the Amiga. What's more, the catalogue includes details of more than 500 programs with informative descriptions of each package and easy-to-order instructions.

The Educational Software Directory normally retails for £1, but is available free to CU AMIGA readers. To get your copy, simply telephone Rickitt Educational Media on 0480 57152. Fax them on 0480 53176, or write to them at: Ilton, Ilminster, Somerset, TA19 9HS, stating that you read about their catalogue in CU AMIGA.



THE SHOW CALENDAR

May

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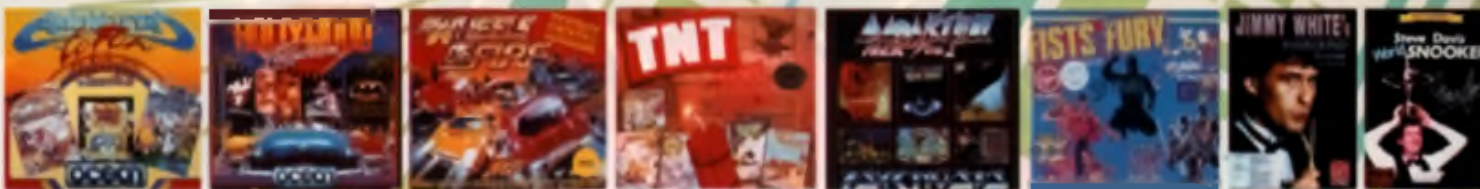
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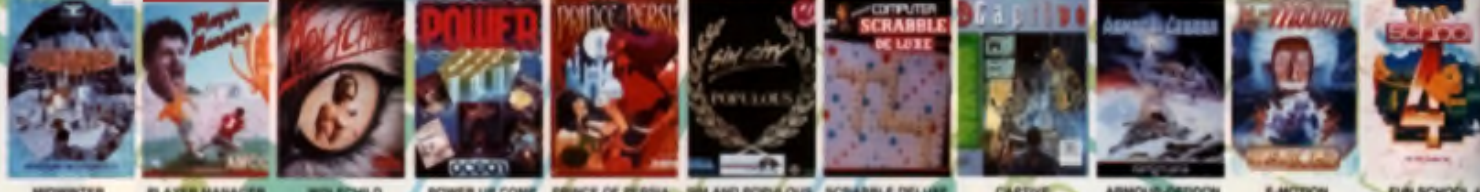
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Welcome to the CU Amiga coverdisks. We have a real treat for you. Not only are we giving away the excellent Powerpacker 3.0 utility, we're also giving you Sculpt 4D Junior, too. In addition, games players are equally well catered for as Ocean's brilliant Addams Family licence hits our second disk...

32.33

COVERDISKS

POWERPACKER 3.0

DISK 32

The more astute of you will have noticed that there are two full commercial programs on CU's Disk 32. *Sculpt Animate 4D Jr* may be the more exciting, but that doesn't mean that *Powerpacker* is any less useful. For a start, how do you think we managed to fit two commercial programs on one disk in the first place?

INTO THE ARC

Powerpacker 3.0 is a cruncher. In order to get more out of your magnetic media, you are bound to be considering the archive option. This is where the data or program is compacted by various binary tree or other algorithms. Instead of holding the pure data, the archived file will contain instructions on how to create the original data. The problem with archiving data is that in order to use it again you must first unarchive it. This can take time, can be annoying and even impossible if you have already used up the space you 'saved' when you archived the file in the first place. The answer to this problem is a cruncher.

A cruncher will compact data, not as well as an archiver maybe, but when it has finished, it writes a special de-crunching header on to the file. This means that when the file is executed it automati-

cally triggers the de-crunch routine, which unpacks the program directly to memory. This is all transparent to the user, the only side effect being a slightly longer loading time.

GETTING ON WITH IT

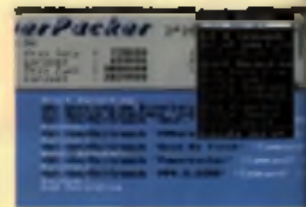
In use, *Powerpacker* is simplicity itself. First of all, before you even decide what file you want to crunch, you should select the preferences you want from the menu. Firstly, you will want to set the

buffer size (small, medium, or large). The buffer will produce a great increase in speed so it is wise to give this as much space as you can afford. Be wary of using a large buffer size on an unexpanded machine, though.

The second thing to set is the efficiency. Obviously, the best efficiency means that the file should be optimised to the smallest amount of

space, but it will also take longer to crunch.

You can also set the de-crunch colours. This is just a bit of fun, really. As it works, it simply flashes the screen using a myriad of coloured bars, and looks rather similar to the way the good old CBM used to look as it loaded games. In order to let you know that something is going on, *Powerpacker* will cycle the colours on workbench or the printer. There are a multitude of other preferences but they are strictly the domain of the more technically minded. If you want to find out more about them read or print out the doc file on the disk.



Setting up a script means you can leave Powerpacker to do the work whilst you get your feet up.

THE CRUNCH

To start a crunching operation, simply select Load from the Project menu. A requestor will pop up asking you to select a file to load. Navigate around the directories using the gadgets and options to select the file you want. Select OK and as the file is loaded in it will automatically be crunched.

A percentage timer will appear showing you how far there is to go with another percentage showing how much space has been saved. If at any time during the crunch you get bored or decide that you wanted to use different settings or you can abort the crunching process by holding down both mouse buttons.

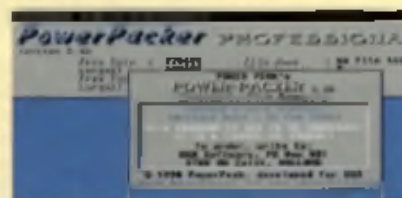
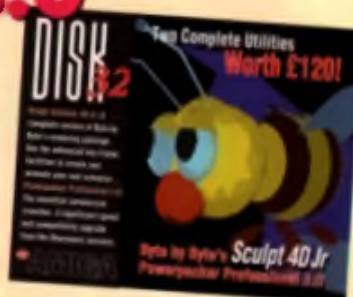
When everything is finished just use the save option to re-write the file back to the disk (or another disk). Data files will automatically be given the '.pp' extension. This has no particular evil or arcane significance, but it does make it a bit easier to work out why VILBM won't work with what you know to be a picture file.

To really get to know *Powerpacker* you should read the doc files on the disk, but you can easily get through the next twenty years without ever needing to know whether you should allocate BSS to Chip.

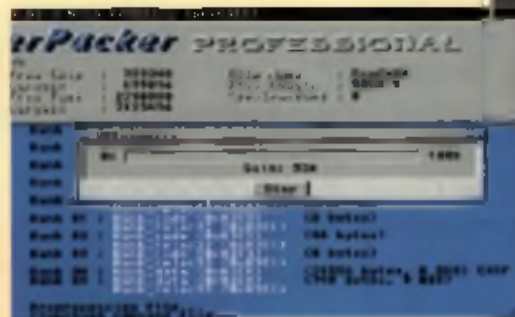
DEMO

Also on this month's utility disk is a demo of the very latest version of *Powerpacker V4.0*. This new version takes advantage of some of the special features of *Workbench 2.0* (if you are lucky enough to have it) and also includes full **ARexx** support.

The demo version will allow you to load in files, see the new progress display and requestors. However, you won't be able to save the files again once you have crunched them - after all, it is only a demo. Luckily we are doing a great upgrade deal for readers of CU. See the coupon on page 198.



Powerpacker Professional has support for overlays. Now you can crunch OSpan!



The latest version of *Powerpacker* has ARexx support for inter-process communication as well as support for all the new screen modes available with the Enhanced Chip Set.

SUPPORT

Behind every good utility there is a good support file. The PP range of files are flexible and useful - even if you never use *Powerpacker*. *PPMars* is a replacement for *Workbench's* *Mars* utility, in addition to reading standard text files, *PPMars* will enable you to read crunched text files immediately - without the need to de-crunch them first.

PPShow is a similar utility which will replay animations. To see either of the files you must have the *Powerpacker* and *requestors* libraries in your workbench directory. To install these libraries simply boot up an *Workbench*, open a shell and type:

```
copy CU32:libs/requestors.lib libs:
copy CU32:lib/powerpacker.lib libs:
```

The libraries are now installed and you will be able to run *Powerpacker* or any of the utilities even if you have not booted from the CU32 coverdisk.

SCULPT 4D JUNIOR

Sculpt 4D Junior

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You're probably already aware of it, but free on the cover of this month's issue of your favourite Amiga magazine is one of the best 3D graphics packages around. *Sculpt 4D Junior* allows the user to create huge, intricately-designed solid objects, and colour or light them in any way you like. They can then either be saved as pictures to wow your friends, or, with a little effort, be used to create stunningly realistic animations.

One of *Sculpt*'s best assets is that it is so easy to use, and these pages are designed to help you get up and running with your new utility as quickly as possible. For full details on this excellent package, please refer to this issue's 24-page graphics and animation supplement.

BASIC PRINCIPLES

Before I explain what those three windows on screen are for, let's spend a moment perusing the basics of three-dimensional drawing. Anyone who has ever been involved with technical drawing will already fully understand the principles behind three-view images, and can happily skip to the next section. For anyone else, the fundamentals behind *Sculpt*'s drawing system will take a little explaining.

Everybody knows that you can't draw a true three-dimensional object in two dimensions. It can't be done. To fully display an object's size and shape on a flat piece of paper takes three drawings, one of which is to represent a view through a wire-frame model of a shape. By doing this, you can tell exactly what the shape looks like from all sides long before you've actually started to build it. *Sculpt 4D Junior* lets you create your objects in this way, building in three separate dimensions, before the program pieces them together for you.

THE TRI VIEW

The three windows shown represent the current object or area of an object which you are working on, and is shown as a wire-frame image from three different angles – from above looking down, south of the object looking north, and east looking west.

Each of the windows relates and interacts directly with the other two. Select a corner in one

cursor in any of the three windows and watch how the cursors in the other two move to give you an exact readout of where in 3D space the cursor is. If you don't understand what it's doing, then picture a glass box with a single beam of light passing through all three sets of opposite sides. The cursor is representing the point at which the light is entering the box. When combined, these inform you of where in the box the three light beams meet. It may seem complicated, but is a very clever way of manipulating points in a 3D environment.

TOTAL PERSPECTIVE VERTEX

Before you can get drawing, you need to understand how shapes are built up. Objects are created from sets of dots, called vertices, joined together with straight lines to form edges. When three edges are joined together, they form a face, and

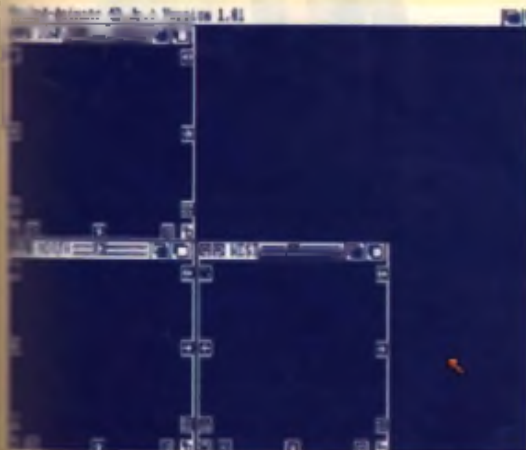
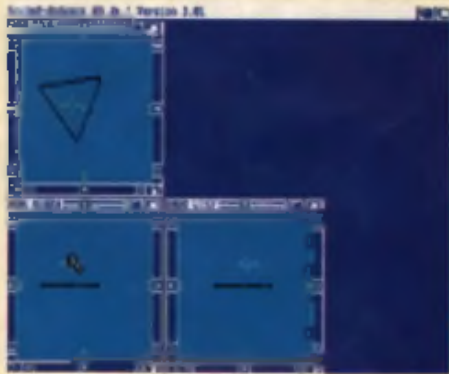
this is the only thing that *Sculpt* can display in 3D. Strange as it may seem, all objects have to be built from these triangular faces, and *Sculpt* won't recognise them as faces unless they are triangular. To demonstrate, let's try a simple exercise.

Move the cursor anywhere within the 'down' window. Hold down the left button and click once on the right to place a vertex. A small yellow dot will appear to let you know it's there. Now place another two anywhere on the same window, so the dots form a triangle. Fine, we have our three vertices. Now we have to join them. In the bottom-left corner of the window is a small triangular icon. Click on this and it will join the three points together? Congratulations, you have now made your first face.

With regard to the edging icon, it will only work if two or three vertices are highlighted (coloured yellow), thus creating one or three sides. If you find it doesn't work, then you've probably laid two vertices very close together by accidentally double clicking on the right mouse button. Redundant vertices are easily removed when necessary, but, just for now, go to the menu bar and select 'erase all', and replace your three vertices.

DEPTH CHARGING

It's now time to add some depth. Move the mouse to the centre of your triangle, and click on the mouse button to position the cursor. Take a look at the north window and you'll see that the cursor is



window, and the same corner will be highlighted in the other two. This makes it easier for you to place objects precisely, and no guesswork is involved.

Take some time now to experiment with the tri-views. Using the left mouse button to place the

LOADING

To load, switch off your Amiga for at least 30 seconds, to prevent the spread of Viruses. Insert your copy of *Sculpt 4D* and switch the machine back on. After a few seconds, the Workbench menu will appear, with the CD icon and proud in the middle of it. Double click on the CD icon, followed by a double click on the *Sculpt 4D Junior* icon which appears a moment later. The program will now load automatically.

Before you can start tinkering with all things 4D, though, the package's manual protection must be bypassed. Inside the 24-page supplement given away with this issue is a further guide to *Sculpt*'s many intricacies. Within the eight pages dedicated to *Sculpt*, you will find a list of the protection codes necessary to enter the utility. Simply enter it and you'll be ready to roll.

Finally, to load *Powerpacker 3.0* and the demo of *V4.0*, simply double-click on the required icons, and the demo or utility will load and run within a few seconds.



COPYING YOUR CU COVERDISK

We strongly recommend you make a back-up of *Sculpt 4D Junior* before using it, as it will protect your original against accidental erasure or damage. Once copied, stash your master copy somewhere safe and work from your new back-up.

To copy the disk, you'll need a blank, formatted disk. If you don't have one, load up your version of *Workbench*, and then place the disk you want to format in any drive. Wait for its icon to appear, and click on this once - its colour will darken slightly indicating it is ready. Holding down the right mouse button, go to the disk menu at the top of the screen. Find the *Initialise* option, and release the right button on selecting it. After following the prompts to swap disks, a requester will appear asking you if it's OK to initialise the disk in DF0s. On answering yes, another window will appear, informing you that the disk is in the process of being formatted.

Once it has finished, remove the disk and insert your *Sculpt 4D Junior* disk. Click on it once to highlight it, and hold down the right button. Go to the *Workbench* menu and select 'Duplicate'. Follow the on-screen prompts to make a back-up of your master disk. Once the process is complete, click on the copy you made and select 'Rename' from the *Workbench* menu. Delete the words 'Copy of' from the disk name and you're ready to get started.

Remember, once finished, put your master somewhere safe and only use your new copy.

positioned in roughly the centre of the line. We're planning to make a three-sided pyramid, so position the pointer a little way above the cursor and click on the left button. Once you are satisfied with the position of the cursor, place a vertex. You're now ready to add more faces.

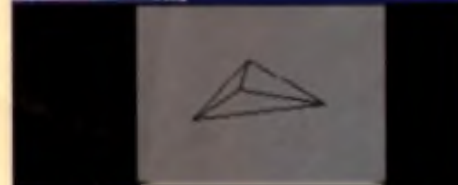
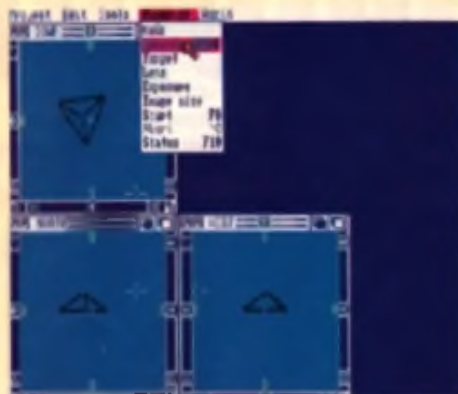
Although the edging tool is limited to three

faces, at the moment there are four highlighted. To deselect a vertex, double click on it with the left mouse

button. Do this with one of your triangle's corners, and click on the edging tool. Repeat this on the other two, and - voila! - there is your finished pyramid!

OBSERVING

For a quick update of your work so far, move the pointer to the down window, and click in an area away from the shape, resizing the windows if necessary. Click with the left mouse button, and go to the north window to add some height. Then go to the 'Observer' menu, and drag the pointer down to your required position and release the mouse button. Go to *Mode*, and ensure it's in *Scanline*.



Return to the 'Observer' menu, and drag it down to start before releasing the button. If all is well, in a second or two you will see the outline of your pyramid. You can't see it properly yet, though, because it still needs to be lit. To exit the picture, place the pointer anywhere over the picture and press the left button followed by the right. The picture will now disappear only to be replaced by the tri-view screen. For the aforementioned illumination, you're going to need a lamp or two - for the most part, one will suffice, though. Position the cursor near

the observer position (marked with a small 'O') and select *Add Lamp* from the edit menu.

For background, go to the world menu. Select *sky*, and change the box at the top from 'None' to 'Solid' by clicking on it with the left button. I'm sure you know how to use slider bars by now, so set the colour of the sky by mixing the Red, Green and Blue bars until you reach a colour you deem suitable.

Select *ground* from the menu, and repeat the colouring process.

Go to the *observe* menu and click on *start* to see your first 3D work of art. OK, so it isn't fabulous, but you can't deny that it was very easy. With the basics sussed, we'll move swiftly on to some of the more advanced aspects, including a look into the basics of animation. For full information, though, read the instructions in our supplement, which further explain the different icons' functions and will help you get the most from the program. In addition, the supplement's guide also expands on the basic features we have covered here.



IMPORTANT! Whilst every attempt is made to ensure that the contents of the coverdisks match the details given on the labels and in the magazine, we cannot be held responsible for any last-minute changes. Also, although we always check thoroughly for viruses, we cannot be responsible for any damage caused by the contents of the disk. If you have problems regarding your disks, please DON'T call the CU Office as there's very little we can do. Instead, ring PC Wise using the number listed in the MONEY LOAD? panel. Thank you.



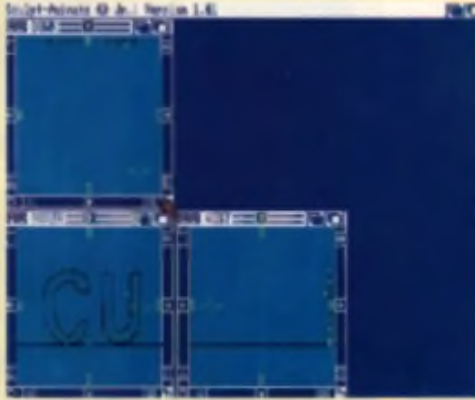
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HAVE A DRINK WITH CU

The title of this odd picture is 'Have A Drink With CU' (it should be sub-titled 'And Don't Expect Them To Pay'), and it isn't hard to understand why. Good as it may look, it didn't take a great deal of time or effort to do, and I produced this picture after a mere two hours of loading and getting to grips with *Sculpt* for the first time.

To start with, you'll need to construct the CU lettering.

There are two methods with which you could do this. The first is to plot each vertex, and join the lines up one by one. Or, alternatively, you can use the curve tool, which is found in the tools menu — but make sure you are working from scratch. On selecting the curve mode, the cursor changes to indicate the mode switch. Curve allows the user to plot a vertex in the normal way, but keeping the left mouse button depressed whilst moving the pointer releases a rubber band which stretches from the last plotted vertex to the cursor. Subsequent vertices then allow you to draw a plotted curve, which automatically links itself as it goes. To start the lettering, draw the outline of the letter C in the north window, and, when you close the loop, control will return to normal. Select curve again and draw the outline of the letter U.



EDGING TOOL

Rendering the picture now would have no effect as there are still no faces to the letters. To rectify this, go to the tools menu, and select the edging tool. By keeping the right button depressed and using the left button to start a line, this allows you to draw the edges between two points. Work your way through the two shapes, zig-zagging through them to fill them with triangles. You now have the letters CU standing proud, but still a little flat. To letter them up, you need the extrude tool.

Make sure all the points are selected, and click on the extrude tool's icon. After a moment's pause the cursor will change, and clicking anywhere on the down window will cause a strange effect. The reason for this is that you are placing another copy of the selected object on screen at the cursor position, and



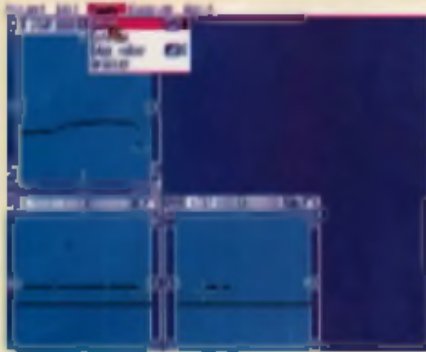
“Cruise for a Corpse was murderously good, The Secret of Monkey Island sent everyone ape, but now ‘point and click’ graphic adventures are set to undergo a **REVOLUTION**”

{AMIGA FORMAT}

...All real change must come through revolution...

Anon

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the computer is joining them with connecting edges. Move the cursor to above the original CU object and press the left button. Once you have lined it up, click the right button and you'll have your monolithic CU logo.

SPIN THE BOTTLE

The bottles and glass may look impressive, but you'll be amazed when you see how little work you need to create them. Scroll the tri-view window to the place where you want a bottle to appear and select the curve tool. Imagine the bottle had been cut into quarters along its length, and draw the line its edge would follow. Position the cursor at the centre of the base of the bottle, and select 'Do Spin' from the Edit menu. Enter '18' and '360' on the two prompt windows, and watch the program draw the bottle for you.



At the moment, the bottle is lying down, and it needs to be upright. Easier done than said. Scroll the tri-view windows so that the bottle is the only thing on view, and then click on the select all icon in the north window to highlight its vertices. Then use the rotate icons to turn the bottle upright. Simple. Repeat the same process for any other bottles and glasses you may want to add.

Using the same method as before, create the sky and ground. This time, however, take a look at the north and west windows. Along the middle is a straight line, denoting the ground level. Any part of an object below this won't be seen, and any object not touching it will be seen to float. To reposition an object, make sure it is the only thing shown in the windows, and select its vertices with the select all gadget. Using the grabber from the tools menu, pull the object around in either the north or west

TRI VIEW WINDOW GUIDE

Dotted around each of the three windows are a large set of icons. Here's a guide of what they are and what they do:

1. Rotate Anticlockwise/Clockwise: Rotates any selected objects around the centre of the window.

2. Front/Back: Standard Workbench icons. These deal with the positioning of this window when overlaying others.

3. Reverse View: Looks at the object from the opposite side.

4. Expand Tri-View: Look at a larger area via the tri-view

5. Shrink Tri-view: Zoom in on a smaller area

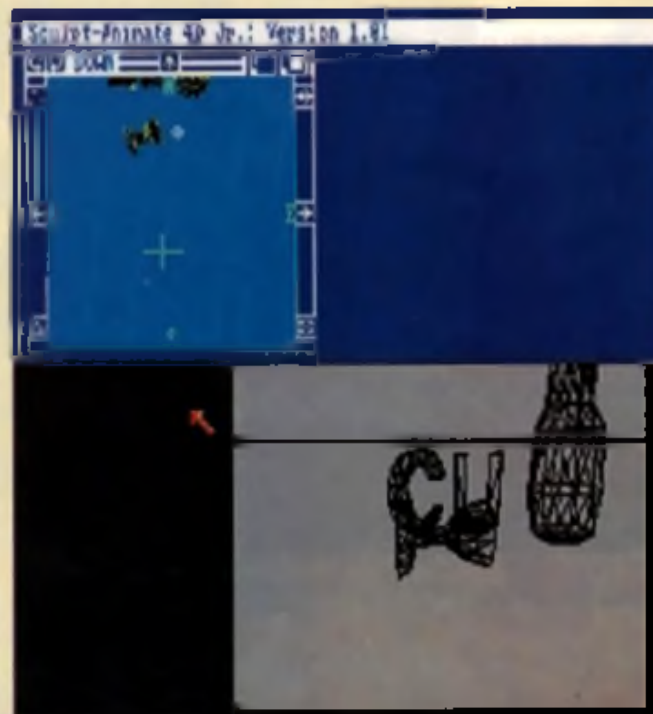
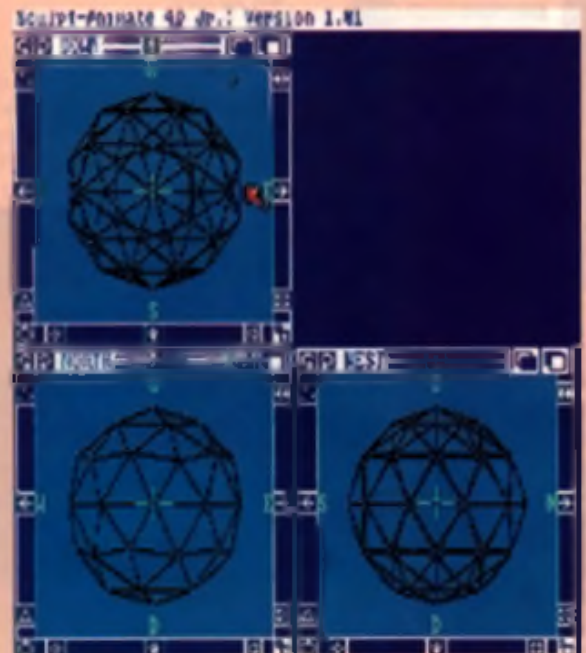
6. Centre Tri-View: Centres the tri-view window on the current cursor position.

7. Grabber: Used for moving already placed vertices. Click once to activate. Click again to deactivate.

8. Edge Builder: Click on this to connect two or three highlighted vertices.

9. Select: Highlight all vertices in the tri-view window. Click again to deselect.

10. Move Tri-View: Scrolls the tri-view window around the main area.



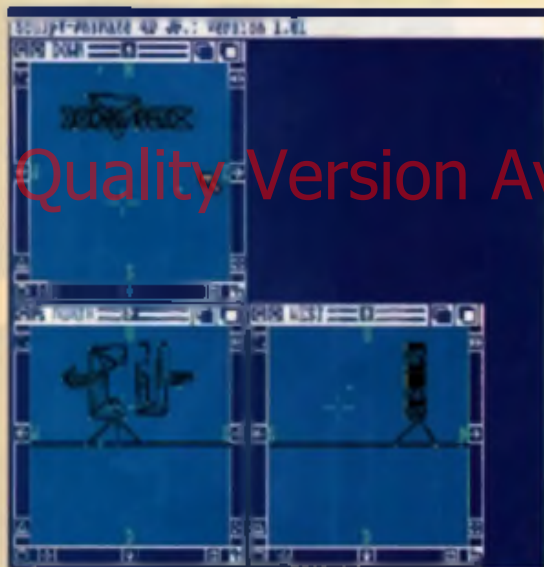
windows to place the bottom edge on the line. With the grabber, you can also move the objects closer together to improve the framing of the picture. Conversely, place the observer away from the objects, just above ground level, and place the target at the same height somewhere in the middle of your picture. Place a lamp, as before, close to the observe point to give the most light on the images - although some really great effects can be attained through unusual lighting. Now render the final image. In the meantime, as the picture is being rendered, you can muse on just how easy it was to do...

COVERDISKS

GETTING MOVING

Animation is fast becoming one of the Amiga's strongest points, particularly with packages like *DPaint IV*. *Sculpt 4D Junior* also allows you to animate, and direct mini movies with your freshly-created 3D objects. Like everything else you've seen so far, the process is very easy. *Sculpt* uses a system called Key Frames for its animation, which means that you only need enter key frames for your sequence. The computer then fills in the gap using a system called Tweening, and this saves a great deal of time. Basically, you can set, say, five points, and the Amiga will link them so that they flow smoothly into each other.

The animation we're going to produce is an eternally-spinning CU weathervane. Before the animating can begin, though, the screen must be set up. In this case, we're going to have our already drawn CU lettering (albeit with an arrow running through them), set atop a tall pyramid. Create the pyramid from triangles as before, and create the 3D CU lettering using the curve and extrude tools. Using the grabber, place the lettering on top of the pyramid and the pyramid on the ground. Make the middle of the CU lettering the Observe target and place the Observe position somewhere down south. Place a lamp near the observe position, and colour the scene sky and the ground.



**“Looks set to become
Britain’s answer to
Sierra and Lucasfilm”**

{Paul Presley - PC Review}

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*...All wickedness is but little
to the wickedness
of a woman...*

The Bible • Apocrypha 1b.25:19

Place the cursor on the down window over the centre of the pyramid, and click on the 'Centre window' icon. Select the CU logo, and you're ready.

TAKE YOUR PICTURE

Go to the load menu, and select Load Take. Enter the save name of your new animation, and go to the Modify Take option. Under 'Number of Frames'

enter 36, and click on the word 'Global' to change the window to the Frame window. We're going to enter our key frames every 6 steps from 1. Click on the first frame of the roll of film, and click on the word 'No' to make Frame 1 a key frame. Do the same for frames 7, 13, 19, 25, 31 and 36. Click on frame 1 again and then click on 'Save Key Frame' to store the current frame, and 'OK' to close the

box. Now to work on the next key frame. As the weather vane has to rotate through 360 degrees, it has to rotate through 60 degrees for each key frame – with the exception of frame 36 in which it only has to rotate 50 degrees. If you enter the last frame, the program won't be able to complete the animation, and to rotate the vane, make sure the CU lettering is selected and click on the clockwise rotation icon 12 times. Then go back to the 'Modify Take' window and save it as the next Key Frame.

TOTALLY WIRED

Do this for each frame and return to the global window. Click on 'preview'. After a couple of minutes, you'll be able to see a wire frame version of your animation, which will no doubt knock you silly. If you click on 'Render All', the machine will begin the lengthy rendering process. Be



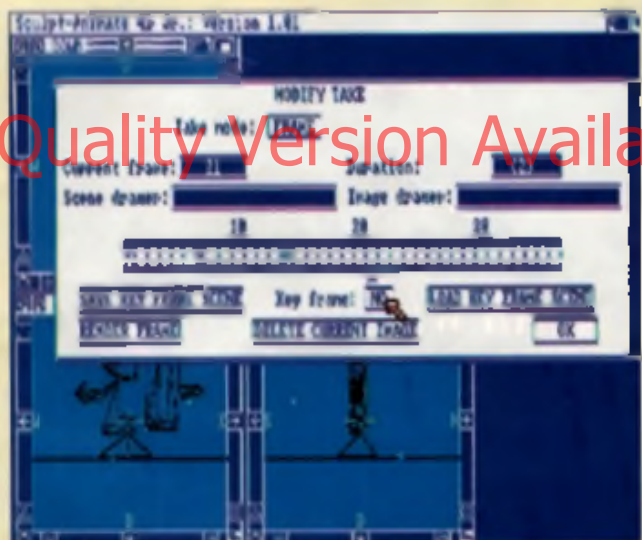
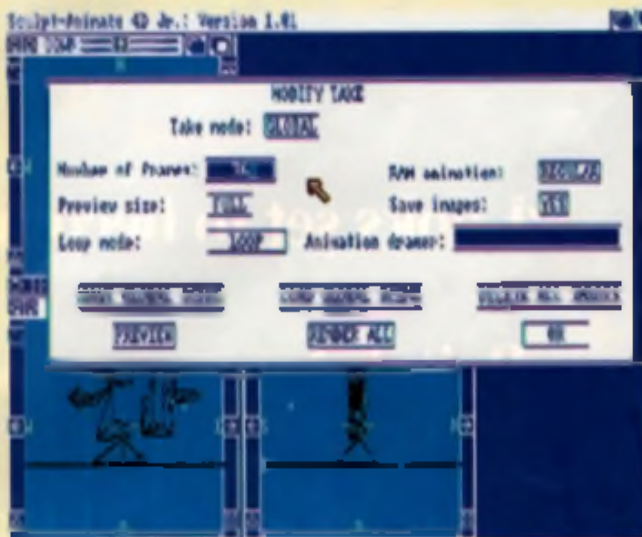
warned, though, as this takes quite a while, but it is worth it for the impressive, full-colour and solid object animations it creates.

YOU'RE ON YOUR WAY

And that, as they say, is all there is to it. Obviously there's quite a bit I've missed here, but you should be suitably impressed already. Remember, full details on all the icons and further instructions to the program can be found in our supplement – Happy rendering!

IF YOUR DISK WON'T LOAD?

In the unlikely event of one of your CU disks not loading, remove all external cartridges and peripherals and try again. If it still won't load, pop the offending disk in an envelope and address it to: **CU DISK RETURNS, PC Wise, Merthyr Industrial Park, Pentrebach, Mid Glamorgan . CF48 4DR.** They will then test the disk and send a replacement as soon as possible. Ring the PC Wise Helpline for any urgent problems. It's open between 10:30 and 12:30 during week-days and can be reached on: (0443) 683233. Whilst CU Amiga makes every effort to check cover disks for all known viruses, we can accept no responsibility for possible damage caused by viruses which may have escaped our attention.



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COVERDISKS

EXAMPLES

This exciting sequence was created using *Sculpt 4D Jnr's* powerful tools.



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**“Acclaimed as a
revolution in
game design,
Revolution Softwares’
goal is to change the
conventions of
role-playing games
forever with...”**

{GAMES X}

*...Art is either a plagiarist
or a revolutionist...*

Gauguin

It's creepy and exclusive, It's quality condusive,
It's absolutely mahoosive...

THE ADDAMS FAMILY...

That's right, in an amazing coup, CU Amiga has trounced the competition to bring you an exclusive demo of the most eagerly-awaited game this year. So, get ready for an exploration of those ooky, spooky Addams Family...



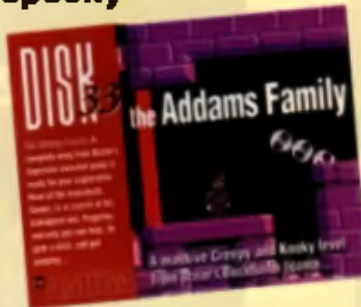
DISK 33

Easily one of the most eagerly-awaited licences ever, *The Addams Family* scoops an almighty 95% in this month's review pages, and we are proud to bring you a complete playable level.

Billed as the Amiga's answer to Mario, *The Addams Family* is a massive platform romp, with the player assuming the heroic role of Gomez Addams. Owner of the massive mansion the game is set in, Gomez's family - his wife Morticia, his cranky Granny, slap-head Uncle Fester, and his children, Wednesday and Pugsley - have been kidnapped by an unscrupulous property developer who has whisked them away until Gomez hands over the deeds to his house.

Obviously, Gomez is loathe to do so, and consequently he must explore his rambling property and attempt to rescue his family members from their horrible fate. Our demo features an entire wing of the five-stage building - comprising some forty screens - and is set within the house's dank and creepy dungeons and torture chambers. Somewhere within these winding catacombs is young Pugsley, but if Gomez is to locate him, he will have to run the gauntlet of the many sub-human creatures who inhabit the lower regions.

Gomez is controlled using the joystick (see panel), and can be made to run, jump, change direction mid-leap, and duck. Starting at the entrance to the level, each stage scrolls either horizontally or in the customary eight directions, keeping Gomez central at all times. As progress is made through the dungeon, the screen layouts get rapidly more tortuous with the nasty-laden plat-



forms giving way to revolving axes, guillotines, and spiked traps.

Additionally, the creatures and obstacle content is already stepped up, and this paves the way to a final confrontation with the 'Boss' creature who is presiding over Pugsley.

Obviously, the odds are stacked against the diminutive Gomez, and the success of his rescue missions depends on his health. Displayed to the left-hand side of the screen are a series of hearts, and these depict our hero's health. On contact with any of the nasties, these are gradually drained and should his back-up supply of lives be fully depleted, the mission is prematurely ended. This means that the house will become rubble and, eventually, a car park - 'Game Over', effectively.

It's not all bad, though. Dotted across the levels are a series of odd-looking devices and objects which can be used to aid Gomez's progress. The first is a flashing ball which grants our hero with temporary invulnerability, and is indicated by a sparkling trail which follows in his wake, and the second is the 'Fez-Copier'. This unusual device is a Tommy Cooper-style hat with flying capabilities and can be found circling the ceiling in certain rooms. If Gomez keeps up at the circling Fez, it attaches itself to his head and allows him to fly past particularly tricky areas. By repeatedly pushing up on the joystick, Gomez's flightpath can be extended, but it will eventually expire, and Gomez will be back to using Shank's Pony (i.e. walking). Also scattered throughout the house is part of the



When Gomez is hit, he will be temporarily invincible. He flashes to indicate this, so use the time to dodge any hazardous areas.



The swinging 'Space Hoppers' can be jumped over or ducked. As you get further into the dungeon, they speed up, though.



Each hit from a nasty or a swinging obstacles relieves Gomez of one energy point. One more hit, and he's history...

Loading Your Demo...

To load your demo, simply insert the disk into DFE, and it will auto-boot. If it fails to do so, then turn your machine off and remove any extra drives, printers or cartridges, and try again. The demo works on any expanded or unexpanded machines, but if it still fails to load, pop it in an envelope and send it to the usual PC Wine address which can be found elsewhere in this section.



These critters jump up and down spitting axes at regular intervals.

Spikes are generally lethal, but Gomez can survive for a period.

Buzzsaws swing round at regular stages - avoid at all costs!

Twenty-five Dollars' awards Gomez an extra health point.

The beautiful but hide! Memento Guiltina - don't lose your head...

CONVERTIBLES



Located somewhere between corridors is a bonus-laden chamber



Monster Mash Although most of the enemies are extremely hazardous and best avoided, Gomez can often use them to his advantage. The cannons, for instance, fire a regular pattern of shots and, with perfect timing and positioning, Gomez can jump into the path of an incoming cannonball and bounce off it to reach any cash or bonuses that may have been previously inaccessible.

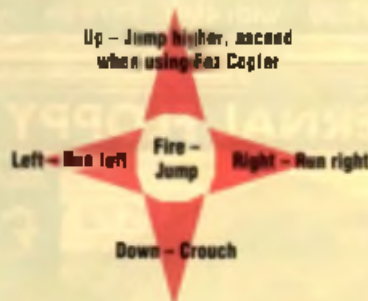


Unfortunately, there are also several creatures who are readily equipped to deal with your back-breaking antics. These are often armed with spikes and, should Gomez try and squash them, they will reward his efforts with a spike up the jockey. Firepower or running over them whilst invulnerable is the only way to deal with these - spikes that do stay well clear...

Family's vast wealth, and Gomez can trade in any collected money for much-needed health points. Shown as Dollar signs, on collecting twenty-five of these, Gomez is rewarded with an extra energy unit, whilst one hundred grants him with an extra life.

The mission is over when Gomez has bounced the 'Boss' creature to death and Puggaley is free. You will then be given a password which is compatible with the complete version of the game when it is released. But, be warned, it will be a while before you get it...

Controlling Gomez



Now
let the game commence...

LURE OF THE TEMPTRESS

*...I can resist everything
except temptation...*

Oscar Wilde



Recently-fired cannonballs can be used as handy sleeping arrows

The exit to this stage - but not the end of the demo by any means!

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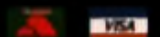



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Amiga version





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A lot of people say that the Amiga is not in fact the all-out, up-front King of all machines. 'Ha', they say, 'my PC486 with SuperVGA is much nicer'. That may be true, but what you have with an Amiga is a system based around 80s technology, not 70s. The Amiga has the ability to metamorphose into an even more stunning beast and it does this better and at a lower price than any Mac or IBM system.

Having bought an Amiga you have automatically become a member of an exclusive club. It's not a club run by business, nor by the company who manufactured your machine - it's not even run by the software houses that support the machine. The club is run by Amiga users - all of them. It stretches from the bizarre fringes where coders stay up late for weeks to bring you a demo, to the more mainstream user who just enjoys using his A500. The Amiga binds people together - it is a machine with community spirit.

Nobody is suggesting that some people don't buy Amigas mainly to play games, but it is very short-sighted to believe that they don't use their machine for anything else.

In fact, it's what makes the Amiga such a great games machine that enables it to perform so well in other fields. The graphics capabilities have opened up the realms of DTV and DTP; the stunning sound makes it excellent for music and multimedia applications; and its versatility in emu-

lating the Mac or PC makes it an ideal candidate for networking. Just because someone buys an FST Trinitron Super-Surround Sound TV to watch sports programmes on, it doesn't mean they won't occasionally enjoy Red Dwarf, too. People who say that the Amiga is only good for playing games are generally people who have bought PCs and are a bit upset because they've found that, say, an Amstrad 1512 is not very good for playing games on.

Yes, the Amiga has its detractors. Once upon a time, it was compared to the ST. These days, it is compared to more professional systems. The Amiga is fighting the age old battle of innovation versus establishment - the new blood versus the old. It can only be a matter of time.

While we're waiting, as a spot of entertainment, we'll take a look at some kit that equals or beats anything available on any home computer. Prepare yourselves for the ultimate doombringer - the mother of all Amigas...

the ultimate amiga

**The Ultimate
Set Up... A
selection of the
hardware and
software which
help make the
Amiga great.**

1 A3000

At the moment this is still the hottest Amiga you can buy. Running on an 030 chip with a 62 math coprocessor this baby is fast. 2Mb of chip RAM and a built-in flicker-free puts paid to any worries about graphical ability. Its small size means you can legitimately include it as a part of any desktop solution.

2 MONITOR

The Amiga's custom multisync monitor can handle all of your graphic

requirements, even the new productivity and super hi-res modes. The idea of a multisync is that it can tune in to the frequency of your display so that enhanced video modes, such as interlace, will appear as stable as a normal hi-res screen.

3 SOUND ENHANCER

Omega Project's sound enhancer is an excellent unit if you care about your ears. Essentially it does what Commodore's Filter should have done. Everyone knows that to listen to music properly you have to turn the Filter off (usually accompanied by the power light), or it sounds like it's being played through an old sock (the Socks and Rugs and Knocks and Ode syndrome). The Sound Enhancer lifts and separates, leaving the table to shatter

glass and the bass to shift furniture, just as nature intended.

4 GRAPHICS TABLET

The ability to draw is a great gift. The ability to draw using a mouse as your input device is a miracle. That is why most artists prefer to use a graphics tablet. The genius tablet is particularly excellent as it comes with a ready-made template for *DPaint*. Other systems are available to give you a pencil control or a wider pad for more specific tasks.

5 PRINTER

The printers supported by the Amiga are generally the same as those supported by any other computer. You could even drive a L'Intronic film processor direct from the Amiga given the right software.

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4 SCSI DRIVE

The ability to connect SCSI units to the Amiga (via a suitable interface supplied with most hard drives) means that users can take advantage of the vast range of devices usually intended for Mac and PC machines. Hard Drives, Optical Drives, Tape Streamers and Scanners are all out there waiting for you.

5 GRAPHICS Board

The Harlequin sports the PC's Super VGA mode. It's a 32-bit card capable of displaying 24-bit images with enough bits left over to provide sync for chromakeying and other effects. There are many other 24-bit framebuffer cards for the Amiga but unfortunately there is no standard as of yet.

6 SAMPLER

The *SunRoze* samplers haven't made it to the UK yet. These promise 16-bit sampling capability. At present, the best 8-bit sampler on the Amiga is *Audio Engineer*, but Microdeal's *AMAS* combines an 8-bit sampler and a MIDI interface.

9 MUSIC

The Amiga may not yet be the musician's first choice for a studio setup but there is a large amount of professional software available. The *KCS Sequencer 3.5* is generally regarded to be the best available on any home computer. The lack of built-in MIDI ports may have held back the Amiga initially but they are so commonplace and cheap these days that it is no longer seen as a serious obstacle.

8 PROGRAMMING LANGUAGES

Almost all popular available languages are available on the Amiga, especially if you use a PC bridge-board. Assembly language is the first choice of crack programmers and the Amiga is well represented here by Hisoff's *Devpack*. The Amiga is becoming better known as a developer's machine because its multi-tasking ability allows for easier debugging.

7 GRAPHICS

Graphic applications are definitely the realm of the Amiga. Not only is it possible to create stunning artwork with packages like *DPaint IV* and *TV Paint*, it is also incredibly easy (as *Roll Harris* has proved on his shows).

2 DTP SYSTEMS

No major publishing house in this country is using the Amiga yet, but in North America several projects have been set up. The much-missed *Amiga Times* was produced entirely on the Amiga. DTP on the Amiga is catching up with Mac systems thanks to an excellent range of products like *Professional Page* and *Pagesetter II* from Gold Disk.

3 MULTIMEDIA

Given its ability to multitask and the astounding graphics and sound capabilities of even a bog-standard Amiga, it certainly ought to be first choice when it comes to multimedia. There are quite a number of good packages available such as *AmigaVision* and *Showmaker*.

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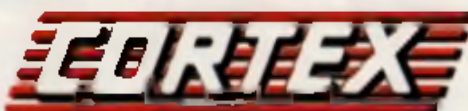
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IN ADDITION...

HARD DRIVES

Once you have a SCSI controller you can attach virtually any Hard Drive you like. Most drive manufacturers produce a SCSI system, including Quantum, who are generally regarded as the best. Call Almathera Systems on 081 683 6418. SCSI devices also include Optical Drives and other methods of mass storage. The IBM unit pictured here is available from Power computing, Unit 8, Railton Road, Woburn Road, Industrial Estate, Kempston, Bedford MK42 7PN (Tel: 0234 843388).

SAMPLERS

Apart from the *SunRize* the best samplers are *The Audio Engineer* and *AMAS*, the latter of which incorporates a MIDI interface. This is particularly useful for musicians with other MIDI equipment - velocity-sensitive keyboards and synth modules, for example. Suppliers Microdeal can be found on 0726 680020.

24-BIT CARDS

At the moment, the *Harlequin Plus* board is one of the best 24-bit graphics card available on any system, at least the Amiga. Features like real time gamma correction, 4-bit overlays, colour-cycling and 15 bit true colour make it the only choice for professionals. Creators, Amiga Centre Scotland, have recently moved, and their new number is 089 887583. Other contenders include the GVP IV 24 (try contacting Omega Projects on 0925 763946) and, of course, the considerably cheaper *DCTV* from Digital Creations.

PRINTERS

Printers are fairly generic, although you may have trouble finding a driver to act as a go-between between it and your machine. At the high end of

With so many extras available, it's hard to know what to buy. *CU Amiga* aims to help with the definitive guide to the top accessories for your Amiga...



A reasonably professional set up can be constructed for very little. Here, a stock A800Plus is joined by a Fujitsu B200 printer, a Philips monitor, and a selection of PD Software - the whole bundle comes in at just over £1000.

the market, a colour Postscript machine (one that you can actually fit on your desktop) - such as the NEC Colomate PS - is hard to beat. But then again, at a rather large £8300 it would have to be.

A sensible laser printer like the Canon LBP-4 (which can be picked up for around the £1000 mark) will provide you with reliable output. For the more financially challenged, a slightly less robust Bubblejet should suffice. The Fujitsu B200 is a good bet, so give them a call on 081 5734444. Finally, at the really cheap end, you can't beat a Star or a Citizen.

SCANNERS

The Sharp Jx300 is the nicest in full-colour A4 scanners with suitable software for the Amiga. It's smaller relative, the Jx100, is excellent if you won't need to scan anything larger than a colour print. Both are available from Silica (081 309 1111).

Similarly, if you are looking for a black and



CANON LBP4

white hand scanner, they don't come any better than the new model just released by Power. Call them on 0234 843388 for more information.

DIGTISERS

Rombo's *Vidi* unit used to be the best grabber/digitiser at any price. Now, however, there are more contenders - especially in the ever-growing 24-bit range. Marcam (0604 7004FF) produce some pretty impressive cards, and hml in from Germany is *V-Lab*, which promises to knock the 24-bit spots off everything currently available.

GRAPHICS TABLETS

The Genius Tablet from DataL offers 4000dpi resolution and comes complete with mouse replacement software for £129.99 - it certainly makes life a great deal easier. DataL also deal with other more bizarre methods of control. Call them on 0782 744707.



GRAPHICS TABLETS



A3000

the ultimate amiga

DTP

There's still nothing to top *ProPage*, which is now in its third incarnation. Full ARexr support, CompuGraphic and Adobe font handling, advanced layout features and unrivalled display options make this package the professional's first choice.

On the cheaper side of things, *Pagewriter II* is worth looking at. Don't be fooled into plumping for the old and outdated 1.4 Version, as *V II* is a serious package which can handle almost all of the features available in *ProPage*, with the notable exception of colour output. Finally, a PD package is promised soon from 17-8a.

SPREADSHEETS

Gold Disk have this area sewn up with their amazing *Professional Calc* package. Not only does it handle over 130 functions but it also includes ARexr support and a hotlink to *ProPage*. Gold Disk software is available from many outlets but try Precision Distribution (081 5433500). Also worth a mention is *Finance Manager 2*. It's not exactly a Spreadsheet, but a useful personal account manager nevertheless. Try Microdeal on 0728 680020.



RODINE SCSI DRIVE

GRAPHICS

DPaint IV from Electronic Arts is the benchmark for all Amiga art packages. Most compilation packs carry an older version, but *IV* can handle HAM images and is also capable of performing tricks that other packages can only dream of – as a result, the competition for *DPaint* is scarce. Electronic Arts are on 0753 549442.

MUSIC

KCS Sequencer 3.5 is quite simply the best you can get. Although a lot of MIDI software has been released for the ST (which features more heavily in studios than the Amiga), this package has been judged by experts to be better than any of its competition. *KCS* is £279 from Zone Distribution, a professional organisation which caters exclusively to musicians. They may also be able to help you choose a system to suit your needs. Call 081 766 6584.

THE EARLY

Everyone must know by now that Commodore is the name behind the Amiga, but it wasn't always that way. We chart the history of the world's greatest home computer from when it was just a twinkle on it's designer's monitor to the present day.



AMERICAN PIE...

The Amiga started life in true American Dream style. Back in 1982, a group of designers left Atari and headed west to Silicon Valley. Partially funded by independent investors, they started up a business called HI-Toro, whose aim was apparently to break new ground in joystick manufacture. Overtaken by the paranoia that rules the computer industry, whilst the rest of the companies thought they were fiddling with microswitches, secretly they were making their plans for a new, amazingly advanced computer.

Their plans involved a highly innovative machine, code-named Lorraine. Jay Miner (who had helped develop the Atari 800) and the rest of the team planned to develop the ultimate, no-compromise games console. Unfortunately, as the project neared completion, it looked like the bottom was dropping out of the home games market. The future for all games machines looked bleak, never mind one that was still in production. Investors started getting the jitters and bailing out before what seemed to be inevitable happened. Silicon Valley had woken up to the crash and burn syndrome and few people were betting their money on notoriously unreliable techno-junkies who promised

First and last. Above, the new A600. The Amiga for tomorrow has come a long way from the original A1000 (below), although some would argue that it hasn't progressed enough. However, it's nice that the A600 can be bought with a hard drive already installed.



YEARS

a whole new concept in hardware.

At this time, the prototype was nearly finished. The hardware was ready to roll but, unfortunately, the wonder machine still lacked an Operating System. Hi-Torro didn't reckon anyone would buy the machine just to look at the circuit board, so they scraped together whatever spare cash they could and tried to find someone who could knock out something. In the end they got more than they bargained for.

The job eventually went to a British firm, Metacomco. Tim King and his team based the prototype AmigaDOS on a little known multi-tasking operating system Trpas, originally intended for mainframe systems. This visionary effort made the Amiga the first true multi-tasking home computer and probably saved the entire future of the Amiga. With AmigaDOS, all the technology that had been developed to make a great games console was now provided with the means to become a tool for more serious applications.

THE FIRST GLIMPSE

Amiga, as the company was now called, displayed their first machine at the Consumer Electronics Show in January 1984. In those days, the insiders were just a collection of boards crudely wired together and the Kickstart ROM had to be loaded in off floppy. It was undeniably a prototype, but people started getting very interested. The brokers were interested enough to put up some more cash, allowing the further development.

Soon the collection of boards became custom chips - Paula, Agnus and Denise, collectively called the PAD. But by now the sharks were circling. There was only one way to go - public. A share offer was set up with an opening price of \$2.

One interested party was Jack Tramiel, freshly arrived at Atari after defecting from Commodore (and leaving them with some unpleasant tax problems). Thinking he had Amiga over a barrel, he offered around \$1.60. Amiga were starting to get a bit desperate, so they decided to accept the offer. This got Tramiel thinking. Never one to miss a bargain he dropped his offer again. Then a very strange thing happened.

In some bizarre Twilight Zone experience, Commodore did something rather intelligent. Whether their motives were actually based on some amazing foresight or just a desire to get back at their former MD will probably never be known, but at the eleventh hour they stepped in and doubled the original offer to \$4 per share.

It was a price that couldn't be sniffed at but, amazingly, it was. Amiga added an extra 25 cents to the price. Commodore were a little surprised at this, but, after a bit of thinking, they decided to cough up.

COMMODORE TAKE CHARGE

The first thing they did was spend even more money, paying off outstanding debts and closing down the joystick part of Amiga (which was only a cover operation anyway and hadn't really contributed much to the future of computing - unless

you think that a surfboard controller is any great contribution to the future of mankind). In fact, the boys at Commodore decided to set up a whole new department, Commodore-Amiga, to deal with all future development of the product.

When the A1000 was formally launched in Chicago mid-1985,

Commodore laid on a spectacular glitzy launch featuring Debbie Harry and Andy Warhol. The industry was a little surprised at all this glitter - it was just another computer, after all - but there was a spirit of adventure about the Amiga project, similar in some ways to the atmosphere of Apple in the early days.

Initially, the A1000 was left behind in the 16-bit surge. Atari came up with the ST which, unbelievably in these enlightened times, was considered to be the future of home computers. The A1000, some cruelly alluded, was named after its price tag - a hefty grand. It also had an undeserved reputation of being difficult to use. Many developers shied away, though MicroIllusions and Electronic Arts jumped on-board fairly quickly.

The future of the Amiga again looked in jeopardy. The market claimed the price was too high, Commodore responded that technology that good was worth paying for. Then, in 1986, an entry-level machine was introduced - the A500. Although ostensibly a smaller version of the A1000, the A500 had been greatly improved. The circuitry had undergone a massive overhaul and new expansion possibilities had been created. The A500 put the Amiga on the map.

Still more expensive (but only just) than the ST, the A500 drew on the call following the A1000 had built up. Since software houses had been reluctant to come up with the goods, the dedicated users had taken it into their own hands to demonstrate the power of their machine - Amiga PD was born. This made people realise that, in the end, the best was worth paying the little bit extra for.

The A500 was shortly followed by the A2000, a much more expandable and professionally oriented machine that Commodore rather hoped would capture some niche market, as Apple had done with DTP. It did catch on to a degree in the world of Desktop Video, but not really enough to make the world take notice.

A DECADE OF LAUNCHES

In May 1990, after months of secrecy and denial, the A3000 was launched. This always seemed to be something peculiar to Commodore. In fact, they denied the existence of this beast at 10.30am on the day before officially launching it at 11.00am. The new machine was set to conquer the world, building on DTV and capturing the undiscovered country, Multimedia, and aided by its faster 68030 processor and radically updated Workbench. Well, the fight is still on, but the A3000 hasn't been the success that everyone wanted it to be at the time.

September 1990 saw the arrival in the UK of the 3000UX, a Unix-compatible machine which finally enabled Commodore to claim the A3000 was a graphics workstation. Also on display was the A3500UX, a tower system boasting even more expansion slots, and the power needed to run a network. The A1500 also popped up, but it was just a cosmetic exercise to bridge the gap between the A500 and the A2000. Essentially, it is a 2000 without a hard drive but with an extra floppy. No marks for innovation.

Where was all the research and development

going? On the CDTV (Commodore Dynamic Total Vision) Commodore were racing ahead with all they could muster to bring out a CD-based home entertainment/education system before the CD-I conglomerate got their act together. The 'Baby' was shown a long time before it was sold. A lot of extra features were added to what was basically just an Amiga (although Commodore were initially rather loathe to point this out).

Last Christmas, sales of A500s forced Commodore to release the A500Plus. At last, Workbench 2.0 had made it to the lower end of the market and brought the Enhanced Chip Set with it. The new screen modes and preinstalled 1Mb Chip RAM made the machine very popular although the A500 is still on sale. A minor scare was started when it was discovered that certain software (most of it games or PD releases) wouldn't run on the new machine. To be fair, this was not Commodore's fault - all the programs which didn't work were using illegal instructions and direct hits on the ROM (which had obviously changed).

Since then, there has been much controversy over the fabled CD ROM drive, much of it over the name - A570 or A690? Nomenclature aside, the unit, proudly announced in other magazines, has spectacularly failed to appear. Commodore blame technical problems; compatibility amongst them. For a start, at the moment it does not have a through-port, so hard drive users are out of luck.

Our history catches up with the present day at ECTS, where CBM launched the A600. This is a restyled A500Plus featuring ECS and 1Mb of Chip Ram, but also has a built in modulator and sports a smart card slot. Some models will be available with internal hard drives, which in no way makes up for the lack of an expansion port - that's right, there may be a bit of a compatibility problem with the A690 there. Also amongst the enhancements are a redesigned keypad slot. How Commodore can call this innovative is a mystery, especially since the A600 seems to be nothing more than a slightly modified CDTV motherboard in a restyled A500 box with a nice £399 price tag slapped on the front. This lack of advance can only mean that once again R&D are working on something else. But what...



Head and shoulder of the A600. Although sporting a portage slot, it seems to be missing an expansion port - oh dear...



The ultimate amiga

Whilst the outside cases of successive Amigas have undergone redesigns, the insides have remained more or less the same until recently. Here is our guide to the bits that matter...

INSIDE O

1 AGNUS

This chip's name is derived from its function as an address generator. Provided with a 28 MHz clock, this chip provides all the system clocks for the rest of the Amiga. It also controls the 25 DMA channels which allow the other custom chips to access graphics or chip memory while the main CPU isn't looking.

Agnus is perhaps best known as the home of the blitter (a customised data mover which provides hardware lines, fills and software sprites) and the copper. The copper is a coprocessor which executes a display control program every 25th of a second, allowing palettes and screen modes to be changed dynamically. The copper is the secret behind interlace mode.

The original 8370 Agnus has now been updated twice, first to the 8372A (or latter Agnus) and now to the 8372B which can handle up to 2Mb of Chip RAM. The Agnus is always easy to recognise because (at least so far) it is the only PLG chip on the motherboard (the funny square one).

2 PAULA

All of the Amiga's sound capabilities are encased in this little 48-legged piece of plastic. 4 voices of 8-bit amplitude modulation sound combine to a stereo sound output. By combination the AM sources can be combined to a simulated frequency modulated signal for effects. The on-board UART (Universal Asynchronous Receiver/Transmitter) also decodes input from the mouse and joystick controllers and plays a small role in the operation of the floppy drive. The Paula chip is number 8364 and so far has not been updated since its original PAD inception.

3 DENISE

Denise is short for Display Enable (they were obviously a bit dyslexic at Hi Torro) which neatly sums up what this chip does. All the screen modes are created and organised by this chip as are the hardware sprites.

The original Denise was numbered 8362 but the latest version on the A3000 and later models is the 8373. The main difference is that a few more display modes are available including super hi-res and productivity.

4 GARY

Gary is a jumped up control chip. It is his job to handle the bus control and all the address decoding (which is why on some early RAM upgrades this chip had to be replaced or altered). Amongst the diverse



tasks this chip must perform are controlling the floppy drive and providing the flashing grey colours on boot-up. The Gary is numbered 5719 and has stayed constant throughout the machine's development.

5 68000

The microprocessor is what makes it all happen. This Motorola-designed chip is looking a bit long in the tooth these days, but it and its descendants are the heart of the

Amiga range. The Motorola 68k series is also used in the Macintosh family of computers.

For techno-heads, the 68000 has 23 address lines (so you can't address odd memory locations), 16 data lines and over 1000 instructions. The original brief (some ten years ago) was to produce the most flexible system possible with the technology available, judging by the longevity the chip obviously has, they certainly succeeded in their mission.

OUT

6 CIA

The Complex Interface Adaptors control all communication with the outside world via the parallel and serial ports. They even control communication to the keyboard unit and are responsible for sending codes to flash the LED.

There are two of these chips... one to handle Odd data, and one for even. They are also very delicate. If you touch a printer connection a funny smell will tell you that these chips need to be replaced.

7 ROM

The Amiga 500 Plus ROM may not look a lot different from its predecessor, but it is. For a start, the new ROM is 512k instead of 256k. This has caused some problems with accumulator cards which copied the ROM into Fast RAM to speed up execution.

What is in the new ROM to make it so much bigger? Well, most of it is taken up with better housekeeping routines and support for the redesigned custom chips (ECS or Enhanced Chip Set).

8 CHIP RAM

The Chip memory installed on board the A500Plus (all 1Mb of it) can be accessed directly by all the OMA chips. By installing more memory in the trapdoor, the 500 Plus can have a total of 2Mb of Chip RAM. The 68000 can address a further 8Mb bringing the total system size to 10Mb. Not bad for a home computer.

9 KEYBOARD INTERFACE

The keyboard interface is more intelligent than you might think. It even has a special 555 timer chip specifically to flash the LED on and off at the correct rate. Further diagnostics can be obtained via the Caps Lock key. A coded message will be sent via this light if there is a hardware error preventing the system from booting.

10 CLOCK

Not much of a feature, but the A500 didn't have one. The small blue thing is a NiCad battery which will keep the time even when power is disconnected. Despite scare stories, the memory of the clock is too small to permit a virus to live there.

11 EXPANSION PORT

An extension of the main CPU bus allowing extra peripherals to be connected. These are usually hard drives but could theoretically include devices like scanners or accelerators. The latest Amiga, the A600, doesn't have one.

CDTV - A future?

There are problems with any new technology. Not so much the problems of design, or the increasing tolerance and accuracy to which things must be manufactured - but also the problems of marketing. The problems faced by CDRom should not have been so great as CDTV sales would have you believe. It was the right tack to take.

In their infancy, Compact Discs were first conceived for storing large amounts of data, such as would be needed by the computers of the future. Computer manufacturers took a look at it, said it was too limited and far too expensive and went away again. Philips developed the idea along a different approach. Having successfully sold the idea of audio Compact Discs to the audiophiles (to whom they promised eternal high fidelity listening pleasure) and to the record companies (to whom they promised greater profits and a chance to rerelease their entire back catalogue and get people to buy it again), they were now in a powerful position to offer it again to the computer industry.

With entire West German factories churning out nothing more than Pink Floyd's Dark Side of the Moon, manufacturing prices plummeted to around twice the price of duplicating a floppy disk. Did we see the price of music CDs go down? No, in spite of a fairly low inflation rate they have actually gone up. Killings are being made.

But not by Commodore. The money in the hi-tech home entertainment market is in the product, not the delivery system. A CD player is a CD player. Nobody really expects one to be any better or worse than another - in fact that's the whole point of them. That's why CD manufacturers fall over each other to invent new features and gimmicks to make their system seem better.

So why aren't software houses falling over each other to produce titles? Well, a lot have produced at least one title, mostly games. It's usually a safe title, like a very well-known game that everyone is going to buy, or at least can become part of some future bundle or collection. The obvious reason why they are not going all out is because it looks like Commodore aren't going to sell many units. One of the reasons is coverage. Walk into any high street store like Curry's, Dixons, or Comet. Where are the CDTVs? Not there. Instead, they are all huddled together in bundles down at Radio Rentals or, if you're lucky, at the local computer store. The second reason is a lack of commitment.

It's not that people doubt that those at Commodore are willing to do almost anything to flog CDTVs, it's just they don't reckon they'll be able to. The market isn't that receptive to new ideas at the moment (and who can blame it during a four year dip in the economy) - remember the satellite dish? Oh yeah, it's really popular now, but remember the days when they were giving them away every day in the gutter press. Sure, if Commodore started giving away CDTV's then people will start producing more discs. Unfortunately, Commodore can't take a huge loss like that to kickstart the industry.

So what is the future for CDTV? If none are sold no-one will produce any software and no-one will want to buy one. Well, the answer could be CDTV's biggest rival CD-I. What happened in the music industry? All the record companies and technology companies got together and made deals. Okay, so the end user got a bit stitched up, but the industry is thriving. It wouldn't be beyond the realms of possibility for the CDTV to become CD-I compatible, in much the same way as it has become Photo CD-compatible.

By now, Commodore should realise that they can't go it alone. In fact, judging by sales of CDTV and CD-I they may have a tough time going it together. A CD-I option for the CDTV would give Commodore the edge - no-one is ever going to be able to expand their CD-I machine to become a home computer - it would be far too expensive.

This may explain Commodore's reversal of their early reluctance to admit that under the black casing beats a heart that's pure Amiga.

the ultimate amiga

So, Commodore boffins are already secretly drawing up their plans for world domination in the shape of the Amiga 4000. But what shape will such a machine take?

TOWARDS 4000

NEW GROUND

The secret is, of course, that Commodore are working on a completely new Amiga. Where exactly in the grand scheme of things it will be placed remains open to question. It's unlikely that the machine will be too far ahead of the A3000, certainly in terms of cost. Commodore will be wanting (or at least, should be wanting) to consolidate the reputation of the Amiga as a serious tool in the areas where it has already made an impression on. It should also allow greater compatibility for the peripherals of the future, enabling it to become a more effective multimedia workstation. But what specific things should we look out for?

PRETTY PICTURES

It would be nice if the the next generation of Amigas came with 24-bit graphics as standard. This would enormously improve their reputation amongst DTV enthusiasts, especially if the design was based around or licensed from Amiga Centre Scotland's *Harlequin* board. Unfortunately, this would be a bit expensive. So what is going to be done about it?

As we understand it, Commodore approached Digital Creations, the makers of DCTV, to obtain a licence. DCTV is a very cunning system that uses

PAL encoding to fudge a 24-bit display. Despite the seemingly backstreet electronics, the results are astounding. Unfortunately, talks over the system, which has a retail price of £599, broke down. Commodore then moved on to do a deal with Black Belt, the makers of Ham-E. This slightly cheaper system (£299) is capable of displaying 262,000 colours on screen at once including 24-bit images rendered with programs like *Sculpt* or digitised with *Digview* or *V-lab*.

SOUNDING OUT

In the very near future, we will see a production line Amiga with 12-bit or 16-bit sound. Third party boards are already available in the States, and it is only a matter of time before they make their way to these shores. What does this mean to the average Amiga user? Well, musicians will benefit greatly from the ability to sample at CD quality directly to the Amiga rather than via a £1000 stand-alone unit as at present. They would then also have the facility to edit the samples at full 16-bit depth which would give a greater creative input to the process, and also allowing many effects which are not possible without a great deal of expensive hardware.

If the board were to include a DSP (Digital Sound Processor), its functionality would be greatly enhanced. In essence, the DSP is a dedi-

cated processor (rather like the Blitter only dedicated to the sound hardware) which would allow real-time sampling direct to hard disk. This would be a great advance. At the moment record companies are using similar technology on the Mac to master albums directly to disk. The hard disk can then be plugged in at the CD manufacturing plant and all the disks mastered digitally without any nasty analogue noise creeping into the process.

Also, the prospect of doing it yourself would no longer require a lot of hardware at home. CD companies will manufacture in lots of 1000 at £1 per disk. If direct disk mastering were possible for the Amiga, even amateur musicians could afford their own CD run.

DISK US

The one thing that Commodore would be foolish not to include would be a high density drive. Rumour has it that a late batch of A3000s were released with a high density mechanism in the States earlier this year. With such a device and the necessary workbench support Amiga users could at last access PC and possibly even Mac disks directly from AmigaDOS, without having to fiddle around with external drives, CLI utilities or complex and unreliable mountlist hacks.

It would come as a great relief to professional graphics users whose entire existence is made a misery by limited disk space and conversion difficulties. With the amount of information being processed by all the hardware we have already mentioned, a disk capacity of at least 1.4 Mb would be a necessity.

WHATEVER WILL BE...

It would be historic for Commodore to take any notice of what the industry or the users want or need. We can only hope that our aspirations coincide with whatever bizarre marketing opportunity they believe they can create. The Amiga is an amazing machine. Some people would say that Commodore gave life to the Amiga, others that since the A500 was launched they have done little but hold it up. Yes, Commodore gave the world the Amiga, but those of us with longer memories also recall the Plus 4, the C16 and the C128. We can but hope and wait and see.

TOP TEN SURVEY...

Having polled various industry figures as well as dedicated users we have come up with this top ten list of features they would like to see in a new Amiga

- 1 High density floppy drives
- 2 Built-in 16 bit sound capabilities
- 3 24-bit graphics support
- 4 Integral genlock
- 5 Faster Blitter chip
- 6 More capacity for Chip memory
- 7 Better design to allow easier chip upgrades
- 8 New RISC architecture
- 9 Integral Midi ports
- 10 Integral SCSI II port

Some of these demands may be mad or impossible, but that's what the people seem to want.

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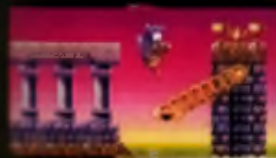
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first IMPRESSIONS

CU Amiga casts its eye over the wealth of games destined to hit your Amiga very soon...

HUMANS

Mirage

So You Want An Evolution

THE GAMEPLAY: Man's evolution from an Ape to present-day Homo Sapien has been the subject of countless debates and arguments. Newcomers *Mirage*, however, are set to release their own view of how we stopped dragging our hands along the ground — and it looks as if Man evolved from Lemmings rather than primates! The first of a trilogy, *Humans* gives the player control over a party of six Neanderthals, who are just aching to expand their minds and capabilities. Starting with the basic abilities of climbing, walking, and creating a human lower(l), their progression through the game's 120 levels sees them acquiring use of spears, the wheel, and eventually

fire. In addition, as the player learns to use these revolutionary concepts, they can also recruit wild beasts to cast spells and and Koolhaas guides the people. The joystick controls each of the primitives in turn, with the F keys selecting each character as and when they are needed.

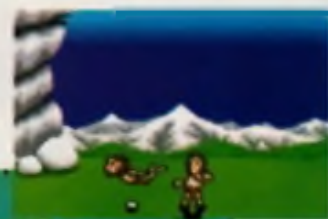
PLUS POINTS: The most striking feature about *Humans* are the actual Human sprites. Although the gameplay is similar — but more advanced — than *Lemmings*, the characters are portrayed as massive sprites, and each is superbly animated. As they learn the use of assorted objects, they roll on wheels (and over each others' toes), climb up the backs of Inevitable Dinosaurs and, well, fall over a lot. However, the gentle learning curve is also ideally suited for the

scenario, and prompts more logical thinking than Psygnosis' suicidal heroes.

BEHIND THE SCENES

Imagitec Design, are the coding Darwins behind *Humans*, and they intend it to be the first of a trilogy of games. From these humble beginnings, the next two games see the rapidly-evolving race entering 'The Age Of Chivalry' and 'Space', but these are several months behind in development. Production started five months ago with Imagitec placing ideas together on paper, coding started a few days later.

FIRST IMPRESSIONS: Whilst the goings-on in *Humans* aren't exactly breath-takingly fast (because the *Humans* only seem to make one die-



Initially, all the Humans' skills are limited to climbing and throwing — but their repertoire is soon expanded.



covery per level — still, I suppose that's how evolution works), one little mistake will set mankind back hundreds of years. It's definitely a fun little number, with plenty of puzzles throughout its many colourful and detailed levels, but the variety could be a problem. Admittedly, in the version we saw, not all the features were running, but if Imagitec can cram in all their good ideas, *Humans* will be a stunning debut for Mirage.

BEAST MASTER

Thalamus

Thalamus leave the Beast's shadow.

THE GAMEPLAY: The quest for the 'Guiding Light' has claimed many adventurers, as the path between them and it is a long and dangerous one. However, you aim to be the one person to claim the Light's powers but before you can do so, there are three large scrolling sections awaiting your attention. *Beast Master*, despite looking rather similar to Psygnosis's *Shadow Of The Beast*, is deemed to be a deeper, more puzzle-oriented game, with a sprawling forest, a temple and a herd, as yet undetermined, level ready for your exploration. Each of these stages contains all manner of energy-sapping inhabitants, and these will sap your precious energy given half a chance. In addition, guarding the end of each stage is a massive guardian, who also must be vanquished before progress is made.



As the hero runs across the screen, a bank of icons can be summoned for tactical substitutions.



PLUS POINTS: It's obvious that *Beast Master* is heading for comparisons with both *Beast* games, but no matter who wins out, there's always room for graphics like these. The main area where *Beast Master* will score points over the Psygnosis games, though, lies with the difficulty level. Whereas *Shadow* lobbed all manner of nasties at you, with the occasional puzzle to solve, in *Master* the puzzles take precedence over the arcade element, with the game's best 'em up elements rarely called for.

BEHIND THE SCENES: *Beast Master*'s concept has grown from an original idea from Wayne Smithson, leader of development team, WJS. In the past, Wayne was the brains and coding talent behind *Spellbound* for Psygnosis, but his role on *Master* is limited to that of project manager, with newcomer Leo Stornik handling the 68000 duties. Leo is compiling the game using Scream, whilst

COOL CROCK TWINS



Left: The game begins with the two crocks saving the Cool Crocks in the lurch.



Crock Twins' simple gameplay belies its considerable playability.

Arcade Masters

Croc Around The Clock

GAMEPLAY: Funk and Funk have fallen for the same girl, the beautiful croquette Daisy Unabie to decide between them, she does what any girl would do and runs a mile - several miles, in fact, in an attempt to escape the problem. With you taking the role of one of them, the amorous amphibians give chase over 60 platform levels and six worlds to procure their love. Each level is filled with coloured blocks that have to be lit. The

crocks have the power to defy gravity and by walking around the four sides of the screen and platform surfaces, they can jump on, snach into and illuminate, the three elements that each block possesses.

PLUS POINTS:

Each level is patrolled by a quota of buddies. They begin with four and can go up to about fifteen on screen at once. These characters add an element of excitement to the game, as every time you spin off a surface and squish one,



the graphics are produced using DPaint by Godfather maestro, Pete Lyon. The development period has been pretty problematic as Leo struggled to get the many puzzles to run logically, but apparently they have beaten this problem, and the game is on course for a July release.

FIRST IMPRESSIONS: With *Shadow Of The Beast* and its sequel heavily criticised for their high difficulty level, *Beast Master* is aiming to capture the imaginations of anyone who wants a high class arcade/adventure which also features balanced gameplay. The game's puzzle element is very strong, and whilst the best 'em up action certainly adds to the game's incense Jones' feel, it would be unfair to label *Master* as an arcade game. Thalamus are getting very excited about *Beast Master*, and if the playability ends up half as good as Pete Lyon's screens, then their optimism should be rewarded.



they throw up a letter that gives you a different power. F freezes the screen, S lights three blocks at once, N neutralises special blocks and so on. Squash all the sprites on the level and you get an extra life. The graphics don't change much, except on the enemy sprites which alter according to the world you're in. They range from Eskimos and gangsters to

pirates and farmers. Other features are banks, boulders, snowballs and doors that obstruct access to the lights. Passing through question marks will throw you off in random directions, whilst arrows will send you in the indicated direction and then swirl around for the next time.

BEHIND THE SCENES: The initial game idea came from French programmer Benoit Varasse. The project has taken 12 months to develop and should see a release within the next month. The biggest problem Benoit faced concerned the interaction of the graphics due to the speed at which the two crocks spiral around the screen at the same time.

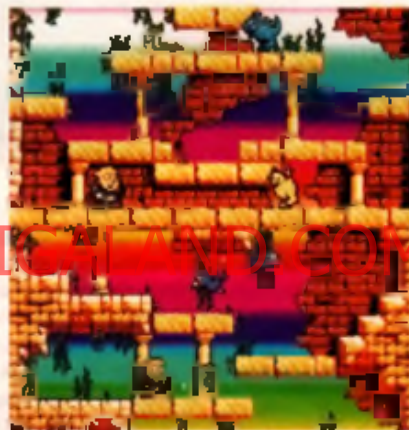
FIRST IMPRESSIONS: *Croc Around The Clock* is the first official launch product for Entertainment International's Arcade Masters label, and it certainly remains faithful to the company's title. The game's a true arcade experience in every respect. Nice touches, such as farm yard animals and birds, that sweep across the screen bearing humorous messages, all add to the game's overall feel of quality.

MAGIC BOY

Arcade Masters

Howl is the new Sorcerer's Apprentice...

GAMEPLAY: Take the Mickey mouse scene from Walt Disney's *Fantasia* and mix it with some cartoon-style computer graphics and you've got *Magic Boy*. Howl has accidentally let loose all the Sorceress' pets so, armed with his magic wand and a small bag, he must gather them up before the magician's return. Luckily, by using the wand, he can steal the creatures and throw them into his bag. However, the effect doesn't last long and if he doesn't deposit them into their pens within 10 seconds they'll break free. There are 10 levels with eight worlds, each possessing a different theme. Every monster on every screen must be caught and contact with them means instant death.



PLUS POINTS: Detail on all the sprites is excellent, when Howl has collected a monster and put it in his sack you can see the beast kicking and struggling to get free. The Magic's castle is filled with glittering incorporating spinning, disappearing blocks, conveyor belts and pick-ups. The magic wand is pretty wimpy to begin with, but you can get more powerful models. The colours and detailing of the snakes, birds, giant mosquitoes, mini dinosaurs and elephants are exquisite and animation of Howl is full of character.

BEHIND THE SCENES: John Dale is handling the code for *Arcade Masters*. He currently programs in his spare time as he works in the computer Law department at Warwick University. Not content with just handling the Amiga code, John's also creating the Atari and Famicom versions simultaneously! At the moment there's a slight problem with sprite detection, but that will be ironed out as soon as John gets another day off work!

FIRST IMPRESSIONS: With a large childlike sprite *Magic Boy* is not unlike *Rainbow Islands* in looks and game play. However, a major asset in its favour is its actual 'feel'. When Howl picks up a monster they'll always relinquish something.

A piece of fruit for Beaus petals, letters to spell a word for an extra life, rainbows to dig levels or stars for credits. These little touches, plus the charm of the game, and a slight puzzle element, makes it look a welcome addition to the outcast genre.



'ERE WE G

With the European championships just around the corner, the Football genre has once again started to liven up, with nearly a dozen new Footy games on the way. The trouble is, with *Kick Off II* as the industry benchmark, will they be able to knock Anco's league winner of two years' running from its perch? Over to you Trevor Brooking. 'Yeah, well, Steve, as I was saying to George Best the other day, I said "Besty, that *Kick Off* is a game of two halves and no mistaking", and he said "yeah, but everyone takes too much of a sensible option with it..." Sunny you should say that, Trevor - nice jumper by the way - but those wacky lads at Sensible Software are first up for promotion with the aptly-named *Sensi Soccer*.

SENSIBLE SOCCER **Renegade**

During the tail-end of *Mega-Lo-Mania*'s development, Sensible lads, John Hare and Chris Yates, started toying with the idea of a '*Kick Off* Baster'. Sitting down with copies of Anco's classic, *Speedball II*, and their 8-bit incarnation of *Microprose Soccer*, they noted the best aspects of each, and what they would like from a Footy game. After a few mock-ups, *Sensi Soccer* was born. Featuring laddy, but well-animated sprites, *Sensi Soccer* is a definite game of two halves - half Football, half madcap humour. The pitch is viewed from above, and the lads have kept everything to a minimum size, with the pitch occupying more of the screen than Anco's game. 'We wanted to allow the player to plan ahead more,' says

Errrrr... quite extraordinary... with the England team well on their way towards the next World Cup and the European Championships soon to start, yet another wave of Football-related computer games have started to appear... errr.... over to you Steve Merrett for a complete commentary...

Sensible's Chris Yates, and making the amount of pitch on screen at any one time larger than in past games seemed the logical thing to do. Another area they wanted to explore was complete controlability over your squad. Rather than scurrying all over the pitch, your players are allocated specific 'zones' on the pitch - an area for a defender, and another for a winger, for example. In addition, whilst there were very few moves not already implemented in past kickarounds, they felt that they should be made more easy to use. 'We've included all the usual banana shots, bicycle kicks, and sliding tackles,' Chris elaborates, 'but we've tried to make sure that the players react quicker and more instinctively than in *Kick Off*. That way, in the heat of the action, you'll be able to lunge and dive at the ball with a number of players, and they won't head off to do their own thing or slide for no apparent reason.'

All the usual rules are present, with fouls, defensive walls and the like, but one thing no past Footy game has attempted lies with *Sensi Soccer*'s sound department. 'The crowd roar when the play goes their way,' Chris enthuses, 'and in the international matches between Italian and Spanish team, there will be fireworks and whistles coming from the crowd!' *Sensi Soccer* and its many options will reach the Amiga in time for a May release, and we'll be bringing you a full review next month. Over to you Trevor...

'Yes, it seems like the Sensible lads have done it again. First they revived the Footy genre on the C64 with *Microprose Soccer*, and they could offer *Kick Off II* worthwhile competition if their promises come off. After all it is a funny old game, and they could be as sick as a parrot if they don't make the Elite. Another extremely luscious link, cheers Trevor - your hair looks nice and curly, by the way, new perm?'

EUROPEAN CHAMPIONSHIP 1992 **Elite**

The next battling for promotion and hoping to part Jos Public from a twenty-six quid transfer fee is from Elite. Last year, the Walsall-based company scored a massive own goal with their other Tecmo *World Cup* licence, but they hope to bounce back with this conversion of Tecmo's *World Cup 90* coin-op - which now goes under the updated name of *European Championship 1992*.



Developed on the PC using the coin-op's graphics and source code, Elite are claiming that *European Championship 1992* is identical to its arcade parent.

Using the Tecmo coin-op's original source code, Elite boast that it will be 'the benchmark of all Football games'. Strong words indeed bearing in mind the amount of competition. Abandoning the ever-popular bird's-eye perspective in favour of a touchline viewpoint, *EC* also features all the usual shots and rules we've come to expect. The game is being developed by Cygnus Software Engineering, and development is being led on the PC version. 'It's looking really good,' said a very chuffed Stuart Hibbert, Elite's Development Manager. 'Although the PC is leading in terms of development, everything is going across to the Amiga very nicely, and it should result in a perfect conversion.'

It has to be said, though, that the original coin-op was a bit drab and the action a little forced, but Elite are planning to tighten up any loose areas and inject much-needed humour with the likes of breakers and players running into goalposts. If Elite live up to these promises, they may have a chance for glory, but with the aforementioned *World Cup* still sorely remembered they may have to make it exceptional to draw the fans back. Let's go back to the studio and Elton Wesley...



Sensible's game aims to take the best aspects of *Kick Off II*, yet also aims to appear on their 100. As a result, Sensi claim the game will flow a lot better than the Anco game.



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GO



Arsenal's David Seaman shown here in all his digitised glory - his stats will fill the space to the right.

ARSENAL

Thalamus

(Smarm) Hello, and welcome to The Match (sexy grin, to nearby Denis Law and his heck to the mooning fans in background). On today's The Match, we've got goals galore from all the first division matches (creep, oil), which in other words means that Liverpool are the main feature whilst we butter up all you QPR and Everton fans with the odd clip from the game you played in a day to watch (grease, ooze). Anyway (smiles to camera), next up today we have Arsenal who have ditched George Graham and are currently being managed by Thalamus, and groomed for a potential summer onslaught.

Converting the likes of Ian Wright, Paul Merson, and Tony Adams (with or without his prison outfit) into pixels are relative newcomers, Cynus Software, and their attempts to bring 'The Gooners' to the Amiga have taken three months so far. As it currently stands, the game is a mixture of arcade and managerial styles, with the would-be George Graham picking and training his team, and then - hopefully - guiding them to victory during the arcade sections. At the time of writing, only the managerial sections are up and running, but these are still looking very impressive. Digitised pictures play an important part in the proceedings, with each player shown to the left of the screen, and their relevant stats alongside this. It's eighty days as to whether Arsenal will be a league topper, but

The amus confidently think that it will blow away past licensed games. Now over to Steve Merrett who has been talking to Liverpool-based Rage about their very impressive-looking Kick Off II...

STRIKER

- Rage

Rage are a new face on the software scene, but their reputation has already been forged. Rage is, in fact, the new label adopted by ex-Ocean developers, Spectra FX, who have at long last made the break to become a stand-alone publisher. Paul Finnegan, head honcho of Rage, is quietly confident about the move, and their first release, *Striker*, is nearing completion.

Played over a forced 3D pitch, with the pitch receding into the distance, *Striker* aims to be the game that *International 3D Soccer* and *I Play 3D Soccer* failed at. Using small, but well animated sprites, the game is a fast-paced Soccer sim which could quite easily knock *Kick Off II* from its perch. It's difficult explaining what makes *Striker* so impressive, but the main reason for its success is that it plays so smoothly and the action is instinctive and fluid. 'We looked at most of the footy games



around,' opens Finnegan, and obviously we looked at *Kick Off II* the most. The final result we wanted was one where we could make it look very different, but retain the pace and sheer number of moves of the Anco game. And, to be honest, they've certainly succeeded. As the players run around the pitch, the screen pans behind the currently-selected player, and via the joystick all the expected moves are there - and more. Driving headers, lobbs, free kicks and corners are all available, and extremely easy to use. 'We've tried to keep it as simple as possible,' Finnegan elaborates. 'The moves are all accessed via different moves of the stick and the joystick, but we've still kept it that, if a

Striker's speed and control system should make it a very impressive debut for Rage.



LOAD OF OLD BALLS

Can we ever forgive Anco? There we were all enjoying the likes of *Microprose Soccer* and the countless other Footy games which were hitting the scene, when along they come with their bland-looking games. When Anco first took *Kick Off* around to all the magazines, it was treated to cursory glances and was relegated to 'One-Page Review' Heaven. However, actually playing the game opened up a completely different can of worms. *Kick Off* avoided the 'Velcro Boot' syndrome of *Microprose Soccer* and Activision's abysmal *Fighting Soccer*, and also bore a resemblance to the real sport! For such a popular computer game theme, the age-old sport of kicking a leather bladder of hot air around had been sorely neglected, with would-be Kevin Keegans and Malcolm McDonalds limited to the managerial aspects, rather than 'on-the-pitch' action.

One of the first (and worst!), was Grandslam's *Peter Beardslay's Soccer*. Then then-Liverpool striker was one of the first players to endorse a game, and he obviously never saw it before it was released! Although graphically, it was fine with large cartoon sprites, all the players looked like mop-top Pete, making the game look like a Beatles convention! And if that wasn't bad enough, it was a complete walk-over, too. Hops springs eternal, though, and Footy fans were pinning their hopes on the Electronic Pencil Company's conversion of Sensible's 8-bit classic, *Microprose Soccer*. Alas, though, the conversion somehow lost all the charm of the C64 original, along with the fast-paced playability, too.

More weeks after *Microprose's* non-leagues, though, came a pathetic-looking game from Anco. *Kick Off* used minute players set against a pitch which, in relation to the teams, must have been at least two miles long. However, it had one thing that the others lacked: complete control over all the shots and passes. None of this 'velcro boot', where the ball instantly sticks to your player's foot - in *Kick Off*, you dribbled properly, and very hard it was to master, too. Nevertheless, it was the best Footy game ever, and consequently won a myriad of good reviews and sold thousands of copies, raising Anco from their previous obscurity of *Scramble* and *Donkey Kong* clones.

Following this, licences galore were released with Liverpool, England (the less said about that the better!), and good old Gazza making an appearance, along with variations on the theme, including Red Rat's brave attempt at using a 3D perspective to depict the action - unfortunately, the game was rather slow and Microprose had one of their rare duffers on their hands. Again, Anco came to rescue with the now-legendary *Kick Off II* which now boasted defensive walls, fouls, and aftertouch, and which again left the rest straggling behind. Until now, perhaps...

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IT'S TOUGH AT THE TOP...

SOFTWARE 2000's

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SOFTWARE 2000



THE MANAGER

The main menu - click on icons to select the various options

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BUT IT'S TOUGHER AT THE BOTTOM

Screenshots are only intended to be illustrative of the graphics on 1 user per screen graphics which may vary considerably between different hardware in quality and appearance and are subject to the computer's specifications.

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'ERE WE GO...

cross comes across, you can send a player lunging in for it.

Graphically, *Striker* is of the *Kick Off* school of minimalist sprites. However, whilst they are larger than those of Anco's game, they are also considerably better to look at. In addition, the control system may appeal to anyone who never got the hang of Anco's game's dribbling system. 'We've gone for a looser variant of the 'velcro boot' system,' says Paul, 'as this makes interception easier, and lightens dribbling. You still have to work around the ball and it can be swiped away from you very easily, but it isn't quite as free running as people may be used to.' Everything about *Striker* is geared towards the arcade element, and it works very well. For free kicks and throw-ins, a dotted line indicates the path and height of the shot, and penalties are viewed from directly behind the goal, with a small cursor passing from side to side. Paul is obviously very pleased with *Striker*, and with very good reason. It succeeds where most of the 3Ders have failed - in the speed area - but retains *Kick Off*'s obvious playability. Watch out for a full review next month. But now, over to Teque for a slightly...err... different look at Football.

EURO FOOTBALL CHAMP

Demark

It takes a lot to make Teque's Dean Lester a happy man, but Tailo's *Euro Football Champ* coin-op usually brings a smile to his face. 'It's brilliant,' he says, 'not only is it an excellent Football game, but there are elements of mindless vio-



Demark's conversion of the Taito coin-op features all the shirt pulling fighting aspects - perhaps this would be the ideal game for Vinny Jones to endorse!



OWN GOAL NO 1

I PLAY 3D SOCCER

Released by Impressions, this one looked infinitely better than it played. Utilising the 3D system pioneered by Microprose's *International 3D Soccer*, programmers, Simulmondo, bravely used sprites on a vector-based pitch. Although it supposedly contained all the expected moves and kicks, the screen was updated in such a confusing way that it rendered the game unplayable. In addition, because the action was viewed from behind the players, judging the length of long balls was nigh-on impossible, making passing extremely difficult - although the dim nature of your opponents made up for this. Since *I Play's* release, Simulmondo seem to have disappeared - unless they're working on a sequel.

OWN GOAL NO 2

HOTBALL

I'm afraid the foreign company responsible for this piece of garbage escapes me, but as you're never likely to spot a copy of the game (unless it's right at the bottom of the bargain bin), I wouldn't worry too much. The most unusual thing about *Hotball* was its complete ignorance of the game's rules and the bulky anti-piracy dongle which hung out of the back of your machine. This allowed four unlucky cretins to suffer together, and with its dire graphics, non-existent gameplay, and minimal options, this was the worst punishment imaginable.

OWN GOAL NO 3

ROY OF THE ROVERS

Released around the time when Gamelin were publishing such top-notch releases as *Arturo*, *Dark Fusion*, and *H.A.T.E.* (that's sarcasm, by the way), *Roy Of The Rovers* was a two-stage affair following the adventures of everyone's favourite Melchester player, Roy Race. The first half of the game was a post-pool arcade adventure where Roy had to locate his missing team-mates. Blackie Grey and Co. had been kidnapped by a ruthless property developer who wanted to bulldoze their ground for a shopping centre or something, and Roy had to solve a series of puzzles and occasionally return to his Mum's house for tea and health replenishment if he was to succeed. Once Melchester were reformed, an even worse Footy stage was initiated, where a team of Lego bricks took on Melchester - whose ordeal had left them sinisterly deformed. This is one of the all-time stinkers, and if you ever see it, buy it just to see how bad it is.

OWN GOAL NO 4

FIGHTING SOCCER

The worst thing about *Fighting Soccer* is that it was a crap coin-op before it reached the Amiga. You would have thought that Activision's Big Cheeses would have thought 'hmmmm, this is a pile of drivel, let's put our cheque book away' - but no. Someone, in their infinite wisdom, tried to convert the big gaudy sprites over to the Amiga, along with the 'exciting and revolutionary' violence aspect. The result? A conversion which was even worse than the coin-op, and Activision relegated to the French league.

OWN GOAL NO 5

WORLD CUP SOCCER

Not to be confused with the forthcoming Elite conversion, this Amiga version of the Sega Megadrive game lost a lot in the transition. The Megadrive original was a real laugh - it didn't exactly push the machine and had very few moves available, but it was fast and play was simple. Elite managed to retain the simplicity, but the speed fell by the wayside. With this loss area lost, Elite's game was a pale imitation - almost like a present-day Stanley Matthews running alongside Gary Lineker. Best forgotten, Elite have tried to...

lence, too! Quite. But it's a good job that Dean likes it, as his busy band of Teque coders are currently putting the finishing touches to Demark's conversion.

Viewed from a side-on perspective, the *Euro Football Champ* coin-op can be played either as a 'Gentlemanly' Football game, or, with the cabinet's extra buttons, as a foul-laden scrap, with short-pulling and leg-kicking abound. 'The coin-op plays a brilliant game,' Dean continues, 'and has everything you need for an excellent Footy game. It's fast, it has plenty of easily-accessible moves, and the violence is the icing on the cake.' Among the many moves available to the player are bicycle kicks, headers, and the players can even be made to indulge in a little 'Keep It Up!', using their knees, feet and chest! 'The moves depend on the situation, and if a player stands still, they can chip it up and boot it over their head, or simply let fly with a long, low shot.'

Another aspect which Dean thinks the Demark game will excel in is in the Goalie area. 'They are great,' he continues. 'Whereas in *Kick Off* or whatever they can save or miss and that's it, in *Euro* they're regular little Peter Bonetti (remember him?) who can tip a shot over the bar, fumble it, and be amazingly acrobatic.' So far, it sounds like the perfect Footy game, how accurate is it? 'Apart from the violence, it's pretty much perfect. We've been playing the coin-op non-stop - actually it's in for repair at the moment! - and we know what makes a good game, but there's load of smaller touches which are also worth going in.' Such as? 'The referee, for instance, is really fat and, as a result, can't keep up with the players. So with him out of the way, they can start fouling and kicking chunks out of each other. In addition, if a goal or equisizer is scored in the last few seconds of the game, the scorer goes awf.'

The main bulk of the game is now complete, and the coders - John Broggy and Rahim Abdul - are currently adding the game's presentation and net data for the game's May release. And with Kriesle's *John Barnes* and *Man Utd* games also hailing from their London base, Teque certainly have good Footy credentials. Over to you, David...

Errr... well that's all we've got time for this month. Next month we'll be printing the results of most of these forthcoming matches, and it's guaranteed to be a game of ups and downs. In addition, the first of the torrent - Kriesle's *John Barnes' European Soccer* - has already made it to us - albeit to a luke warm reception. But, at the end of the day, it's sales that count - and there's certainly some competition out there...

FINAL SCORE...

Whilst it would be unfair to predict which of the above will be the best - after all, several are still midway through development - it has to be said that Race's game is shaping up very nicely indeed. There is still one major contender to watch out for, though - Anco's *Kick Off III*. Shrouded in mystery, *Kick Off III* is rumored to be a massive revamp of the original code. Rumors suggest that it will feature Captain who orchestrates key moves and possibly a different viewpoint. Apparently, the game is three-quarters complete, and the *Kick Off* name alone will ensure that the others should be worried. It's certainly going to be one to watch out for - Race, Bonetti and Demark certainly are...

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EXCLUSIVE

The quest for the perfect Mario game continues, and Ocean have bridged the gap between Amiga and console playability even further. Recruiting the kooky Addams Family as the stars, have Ocean produced the ultimate platform game? Steve 'Lurch' Merrett enters their sprawling house...



Among the dungeon's many dangerous denizens are axe-spitting creatures and what appear to be lethal swinging Space Hoppers.

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Hidden within the game are a series of unusually-placed doors. For instance, entering the tree on the right opens up a series of room-related screens, whilst other cash and bonus-oriented screens are often found above the more obvious exits.



Rather than limiting itself to the boundaries of a true platform game, Addams also features Tower-style underwater stages and airborne screens which are accessed using the Fee-Copter.



the ADDAMS FAMILY

CREEPY...

From his humble beginnings as the barrel-jumping hero in *Donkey Kong*, Mario has come a long way. Since *Super Mario Brothers* and its horizontally scrolling platform action arrived with the first batch of NES consoles, virtually every platform game released since has been compared to it. However, courtesy of Ocean, the Amiga has its first real threat to the Brooklyn Plumber, as those creepy, kooky, spooky, and nooky members of The Addams Family make their Amiga debut.

I got my first glimpse of *The Addams Family* during a visit to Ocean's Manchester HQ several months ago, and went away fairly impressed by the fun-looking platformer I saw. Since then, the game has come along in leaps and bounds—literally—and a though, in a touché result as the parallax the programming team had originally hoped for, have taken by the wayside. The

closest the Amiga will get to a *Mario* game—and if that isn't the ultimate accolade, then I don't know what is...

KOOKY...

Taking notice of past licensed failures, Ocean have opted for the 'Hudson Hawk' route, adopting a single gamestyle rather than a mish-mash of sub-games. It had always been Ocean's Gary Bracey's intention to rival *Mario*, and in perusing the film's script, he decided that *Addams* had the perfect setting for it. The game is played within the Family's sprawling mansion, and this allows the game to be broken down into five distinct areas—i.e. wings of the building. The scenario tells of an evil property developer who is forwarding plans to flatten the mansion so that he can build a series of towerblocks on its estate. Obviously, this has encountered resistance from the kooky clan, but such protests

and, in doing so, defeat the mysterious kidnappers, just as the scenario is far removed from that of the film. Though, the Gomez sprite is equally unrelated to the film's Raul, a character with his equal physique, hand-ear moustache and incredible running and jumping finesse, all Gomez requires is a set of red dungarees before the transformation into *Mario* is complete. However, that said, Gomez can match *Mario* move for move, and even has a few extra tricks up his smoking jacket's sleeves. For example, a flying Fez (a Fez-Copter) can be found in some levels, and can be collected to get Gomez airborne and past particularly nasty areas.

MYSTERIOUS...

Starting in the hallway, five doors await Gomez's attention. These form the entrances to the five wings, and contain a series of creature-infested rooms and the claimed members of the family. Behind these doors lie the garden, the kitchen, a dungeon, and other such rooms, and follow either a horizontal or eight-way scrolling path. Ocean's studying of all things *Mario* also shows up in the animation and control over Gomez. As can be expected, the joystick sends the moustachioed hero scurrying to and fro and pressing the fire button prompts him to

ions have been silenced with the kidnapping of Granny, Morticia, Fester, and the kids, leaving head of the house, Gomez, with little option but to scurvy the house's many dark corridors and rooms in search of them.



Once collected, the Fez-Copter is invaluable. However, it can only be used within the current section and is lost if taken into another.

the ADDAMS FAMILY

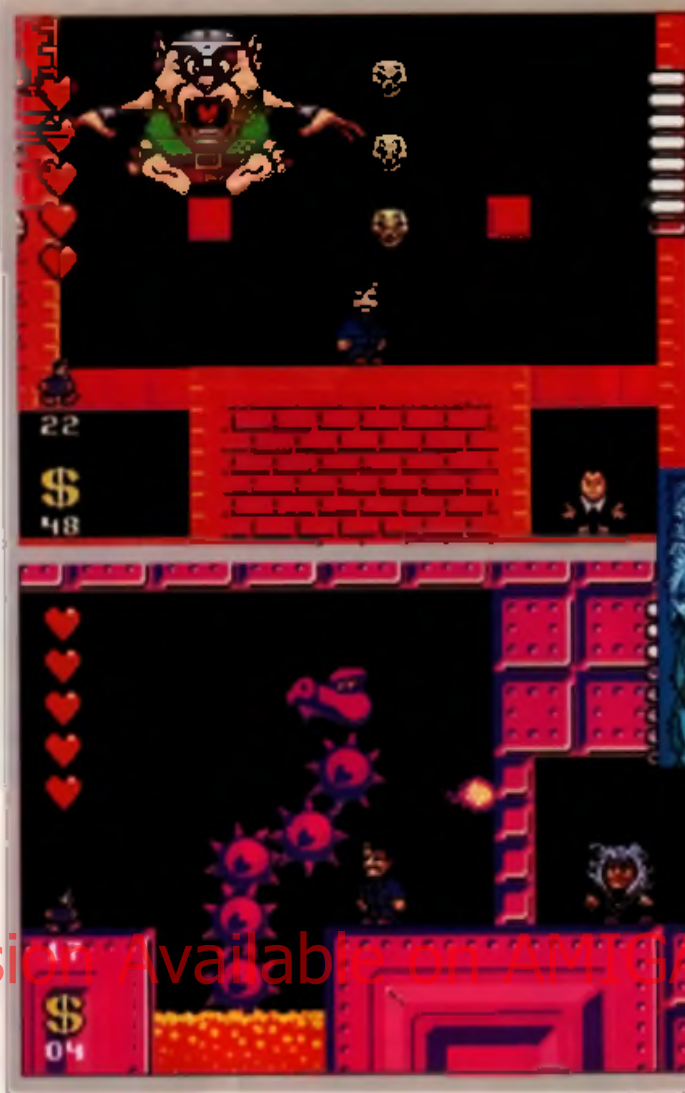
leap, but these simple controls belie the true athleticism of the sprite. The length of each jump can be determined by keeping the joystick pressed in the direction Gomez is leaping, and his direction can also be altered mid-jump. The flexibility over the character is essential to the game, as to destroy the rampaging nasties, Gomez can either jump on them or avoid them. The jumping method is obviously the most favourable, as several thousand points are given as a reward, but avoidance is less risky.

Each of the wings follows the set pattern of avoiding or killing the nasties until the door to the next area is found, and, ultimately the 'Boss' creature guarding your family member is defeated. However, this simplicity is the basis for *The Addams Family's* complete playability. Nobody could ever say that *Super Mario Brothers* was the most taxing or original of games, but such is the implementation of the ideas and the ease of use of both Mario and, indeed, Gomez that there's no room

INSIDE THE HOUSE...

Every bit as imposing as the Family Tomb before the Addams' Mausoleum, starting outside the building doors, on entering the twisted hallway there are the entrance awaiting Gomez's entry. Linked by staircases, these open up to the Garden, a Dangerous Dining Chamber, the Halls, the Library, and the Conservatory. However, also located here, within the building are a series of other hidden hidden locations, for instance, an exemplifying a certain look to the kitchen, access to the holy temple of the Stone is given, and this gives the way to be approached by flame-breathed demons who are oblivious to your attacks. Similarly, on entering the garden access to the Family's Mausoleum and the initiation of a rather spooky race can be gained. The format of which actually gives the way to the Wednesday's mansion, following the plot of the recent film rather nicely.

Other areas include the library, but one room brings a cameo appearance by your own Bill, the coach, who is to be away on his P and which they you find like several, adorned along on his fingertips. More amusing, though, are the actual hidden rooms which are secreted through out the area. These are often hidden behind secret doors or even inside the mouth of your favourite dog, and feature dozens of Dollars and energy boosting boosts to extend your life expectancy. In addition, 21 extra lives can be found in a particularly subtle room during the Conservatory screen - but a set procedure must be followed before Gomez can collect them.



TO THE RESCUE!

Before the individual family members are freed, Gomez must take on the massive 'Boss' creatures who stand guard over them. Although they vary greatly in appearance and attack methods, all can be killed by repeatedly bouncing on them. However, although platforms are provided to do so, there's still the danger of coming into contact with them, and these large creatures drain Gomez's already limited energy considerably faster than their smaller counterparts. Initially, Gomez can opt



to rescue Pugsley, Wednesday, Granny and Fester, but the hard-core family member to free is Morticia. She is trapped within a final section which can only be accessed when the other four have been rescued. Even so, there are still four, all-new stages between Gomez and his lady love...

for unnecessary sub-games or complications. So, what you get are hundreds of nasty-infested screens, all ready for a good bouncing. Additionally, *Addams'* nasties are all tied in with their respective levels, so the garden features horticultural horrors, whilst the kitchen has cutlery-wielding chefs and the like

SPOOKY...

Gomez begins the game with a set of five lives, the length of which are determined by

a series of hearts which act as energy indicators. These are steadily reduced should Gomez come into contact with a nasty or hit by one of the many swinging axes or rapid-firing cannons that form the game's plentiful static obstacles. However, to replenish any lost health, throughout the game there are a series of Dollar signs which our agile hero can collect. Twenty-five of these money signs go towards an extra energy point, whilst a hundred grants Gomez with a much-needed

extra life. The goodies don't stop there, though, and useful power-ups, such as limited invulnerability, can also be collected.

With *The Addams Family*, Ocean have produced what is quite easily their best game yet - with the possible exception of the brilliant *Rainbow Islands* (but it is very, very close). Forget the likes of *Batman: The Movie*, the excellent *Robocop III*, and even *Parasol Stars*, *The Addams Family* is platform perfection. Everything about the game, from the



MEET THE FAMILY...

Starting it as a series of single-frame jokes in the New York Daily, *The Addams Family* hasn't yet reached a general audience via the TV and silver screens. Originally, the family were limited to black-and-white one liners, but with the advent of the black and white TV series in the 60s, script-writer actually managed to create an amusing half-hour which was far better than the usual 'Wanna-haha', *The Munsters* - and for yourself or BBC2, where the series is currently enjoying a revival. On the announcement of the film's forthcoming release, skeptics doubted that a half-hour 'joke' could be stretched across a two-hour screenplay, but the film is dark and serious humour and perfect casting paid off well into the realm of big budget successes. Prepare to meet *The Addams Family*...



GOMEZ - The head of the household. Periodically normal in appearance, he is a striking dandy who is total y obsessed with his beloved Morticia. An expert swordsman, his other loves include his masochistic and her vomiting out his rage and a series of spectacles or crashes, and continual scarring with his brother Fester.

MORTICIA - Sure to not surprise Morticia is a real family lady, and takes pride in her little darlings Wednesday and Pugsley - even going so far as stopping them from killing each other. A few of her more - particularly that to her own body - she is a shrewd judge of character, but perfectly noticeable to people she is around.

UNCLE FESTER - Although he is Gomez's twin brother, the two are completely distinct. Whereas Gomez is daring and headstrong, Fester is short, stumpy and bald. A real wit in the lab, where he is master of parades. Fester shares his black and nephews and can often be found joining in their candy parties and being their little helper.

WEDNESDAY - Morticia and Gomez's daughter. A bit of the 'Cruel Gyneco-School Of Gore', Wednesday is the most by death and murder. However, like a softer side of her nature, and when she isn't trying to murder her father, she can be found playing with her best friend.

PUGSLEY - Wednesday's long-suffering brother, but equal y as devoted to his father as she is to his sister, and he has a very special quality, with which he deceives all of Wednesday's girls.

GRANNY - The stereotypical old pros, Granny can be found cooking her way through the house whilst experimenting with her dark magical powers. She enjoys the cold party and, although hilarious enough, is the most unloving member of the family.

LURCH - Not exactly a member of the family, but a loyal Butler and classical Piano virtuoso. When not using his mass of grey and bald head in the house's higher corners, there's nothing he likes more than taking the wraps as the appreciative family audience.

THING - Thing is a handy little helper - literally. He takes care of the family's outdoor as well as the indoor messes and a thumb. Thing is dangerously adaptable. He can pull through his body as well as through holes, and, well, hold objects...

Addams Family movie was crying out for a decent game based on it, or whether Ocean's programmers have simply pulled out all the stops to produce one of the best platform games ever, but whatever the reason for *Addams'* content and style, Ocean deserve to be rewarded. It seems that they have listened to people complaining about the likes of *Darkman*, *Total Recall* and

Terminator II, and come up with the perfect answer. *The Addams Family* has instantly become one of my all-time favourite games, residing up there with the likes of *Kick Off II*, *Rainbow Islands*, and *Jimmy White's Snooker*, and as a decidedly picky git when it comes to what I'll actually play in my own time, that's praise indeed. Steal a copy if you have to, but this is an essential addition to every Amiga's software library. They're certainly ocky by me.

buyers guide

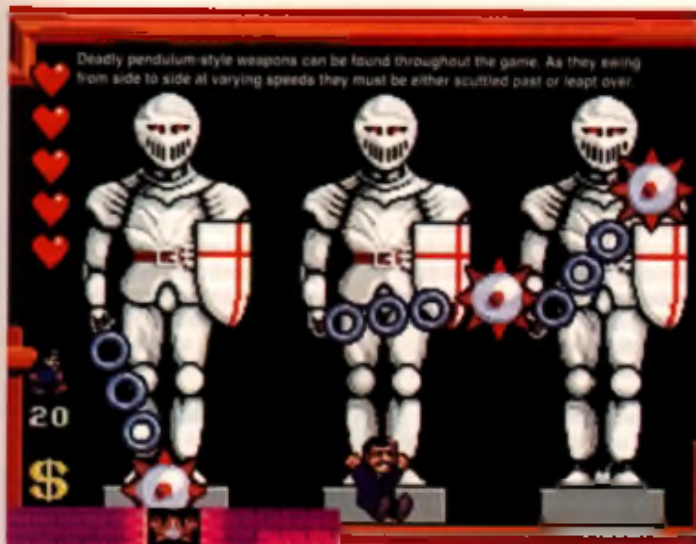
release date	May 1992
genre	Platform game
price	Team James Higgins
rating	92%
features	Graphics and Sound
controls	Joystick
number of disks	1
number of players	1
memory	Low loading
with manual	
notes	Delicate

OCEAN £25.99

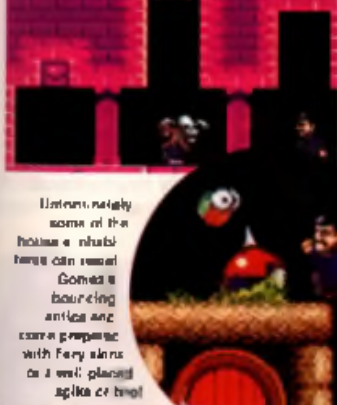
At last! The Amiga equivalent to Mario...

GRAPHICS	92%
SOUND	87%
LASTABILITY	95%
PLAYABILITY	94%

OVERALL 95%



Deadly pendulum-style weapons can be found throughout the game. As they swing from side to side at varying speeds they must be either scuttled past or leapt over.



Useless, notably some of the houses which can reveal Gomez's bouncing antics and even progress with Fester as a well-placed spike or trap.

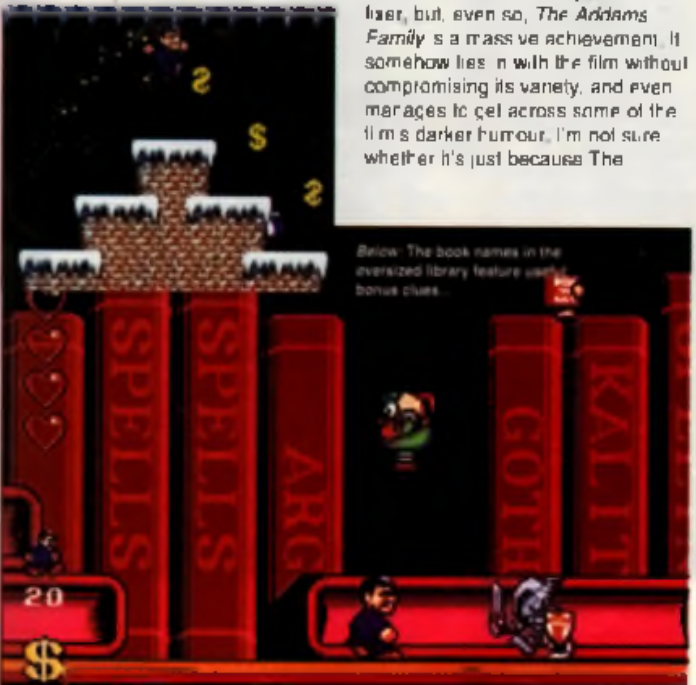
linky John Dunn music and effects to the little dust clouds Gomez kicks up when he skids to a stop, make it a polished-looking game - but as it, *Mario*. The gameplay still outweighs the aesthetic p uses. The complete control over the Gomez sprite, coupled with the devious layouts of traps, nasties and obstacles makes for a real challenge. Due to programming limitations there's usually never more than three moving nasties on the screen at any one time, but they are timed to move or patrol so that it isn't really noticeable. In addition, these objects behave in such a way that they 'don't' can be used in your favour. For instance, above the flight path of a cannonball, there may be a series of Dollar signs and the only way to reach them is to jump in the path of the cannonball and bounce off it to reach them.

ALTOGETHER OOKY...

For anyone who has seen *Mario* in action on an NES or Super NES, then you need yearn no longer for the same style game. *Addams* may not be as busy or as fast as any of the *Super Mario Brothers* games, and I doubt that Gomez will attain the cult status of the Brooklyn U-ber-d fester, but, even so, *The Addams Family* is a massive achievement. It somehow ties in with the film without compromising its variety, and even manages to get across some of the film's darker humour. I'm not sure whether it's just because *The*

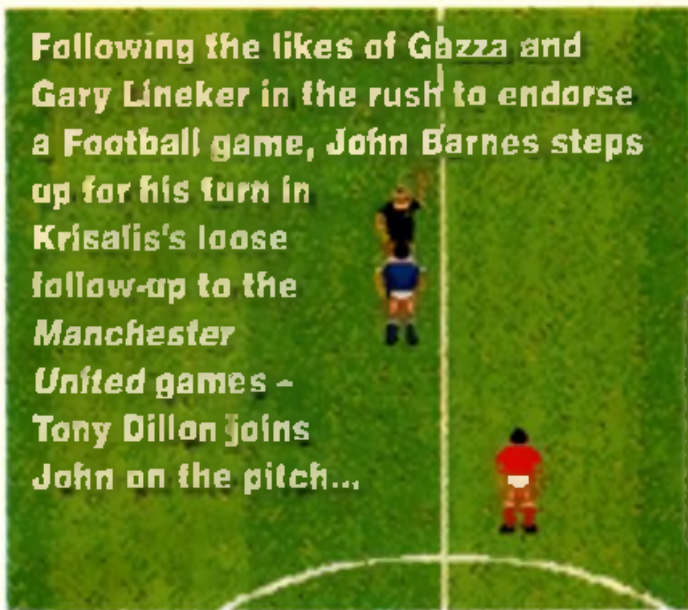


Above: An idea blatantly pilched from *Super Mario World* on the Super NES is the 2-in-1 option. If the book is dotted throughout the game and, when head-butted reveals a useful clue or pinpoints the location of a nearby bonus stage. Below: Gomez has a one-cut house room, where Gomez takes his temporary residence as he collects the many Dollar signs.



Below: The book names in the oversized library feature useful bonus clues.

Following the likes of Gazza and Gary Lineker in the rush to endorse a Football game, John Barnes steps up for his turn in Krisalis's loose follow-up to the Manchester United games - Tony Dillon joins John on the pitch...



TITLE CHASE

Following in the footsteps of Emlyn Hughes, Gary Lineker and Paul Gascoigne comes John Barnes. No, I don't mean playing in the England squad, having a hit single, or becoming an internationally-renowned player - he's done that already. I mean having a computer game named after him. Although, to be fair, John did play a bigger part in the development of this game than smile candidly while holding a joystick for an appallingly crass press photo. Apparently, John had his hand in the door all the way through this game's development (his feet are far too precious to use), but I'm not sure that that's a good thing - it's a bit like Pavlov's telling Stock, Aiken and Waterman how to have a hit.

The more football games appear, the more they seem to be mutations of several previous ones. *Kick Off* was midway between *Speedball* and Emlyn Hughes' *International Soccer*, for example. *John Barnes European Soccer* (JBES) seems to have pinched ideas from Emlyn Hughes, *Super Soccer*, *Match Day* and, of course, the mighty *Kick Off*.

Unfortunately, it also seems to have borrowed a lot of their bad points.

The basic design is standard fare. Eight teams compete in the European league for the championship title, with your opponents controlled by either human players or the computer. Additionally, there's the option to play a one off match between you and either a friend or a computer-controlled opponent. You can play as any of the teams, but it doesn't really matter as there doesn't seem to be a lot of difference between them.

OPTIONAL EXTRAS

There are a huge array of options to work your way through before play commences. You can choose opt for weather effects; whether to display a *Kick Off*-style scanner; the length of the match; if you control the whole team or just John; and the assorted control methods which include an option for play with a Sega joystick. Once you've found your way past the various options, and selected your team and one of the six basic formations, you can finally try your hands (or feet) at a match.

JOHN BARNES'

EUROPEA

Hi Quality Version Available on AMIGALAND.COM



Above: The player under your control is indicated by an arrow at his feet. This switches when the ball is passed.

Below: Although the likes of Ruud Gullit and Gary Lineker are in the squad, you'd never guess by the way they play.



Above: As the ball passes the player, their head follows its path. JBES is full of nice touches such as these.

Below: The strength of a shot is determined by the length the firebutton is depressed and is perfect for long shots.



Above: The Goalies are extremely brave and dive marginally early - they can also dive at an attacker's feet.

Below: Whenever a goal is scored, it can be viewed repeatedly using the handy Red key facility.



If it's graphic trills and thrills you're after, you don't need to look further than this. I would go so far as to say that these are the best graphics ever seen on a football game. The player sprites are large, and very well animated, and players' heads even track the ball as it passes them—most impressive. Similarly, the crowd bob in their seats, the referee constantly stomps about the screen, and the players have different hairstyles, beards and skin colours. It seems that Krisalis have gone for a football game that looks like a game of football. This, they've done excellently.

FOUL!

However, it also seems that Krisalis have tried to emulate how difficult a small leaf of Cabbage would find it to play football — especially when faced by a computer opponent who could put Pele to shame. There are a few major flaws with the playability, the controls being the largest problems. The response time between

joystick and player movement is simply too long, and often means that a lot of the time players are seen looping round the ball, but never quite connect. Also, the length of time between pressing the firebutton and kicking the ball is atrocious — a full second and a half at one point. The strange thing is that this rule only seems to apply to human players, as the computer can accurately pass, tackle and shoot without batting an eyelid. A typical playing sequence goes like this: Human player gets the ball. Checking the scanner he spots a player just left of the goal in a perfect position to shoot. He runs. He leaves the ball behind him, realises his mistake and turns and races back towards the ball with a computer player mere inches behind him. He reaches the ball first, turns and presses the button to kick the ball upfield. In the small war between firebutton and kicking, a computer player whips the ball from his feet. While standing on the spot it passes the ball backwards to another player. Another two perfect passes and the



Another crack at goal (scored by the 'Keeper'...

GAINING CONTROL

After their successful Manchester United games for Krisalis, developers Teague decided to upgrade their control system for John Barnes' European Soccer.

The basic controls remain the same, with a short tap on the firebutton giving a low ball and a long tap giving a high ball. Holding down the fire button 'locks' a player running in a direction, allowing you to select a direction to turn and kick the ball.

The other players are now far more intelligent than before, and will move into positions to receive the ball when it is passed. Passing still isn't as automatic as in Kick Off, but it does add a neat touch of realism.

computer shoots a goal straight into the back of the net. Most annoying!

BARNES STORMER

Everything moves about on-screen quite fast, and this is a real accomplishment when the size of the sprites is taken into consideration. It's actually a little too fast, though, adding to the overall difficulty of getting possession and keeping control of the ball. The way the ball is kicked is dependant on which way you turn the joystick with the firebutton depressed. Sometimes it will go a 90 degrees to the direction you are running, whilst on others it will go in the direction you're going, but only a couple of yards. Kick Off's controls were complex, but logical and intuitive. JBES' controls seem to be merely awkward and unpredictable.

All its graphical thrills aside, John Barnes' European Soccer seem to be little more than another unplayable star licence. It has dashes of real inspiration — Teague have created an excellent free kick system. Whenever a player is hacked down in the box, as they pick themselves up your opponents form

IN SOCCER

Hi Quality Version Available on AMTIGALAND.COM



Although you can select your team from the eight provided, there's very little difference between them.



During the one-player game, you are allowed to choose both your and your opponent's tactics. This way you can alter the balance of play slightly by weakening their attack.



buyers guide	
release date	May 1992
genre	Football Sim
team	Teague London
controls	Joystick, Mouse, Sega Joypad
number of disks	1
number of players	1/2
hard disk installable	yes
memory	Minimum use of 640k
optional hardware	and chips

Whenever a foreign player scores a particularly good goal play stops as they scoot off to celebrate. During one game, for instance, after scoring a glittering sight-become a Dutch player practically did a jig on the field before play could resume!

a defensive wall. As they do so you are invited to select the taker, and position a handful of attackers where you are aiming to punt the ball. After the opposition has done the same, you are given one more chance to position another player, before taking the kick — it takes a while to set up, but is very effective.

However, even with brilliant ideas such as this, the game still can't cut it. Excellently presented, JBES advances the football game's image and look well into the 90s, but the playability takes us right back to the days of the infamous World Cup Carnival

KRISALIS £25.99

Nice Legs, shame about the game

GRAPHICS	89%
SOUND	85%
LASTABILITY	70%
PLAYABILITY	67%

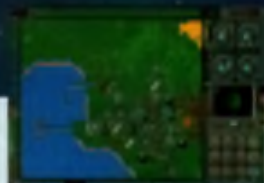
OVERALL 75%

MILLENNIUM PUTS THE WORLD IN YOUR HANDS



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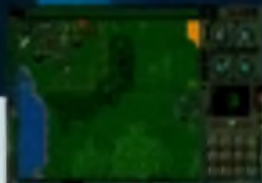
GLOBAL EFFECT



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The world is in your hands - take control!



Constantly monitor the state of your planet.

**Amiga screen shots
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PC & COMPATIBLES (640K)
Amiga, Roland,
Soundblaster

Tony Dillon is on the Piste with a challenger to Winter Games. Can Microids steal Epyx's glory - and the Gold medal?

SUPER SKI 2



Below Left: From this scintillating screen, any one of the events can be selected. However, the real fun is in the Hot Dog event (below right) which sees two players performing complex moves.

Hi Quality Version Available on AMIGALAND.COM

SKI SUNDAY

If anyone out there remembers the Epyx games of sports simulations, then Microids's *Super Ski 2* will be a true trip down memory lane. *Super Ski 2* takes the would-be Eddie Edwards through six snow and ice-based events in a race to collect as many gold medals as possible. However, thankfully Microids have abandoned the mopey Eddie 'The Eagle' Edwards licence that Elite lumbered the original with when they distributed it a few years back.

Up to four human players can compete and they take turns at the different events, with the unused characters' shoes filled by computer-controlled players. I wouldn't put money on beating them, though, as they seem to have a better feel of what to do than you do!

As the title suggests, most of the events are variants of skiing, and these are split into two groups. The first comprises downhill, slalom, and the giant slalom, and all three use the same screen layout to depict the action. The centre of the screen shows a sprite-based 3D view from behind your skier as he hurtles down the hill. Both the slalom and the giant slalom involve racing left

and right between coloured flags, whereas the downhill event simply involves reaching the bottom of the hill in as fast a time as possible. Points are awarded for the fastest time, but time penalties are added for faults - missing a gate instead of going through it, for example.

EASILY SLED

The final line of events are a little more interesting. My personal favourite has to be the Bobbed - and Microid's version is certainly the nearest I've ever come to whizzing down a slippery tunnel whilst gliding on a Ro-Car! Viewed from behind the player, it's a dangerous dash along a fast moving polygon-generated track, following the faded line possible, whilst climbing the banks of the curved track to hurtle around corners. The feeling of speed is quite incredible, and climbing too high up the sides of the track may result in you flying off the top, flying away into the distance and landing with a pattering thud. This adds a real element of skill and brings the simulation probably the closest such a game has come to reproducing the event - I love it!



WHERE IS HE NOW...

The original *Super Ski* was imported by Elite, who promptly stuck Steve Eddle 'The Eagle' Edwards name on the title. Eddie Edwards was a strange character. Like Frank Beem, he was exactly a massive success, but his fighting spirit and stubborn attitude as he continually came last in the ski jump endeared him to the British hillside readers. Daily enough, fame soon followed and, in his sport celebrity style, record deals and money go-ons came rolling in. However, it was only to be a short-lived thing, and Eddie's luck faded. The first major blow came when he was banned from entering this year's Winter Olympics. As a result, his sponsorships and work offers dried up and he is now seriously broke - and, according to *The Sun* newspaper, is involved in legal wranglings with his parents over his gold for high house and they are refusing to pay him back.



and up the Hot Dog and Slo Jump events. Hot Dogging is a strange sport which involves making as many flash moves and poses as possible whilst racing down a bumpy track against a computer opponent. The more posy the leap, the more bonus points you score. Finally there's the true test of stomach strength. Spending down the jump ramp, you have to try to keep your skier balanced as he flies through the air, and then try to land him successfully as he hits the ground.

PRESENTATION CEREMONY

Despite the rather loading screen, the game's presentation is superb, and the obvious time and effort that must have gone into the graphics and animation make the game simply shine. The sprites are large, humorous and full of character. The faces of the bobbed team as they fly off the track and into the ground are a delight to watch, and the stomach-churning grunt made by a downhill skier hitting a tree head on at 35 mph is a real treat for carless.

It plays well, too, but not quite well enough. For the beginner, *Super Ski 2* is a little dishwatering, as the consistently excellent performances of the computer players give little incentive to push up your act - surely even Franz Klammer takes a few dozen goes before I could manage to claim a

single bronze in an event. Like the many sports simulations preceding this, I doubt even the variety of events or great presentation will add the much-needed lasting appeal for the single player, but multi-player armchair enthusiasts will probably stay on the Piste for a good few weeks.

Game guide	
release date	Out now
genre	Sports sim
team	In house
controls	Joystick, Keyboard
number of disks	2
number of players	1-4
hard disk installable	No
memory	Any Machine

MICROIDS £25.99

Excellent, but ultimately short-lived fun...

GRAPHICS	90%
SOUND	87%
LASTABILITY	80%
PLAYABILITY	79%

OVERALL 80%

Mark Patterson is the star of the dodgiest film licence of all time...

PLAN 9

FROM

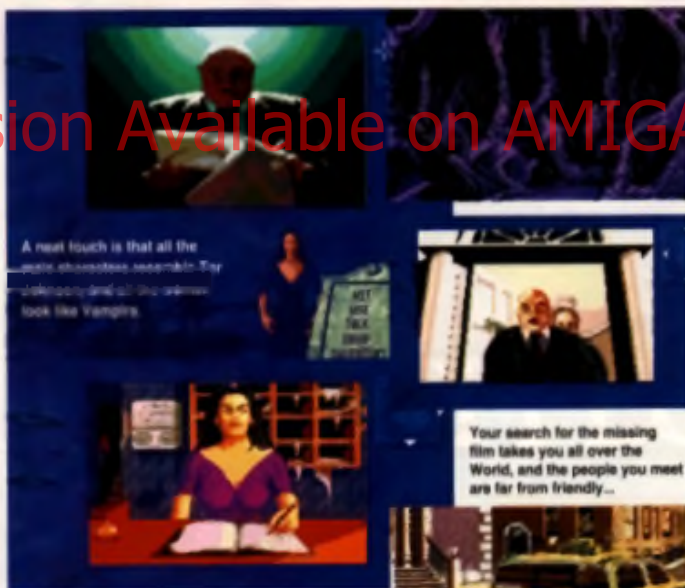
OUTER SPACE

THE ULTIMATE TURKEY

Widely regarded as THE worst film of all time, Plan 9 From Outer Space is perfect for a game adaptation. Which leads me to ask: what was wrong?

What pretended to the film's plot featured a flying saucer crash-landing on Earth. Whilst they awaited its repair, the fiendish crew created a zombie (played by Swedish weight-lifter Tor Johnson) who was under the control of the saucer's Commander - the seductive Vampira. As word gets round about the alien presence, the extra-terrestrials come under attack from the local army-reserves, and their glorious assaults are portrayed by World War II news-reel footage. Likewise, adding to the film's mystique(!), a mysterious cowed figure creeps around - perhaps this suspicious stranger would have had a more prominent part in the proceedings if horror legend, Bela Lugosi, hadn't died early in the film's production (still, the show must go on).

Unfortunately, virtually all of this mishmashed plot is lost in the game, which instead casts you as a private detective hired to track down six reels from the film which have mysteriously disappeared - it certainly makes you wonder why anyone wants it back! In fact, one of the few things that connects the game to the film is that most of the men look like Tor Johnson's zombie character and the women resemble Vampira. Good



buyers guide

release date	May 1992
genre	Adventure
teams	Orion/Infocom
casualty	medium
number of disks	4
number of players	1
hard disk installable	no
memory	any machine

SPECIAL DEFECTS

The dramatic conclusion of the film had the flying saucer exploding - well, burning - in mid-air. During an interview with one of the film's crew this scene was likened to 'two tin plates stuck together, covered in burning lighter fluid, then dragged from a rising'. The crew members estimated that it was so much bling - there wasn't enough cash in the budget for tin plates so they used paper ones instead...

ideas, such as role-playing, are noticeably lacking in what is one of the most disappointing licenses of all time.

ALL AROUND THE WORLD

Plan 9 boils down to a very run-of-the-mill point and click adventure. The centre of the screen displays your current location, including any present objects and characters, while in the bottom-right corner is a list of available commands. These include take, drop, inventory and talk, and to use one simply click on the required deed and on the object within the display screen you wish to manipulate. Similarly, striding up a conversation with a character offers you a multiple-choice set of questions or responses, although only one will have the desired effect. Unfortunately, though, the choices are rather obvious with the other options coming across as complete drivel.

CLEVER DICK

There are plenty of locations to explore among which you'll find Bela Lugosi's house, Rio a bar-infested cave, and a CIA building. When all six reels are retrieved it's up to you to use your editing skills and stick them together, making the biggest turkey of a film ever - blimey, a Private Dick who doubles as a Film Editor, what a rarity!

One redeeming feature (although not redeeming enough to warrant buying the game) are the graphics. The backdrops are detailed and atmospheric, and the variations on Tor and Vampira are neat. On top of that are some very nice animated effects which help patch together the somewhat ropey atmosphere. There are also plenty of sampled sound effects, including screams and creaks, which are supposed to surprise the player, but usually just wake you up.

If Plan 9 had more to do with the film it would have fulfilled many peoples' expectations, even with its many faults. Personally, I'm highly disappointed. It's frustrating to see such a good idea wasted. This is basically a standard, and very uninspiring adventure, with little to make it stand out from the crowd. If you're after a good example of this genre, check out *Elvira 2*, but definitely think twice about buying this.



Will, don't ask me, I don't know who the word broke in the Mac is...

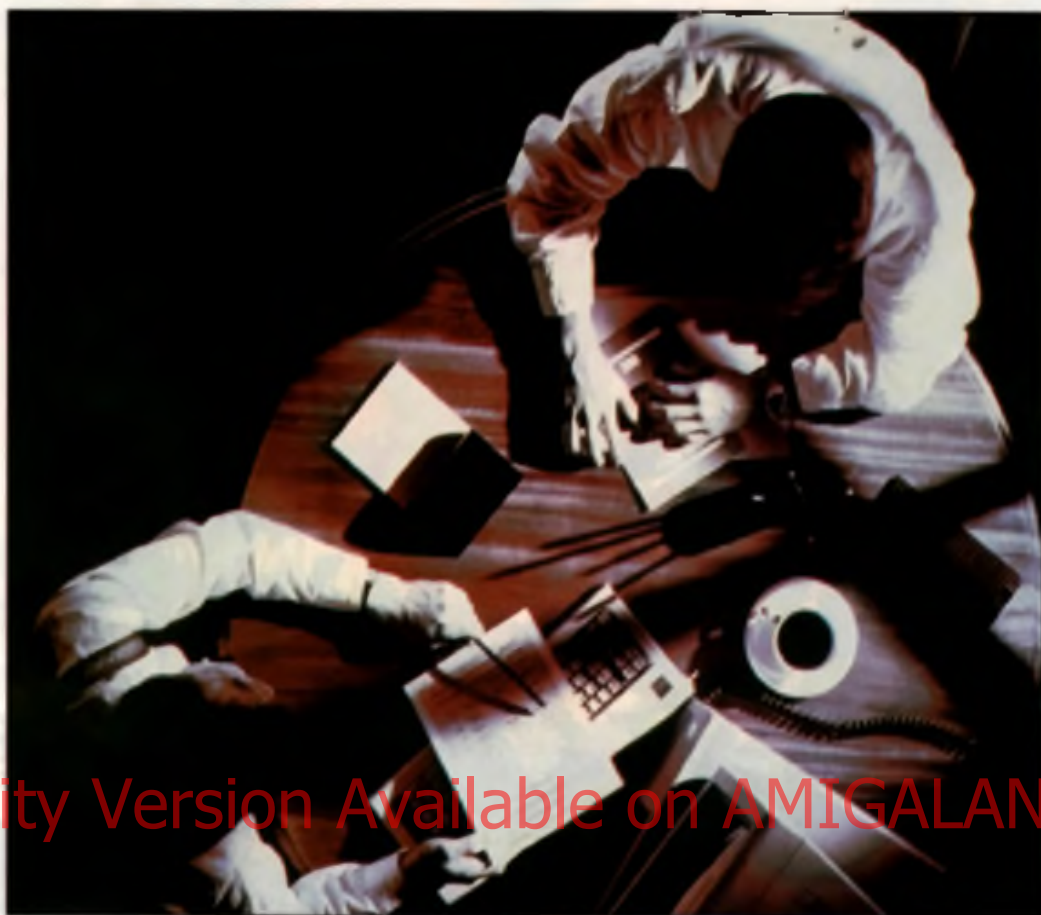
GREMLIN £25.99

A tragic waste of an excellent licence...

GRAPHICS	84%
SOUND	83%
LASTABILITY	73%
PLAYABILITY	69%

OVERALL 64%

“It’s clear from this evidence...



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VOTED THE WORST MOVIE OF ALL TIME...



Screen shots from PC version



Break new ground in interactive entertainment when you enter the world of Plan 9. You are the private investigator who must assist the legendary Bela Lugosi, the original Vampira and the totally forgettable Tor Johnson, to recover six missing film reels and rebuild the cult movie classic. CONTAINS ACTUAL FILM FOOTAGE TO SPLICE AND EDIT.

IT'S GOT TO BE THE STRANGEST GAME EVER JOE!

YEAH MAC...
...AND...
...SOMEBODY IS RESPONSIBLE

WHERE THE STRANGEST THINGS HAPPEN !!

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Gremlin Graphics Software Ltd.,
Crown House, 2-4 Carver Street, Sheffield S1 4RS.

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PACIFIC ISLANDS

Empire's big guns return for a Pacific cruise. Mark Patterson fills his Tank...

TANKS A BUNDLE

These days sequels are becoming as inevitable as old-age and the Eurovision song-contest. *Pacific Islands* is one such inevitability, and as the follow-up to Empire's excellent *Team Yankee Pacific* is set around the same time as its predecessor, but in keeping with our current global peace, World War II isn't the reason for the game's many confrontations. Instead, a small army of Russian renegades have teamed up with the North Koreans and inexplicably invaded the small Pacific archipelago of Yama Yama.

In a whirlwind blow from fate, you and your platoon happen to be on a ship returning from the Gulf via the Pacific, and, as you're the closest, your unit of sixteen armoured vehicles has been selected to liberate the island. Well I never.

PLAY IT AGAIN

Without wanting to sound too dismissive, I'd spotted *Pacific Islands*'s biggest flaw within seconds of loading – it's virtually identical to *Team Yankee*. Okay, so there are loads of new features and ideas, but the similarities are so great, they aren't something that can be easily overlooked. The graphics, for example, are extremely similar, as is the control system. In fact, with the exception of a few more user-friendly panels, the only major changes have been to the scenarios which are brilliantly inter-related, and the addition of a screen which lets you select the next bit of island you want to attack. Anybody who owns *Team Yankee* and buys this may feel a little



Above: The main game screen is split into four quarters, each one displaying a view from one of the four different units under your control.

TANKS A MILLION

You have four different types of vehicles on your side for the conflict, none of which are superior to others. Your mainstay is the M1 Abrams, which combines firepower with protection, lower sights, smoke generators and a fair turn of speed. Next in line is ITV, which is nothing more than a missile launcher on wheels. While not very well armoured, its fearsome TOW missiles can devastate enemy tanks. Bringing up the rear are the M2 Bradley and M113 fighting vehicles. These are lightly armoured troop carriers with a fair amount of firepower, but not much in the way of armour, so they're best left for mopping up operations.

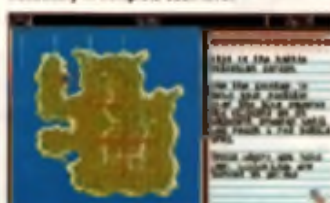
cheated. Obviously, Empire were also concerned about this, which is reflected in a chapter in the manual which explains the differences between this game and its predecessor – for all those who hadn't noticed, I suppose. A better idea may have been to release the game AND some sort of scenario data disk for the original. As it stands, this is dangerously similar to the original.

MAKING ENDS MEET

One prominent new feature calls on you to remove your battle-gear and play accountant. Each time an enemy unit or building is destroyed, you earn yourself a cash bonus. At the end of a mission, this money can then be spent on repairing your vehicles and buying ammunition. Here's the sneaky bit: as the game progresses, the enemy become tougher and you expend more ammunition and take heavier damage, but you don't always get enough money to cover all your expenses, so you end up trading off shells for tanks or vice-versa – although it is possible to purchase a slightly-used second-hand model (presumably used by a little old Lady who used to drive it to Church each Sunday). To tell the truth, I was rather put off with this feature. I may be on my own here, but I'd always thought a tank commander's job was to shoot things, not balance a budget. I'm quite content with wasting the enemy. I don't need any of the financial rubbish – I'd rather leave that to the bureaucrats, and it comes across as similarly out of place here.



Mission briefings detail the course of action necessary to complete each level.



PACIFIC ISLANDS

BLOW BY BLOW

There are five islands to free, and each is divided into a series of mini campaigns. Normally, you're called upon to achieve three or four objectives to complete a mission. These usually have your platoon destroying a communications post or some other enemy site, while eradicating every enemy unit you come across. To do so, you have sixteen vehicles, armed to the axles with missiles and machine guns. These sixteen are further divided into four squads of four. The Koreans are wise to your landing, though, and have prepared by laying mine fields, digging tanks in, and sending out scouts. If any of your vehicles are spotted by an enemy patrol you have to act upon them a bit smartish, as they usually scurry away to warn their friends that a large bunch of Americans are on the way.

For a little extra help, you also have a few artillery units who'll take advance bookings. Before you embark on a mission, you can ask for a minefield to be laid or smoke bombs, high explosions or multiple-warhead shells to be fired at a particular location at certain times. The down-shot of this is that it's very easy to advance faster than you thought, and end up on the receiving end of your supporting fire. If you want to take advantage of this feature, it's best to plan ahead and keep to a very strict battle plan. That's not as simple as you might think, as the temptation to keep on pummeling the enemy is a great.

CONTROL SYSTEM

One of the notable features of this, and of course *Team Yankee*, is the excellent control system. Creating a system that allowed for adequate control of sixteen vehicles split into four units was a major achievement by the programmers, and they have pulled it off admirably. The game is played via a series of three displays. These include the gunner's-view, where you control the tank and fire its weapons; a map screen where you select your objectives and guide your other units; and the status screen which shows how well each platoon is faring.

The main game viewpoint has the screen divided into quarters, each one showing a gunner's-eye view from the command tank of each platoon. When something happens to a platoon, you enlarge each display to fill the screen and consequently take in more of the action. All the commands are issued through a point and click system via a series of simple icons, so there's almost no need for the keyboard. This goes a long way to making the game far more enjoyable as you end up not having to think about issuing commands. In addition, the all-important weapons are equally simple to use, and can be switched between quickly and smoothly.



GUNNING FOR THE ENEMY

It's important to choose the right weapons for the job. HEAT shells pack quite a punch against buildings and troop carriers, but are ineffective against heavily-armoured vehicles. When you're faced with such a beast, you can resort to SARDs, which consists of a depleted uranium rod propelled by a huge charge which powers it through the thickest armor. For the ultimate in tank-destruction, though, there are TOW missiles. These can only be fired when the launch vehicle is stationary, but have almost twice the range of their counterparts, are very accurate and hugely powerful.

Should you get trigger happy and waste your missiles, you can fall back on your machineguns, which has an unlimited supply of ammo. It's quite effective against lesser vehicles, but try to face off with a tank in it and you'd be better off raising the white flag.



As and when damage is taken, the money you have earned by destroying the enemy can be used to repair or buy new tanks for your platoon.



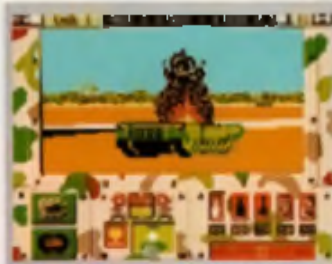
Although the sprites are a little chunky, they move well and are instantly recognisable depictions of the real thing.

release date	Out Now
genre	Tank Sim
team	Steven Green (coding) Martin Agnew (graphic design) Richard Mervache (additional coding)
controls	mouse, joystick
number of disks	2
number of players	1
save data available	Yes
memory	1 Mb

As with the first game, the graphics are excellent. The programmers have opted for sprite-based tanks, and although this results in a loss of definition, they are all perfectly recognisable - in fact, while the programmers were demonstrating the game at a show earlier in the year, a tank enthusiast came along and read their names off as they trundled on-screen! More importantly, though, the update is fast and smooth, too, keeping the action trotting along at a fair rate.

Apart from the ridiculous budget-managing aspect, this is a good game. If you own *Team Yankee*, and are coming to the end of its missions, you may want to take a look at this. Personally, I think they're too similar. Additionally, the first game's rough edges have

been eroded, and there is a great deal more to do in *Pacific*, but I still can't help but think there's not enough difference between the two. I can understand the coders using a successful game engine again and again, but why not opt for a totally different scenario - space, perhaps. Still, if you don't have *Team Yankee* in your collection, then I'd recommend *Pacific* without hesitation. It's absorbing, easy to play yet still taxing, and second only to MicroProse's M1 Abrams in the Amiga tank-sim top ten.



As battle heats up, the remnants of the enemy tanks are left to smoulder...



Such is the realism of *Pacific* that you can watch yourself blown to bits with a single screen.



If the enemy aren't immediately visible, an infra-red display can be called up.



By blasting holes in the runway, further air attacks can be curtailed.



The mission results screen shows your victories and progress are rewarded.

EMPIRE £34.95

Too similar to the original, but still great fun...

GRAPHICS	86%
SOUND	80%
LASTABILITY	87%
PLAYABILITY	82%

OVERALL 83%

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Dungeon Master, Steve Keen, explores the bright and attractive world of *Might And Magic*. Are these the best graphics yet to appear in an RPG?

MIGHT AND

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NEW BEGINNINGS...

After lighting your way through the first two *Might And Magic* adventures, it's only natural to assume that you're hungry for more. The evil forces of darkness are back and it's guaranteed that someone, somewhere, is going to be calling on your extraordinary services again, very soon.

Might and Magic's game engine has been given a thorough going over. The combat system has completely changed, and although it's far from perfect, it's much improved from its flawed predecessors. Sashling its way in on six disks, the game is at least four times bigger than fellow U.S. Gold stable-mate, *Eye Of The Beholder*, and an incredible clue book consisting of 250 pages has already been put together in anticipation of Joe Public's problems.

BATTLE COMMENCES

The expedition commences at the entrance to the watery catacombs of Fountain Head. You are given a well-balanced, predetermined party of six characters, including a Dwarfven Barbarian, a half-Orc Knight, and a human Paladin. The setting provides a steady introduction to the game world, and eases the player into the intricate levels. To begin with, nothing will attack unless you're provoking it, and the main objective is to seek out the various masters of the arts to improve your skills and guide you through the later stages. These experts include a Cartographer, who



Only the chosen ones will be able to enter the inner sanctum of the Magician's Guild. But once you've managed to get in, your problems are greatly eased.

will train you in the art of map making; the Pathfinder, who imparts knowledge of the fastest ways to pass through the game's dense forests; and the Swimmer, for those of you afraid of getting your hair wet.

As well as the creature content, the countless corridors also hide all manner of secret rooms and partitions. Once they are located, you can click on an icon in the control panel to break them down and pillage their contents. Creatures lurk behind every wall. The first stage monsters are lim-

ONE STEP BEHIND...

All magic users are advised to keep their spells at the ready. Combat is slow at the best of times, and another bad point is that you can't choose which character is going to attack next. Instead, a yellow box highlights the player next up to fight, and you must wait until it selects the one you wish to use. Normally, this wouldn't be so bad, but the computer gets rather confused if you press the mouse button too many times. As a result, when it finally reaches the character you wanted to pause on, it often skips past.

If you're lucky, you can obtain a spell from one of the fountains by throwing a coin into it. In addition, there is a resident Magician's school which will take on young hopefuls, providing that they have bought a membership to the Guild - and this can be found via a wandering Sage. The Magician's Guild is used to understand and learn the magical properties of the game's many spells, and also reveals the mystical power of the countless gems which are dotted throughout the play area.

As you travel through towns it's advisable to help people as you may reap great rewards. Tasks completed on behalf of others will either result in materialistic gain or aid in future puzzles. You start off with 2800 gold



ited to rather wet Rats who squeak a lot and do very little else, but on later stages they get rapidly tougher. Whilst the first batch of nasties can be fought off using a combination of fire spells and brute force, they often group together and consequently cause unpleasant times' more trouble.



They may look like they've lost their trousers, but don't say so straight to their faces



These two fellows aren't too happy, but you should be more worried about their friends



The computer maps the world out for you as you progress. It marks the spot where you are at all times and thankfully does away with pans

THE DEVIL YOU KNOW The ornate computer window isn't just a pretty facade. The ornate devils provide a useful function. The Sprite to the left of the screen flaps when a levitation spell is in operation, whilst the Imp on the right waves his arm up and down whenever a secret door or entrance is present. Likewise, the Gargoyle's face at the top of the screen screeches when it senses danger. There's also a self-naming vampire woman on the main control panel which can be accessed at any time to tell you where you are.



SALE OF THE CENTURY In every settlement, there are locations which will provide help and assistance. However, nothing in this world is free and it's advisable to have a large amount of cash ready before bothering the store owners. Fine's Flescion sells armour and weapons, as well as that little extra something for the weakened. The Lonely Heart allows you take a breather, get a drink and some grub, whilst sawdopping on some repairs. Unlike many other RPGs, whenever you rest your party will be restored to full health within six seconds. However, a resting party are sitting ducks when attacked, as they'll continue to sleep until the characters are hit, which often leaves one here to face the enemy alone.



MAGIC 3



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Screamers are pretty low in hit points, but they can do huge amounts of damage very quickly.



Take a well earned rest and role a new character at the 'Lonely Heart' tavern-restaurant home.



The underground caverns are full of traps. Good timing and a keen eye are needed here if you're to get through alive.



pieces which are rapidly eaten away by regular visits to equipment shops. In addition, if you're not happy with your team members' statistics, you can visit the Forty Winks Inn and hire another gang, or create a replacement. Once the computer has rolled the new warrior it'll even indicate the best occupation for them to follow, taking into account their new skills.

MAGICAL GRAPHICS

Might And Magic 3's graphics are nothing short of fantastic. The detail used to depict the play arena is suitably subdued, and makes the monsters seem even more lifelike. Trots can be seen breathing and you can even see their stomachs moving in and out as they attack. Globular bubble monsters undulate towards

you, creeping across the floor, boils bubbling randomly as they approach. The fountains that adorn the first level enclosure actually look like they're comprised of digitised pictures of women's faces, rather than the expanded pixelated renditions they actually are - and the overall effect is simply excellent.

All the usual inventory screens are included, as well as the endless lists of earned items. However, I never came across the need to pick anything up using the cursor, as any items acquired were automatically placed in my inventory. The on-screen movement controls were a bit of a handful at first as there aren't any separate icons on-screen; instead, you must place the cursor at the very top of the game window to move forwards and to the sides to move left and right. The position for turn left and sidestep are very close together and unless you take real care, it's easy to become disorientated, especially in the rambling wilds outside the towns.

SIZE IS EVERYTHING...

Exploring the towns, forest planes, villages, castles, mansions and underground labyrinths, it's easy to understand just how large the game's play area is. A staggeringly simple intro, consisting of some thumping music and a disembodied head floating in space, grabs your attention from the start. This talking semi-skeletal face is that of Shaletem, your

nameless, and he recounts in detail his plans for you during his third challenge in crystal-clear digitised speech. There are no real fancy graphics, but the combination of music, facial animation and the lengthy samples is stunning, and sets the scene perfectly.

The programmers have gone to great lengths to maintain the tradition of the *Might And Magic* series, and this is made obvious by the game's distinctive style. *Dungeon Master* freaks take heed: this is not necessarily for you, as the game's roots are placed firmly in the *Bard's Tale* style of adventuring. Whatever your preference, though, this is top quality stuff that you're not likely to tire of quickly. With over ninety fully-animated and detailed monsters, I doubt if many of you will finish it within months of constant play - but it will be fun trying!

buyers guide	
release date	April 1992
genre	RPG
team	New World Computing: Louis Johnson, Bonita Long-Hansath, Julia Ulano (Graphics) Mark Caldwell (Code) Todd Hendrix (Sound)
controls	mouse
numbers of disks	6
number of players	1
hard disk installable	yes
memory	1Mb

US GOLD £25.99

Great depth equalled by incredible graphic detail 9

GRAPHICS	91%
SOUND	83%
LASTABILITY	89%
PLAYABILITY	80%

OVERALL 90%



Hopefully, you won't see this screen very often as it signifies 'Game Over'. The die-hard Stormlord has three lives, but there are plenty of life-extending coins throughout the levels.



These rate amongst the biggest and most animated end-of-level guardians ever seen. Not only are you attacked by a scuffling crab-like creature, but the huge robot swings his head whilst large plasma balls come at you.

RETURN OF THE WARRIOR

The Stormlord has returned, but anyone familiar with Ralf Cecco's Gnome-like hero won't recognise the star of 21st Century's, stunning platform-based beat 'em up. The only thing that this sequel owes to the cutesy original is the main sprite's name. I don't know what they've been feeding him down in rural Oxfordshire, but he must have undergone some serious steroid treatment.

Not only is the Stormlord back, but his arch-enemy - the evil Queen Bahd - returns, too. She's back abducting the fairy guardians of Lynn Cemg, and has also teamed up with the Devil himself to make sure that her plans won't be thwarted again. Once more, your task is to rescue the imprisoned little folk, before the haggard crone drains the realm of its life-force and uses it to restore her body to that of a young woman.

To help you on your quest through the four-level world, you have been supplied with an unlimited amount of battle-axes and a set of five Opal stones which act as beacons and make the exploration of the game's platformed Castle, Pits of Hell, and Enchanted Forest a lot easier. Despite the game seeming rather short at four levels,

there's plenty to do. Additionally, the gem's minute size belies their true importance, as they will prove invaluable when it comes to plotting a path through the tortuous stages.

STUNNING...

If has to be said, if you haven't gathered from the screenshots already, that *Deliverance* is graphically superb. Owing more to *Gods* than 21st Century would care to admit, the hanging birds and bats have come straight from the Bitmap's classic. However, the game is saved from being branded a total rip-off by its fresh approach and excellent additional touches. Each level features a variety of mutated beasts to slay, and they come in abundance.

Resembling jaundiced experimental baboons, the first level's boys are B-I-G. Swinging from rafter to platform, they emerge from every side looking to batter you into a pulp with muscles that would make the Incredible Hulk take out a membership at Gold's Gym. Your sprite's no Pee-Wee Herman, though, and has two forms of defence. Holding down



In the Enchanted Forest anything can happen and what looks like a simple tree suddenly opens into life ready for the kill.

the firebution you can spaw forth a stream of whirling battle-axes which will either knock the Gargoyles out of your path and onto a lower level or simply kill them. Alternatively, whenever the firebution is held down and the joystick wiggled up and down, the Warrior goes crazy-sne and enters 'Viv Richards Mode' as he grabs his axe with both hands and Moulinexes the ghouls into trashy-sliced pieces.

Other nasties include massive spiders which scurry through the level corridors. These climb walls and ceilings in an attempt to drop on you.

Thankfully, and adding to the game's already-impressive look, the size of the sprites hasn't compromised the amount of animation and as the whirling dervish does his stuff, there's plenty of squirming and gratuitous blood.

PROGRESS

An impressive amount of detail has gone into the objects which the hero can interact with. It's impossible to progress through the levels without keys, and these are located inside the ornate cupboards



Deliverance has everything a sequel should have - better graphics, improved sound, and a larger play area. But does it play better asks Steve Keen?

DELIVER



apread throughout the complex. Not all house what you want, though, so expect the unexpected – and the deadly.

True to platform form, completion of every level rewards the Warrior with a massive guardian to contend with. The first is a huge green Dragon which thunders towards you breathing the most realistic fire I've seen in any game. The colled monster's flames burst from his nostrils and swirling, smaller sparks tickle the air as they disperse in flickering clouds. He's easy enough to kill, but worth coming back to get a closer look at just to admire the attention to detail. Once defeated, the Guardian implodes gradually in a series of minor explosions until their innards are displayed amidst the rotting remnants – it certainly beats fading from the screen politely! In addition,



There are lots of surprises and the intelligent monsters don't just walk on from the sides but drop from the roof too.



Every floor has to be explored very carefully as you never know what's going to leap out at you. Avoid the fires of Hell.



deserves all the praise they can get. Probably the best sequel I've ever seen. *Deliverance* doesn't offer anything new in the gameplay stakes, but its presentation easily lifts it above *Gods* and the like. It's so gorgeous to look at that you'll want to play it until you complete it – and even when you witness the impressive end-of-game sequence, you'll be back for

every defeated monster – Guardians included – leaves coins in its wake which are used to restore any lost health, so there's no excuse for not getting in close.

CHANGE OF PACE...

The final stage takes place in Heaven and the game changes style dramatically. Suddenly sitting astride a huge metallic, leather-winged serpent you embark on a horizontally-scrolling blast. After the splendour of the first levels, this is a real cop-out. All the fast-moving nasties are extremely tiny com-

pared to their platform-based counterparts, but, size apart, they are still exquisitely drawn and the level very playable – with loads of the smaller angels available to collect and power-up your steed.

21st Century are making a name for themselves with quality graphics. *Rubicon* started the trend, featuring excellent sprites and backdrops but poor gameplay. *Deliverance* is also well endowed graphically, but this time the all-important gameplay is there, too. Anyone who can produce quality of this scale on our home machine

more. Pure sequel magic!

buyers guide

release date	Out Now
genre	Hack 'em up
team	Kim Gunnerson (Graphics) Peter Vesterqvist (Code) Brent Nelson (Sound)
controls	joystick
numbers of discs	1
number of players	1
hard disk installable	no
memory	1 Mb

21ST CENTURY £25.99

A stunning-looking and addictive sequel... 9

GRAPHICS	94%
SOUND	80%
LASTABILITY	79%
PLAYABILITY	90%

OVERALL 85%

ANCE



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DAMN WEIRD

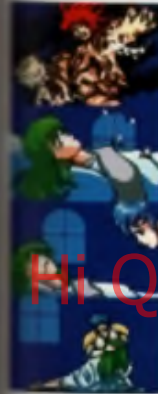
The company behind such varied releases as *Rattle Ina* and *Atomino* have now turned their attention to a Japanese-inspired shoot 'em up. And it's weird.

The game's intro begins with an evil warlock casting a spell which sends thousands of insects rampaging across the country he unjustly rules. As the swarm sweeps over the land, inflicting death and misery in their wake, two innocent cottage dwellers come under attack. Ikuro survives, but his wife is badly bitten and, as her life slowly ebbs away, her young lover swears revenge on the Dark Lord. All of this is rendered in Japanese graphics and is quite superb.



FIVE STAR ACTION

The action takes place across five levels, each of which is made up of three stages. Each level has a theme and related bonuses with bonus points awarded for each completed stage and special bonus stages for successfully capturing special sprites.



The smart intro evokes a Japanese feel to the game and is certainly eye-catching.

The first of these levels is set in a meadow crawling with bugs, insects and other creepy crawlies. There are both air and ground-based enemies to avoid and all are capable of spitting nasty venom into the air. Starting with five lives, an additional life is granted at a set number of points but just one life is left to your small wasp. Various power-ups are available in the form of small red flowers which are released after certain enemies have been destroyed. Once collected, these can give a variety of weapon enhancements, including bombs, quick fire, deadly stinger missiles and triple shot. There's also a drone fighter boss-cre which hovers about your main sprite and gives you some much-needed extra firepower.

Next it's straight into an underwater sequence which takes place in a giant pond. Aquatic animals of all shapes and sizes inhabit the gloomy depths but, if things become too hectic, it's possible to fly back above the surface. Although this might get you out of trouble, there are also airborne opponents to counter as well as rocks and boulders. Be careful, or you just might end up ping-ponging into a rock



face, your splattered remains reminiscent of all those squashed insects that collect on a biker's teeth after a long ride.

MAKING A STINK

The sewer section comes next, complete with empty bottles and cigarette butts as well as deadly toxins and skeletal remains. Come into contact with any of the poisonous vapour clouds down here and the screen flips, reversing the controls and making things twice as difficult. Inexplicably, by the fourth level, your tiny wasp sprite has gained some metal armour and is now puffed up as well as a swarm of robo-bugs and laser defense turrets. It's very reminiscent of *R-Type*, which is



Above: Top: The garden throws up all kinds of adversaries, from caterpillars to deadly moles. Above: Level three is set in a sewer, populated with deadly waste products and other horrors.



Above: Fire a deadly dart to finish off the huge fish. Below: The action heats up in level four's deadly robotic level.

release date	20th April 1992
genre	shoot 'em up
teams	Blue Byte
controls	joystick
number of disks	2
number of players	1/2
hard disk installable	no
memory	1/2 meg



no bad thing, but it comes as a complete contrast to the rest of the game. It is undoubtedly the best level, made up of a number of maze-like tunnels and incorporates some excellently rendered cybernauts and android opponents. The final level pits you against the most dangerous creature the evil lord Hexax ever created. Negotiating their nesting grounds, your final task involves their bloody destruction and the successful retrieval of the antidote for your injury. *Apolya* is a competent blast, rightly enough, and some of the 32 colour graphics are very inventive, but it's not really in the top ranks of the genre. There are the usual end-of-level Bosses to take care of

COMING ATTRACTIONS

Company based Blue Byte, founded in 1985, have collaboratively kept a low profile since their inception, preferring to have their games distributed by several European publishers such as USSoft and Polygram. All that's about to change. Though, thanks to an aggressive new marketing policy, from now on, Blue Byte games will be distributed in the UK by Newport Media, not by industry veterans, Ocean Software. *Apolya* is just one of several new Blue Byte games scheduled to appear over the coming months. Other titles include *Burnin' Heat*, the sequel to one of the most popular strategy games of recent months; *Light*, a two player platform game set in the Prehistoric times; and *Starlight One*, a 3D space landing game.

and there's a weirdo boss stage which involves a mad scramble to collect as many bonus angels as possible while avoiding the stage's deadly darts. At the end of the game it's possible to choose from four degrees of difficulty, a two player simultaneous mode, and when an extra life should be awarded.

Two-years-in development, *Apolya* is an engrossing blast. Its intriguing narrative means you're actually getting five mini-games in one, which can't be bad. It's not going to set the world on fire, but it's no damp squib either.

BLUE BYTE £25.99

Varied Japanese-inspired shoot 'em up

GRAPHICS	83%
SOUND	78%
LASTABILITY	78%
PLAYABILITY	84%

OVERALL 80%

Blue Byte bite back with a bug-infested shoot 'em up extravaganza. Dan Slingsby takes the lid off this particularly dangerous Hornet's nest.

APIDYA

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RUGBY - THE WORLD CUP

English-licensed by CU sim buff, Mark Patterson, to Kick Off with an oval ball, Rugby - The World Cup will have you clutching the controls in anticipation.

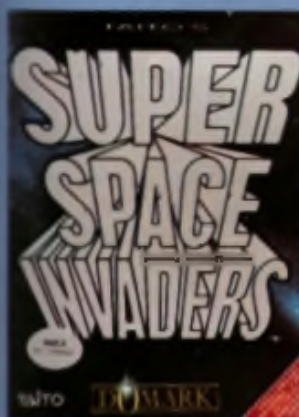
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play how they wanna play...

But watch out for Tully - he plays mean.
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RENEGADE'S RESCUE

Following the sinking of Morosoff alongside Captain Bob, it looked as though *Fire And Ice*, Graftgold's much hyped cutesy project, was destined to join the ranks of *James Dean* and *Mars Cops* in the realms of never released games. However, in a blaze of wheeler dealing, Renegade have rescued the title and it's scheduled for an imminent release.

In terms of content, *Fire And Ice* is a bit of a step back in time for Graftgold, whose co-founder and veteran programmer, Andrew Braybrook, is famed for some of the most outstanding games of the 80s. Andrew is the man behind THE classic C64 blaster, *Undum AND*, the all-time Amiga classic, *Rainbow Islands* - excellent credentials indeed, and *Fire And Ice* will only enhance his reputation. It's a platform game in the tradition of Braybrook's *Gribbly's Day Out*. *Ice's* main character is a long-nosed Coyote, and bears a slight resemblance to the Sheep-napping Wolf from Hannah-Barabera's *It's The Wonderful* cartoon and Road Runner's arch nemesis, Wile E. Coyote.

As can be expected, the plot is thinner than Paul Daniels' hair. The Coyote is at home in the Arctic, playing the piano and minding his own business, when all the animals in the world suddenly go crazy and

start attacking anything that moves. It transpires that a mad Egyptian magician is the villain causing all the animals to go loopy, although it isn't explained why the Coyote is unaflected, or why he decides to travel the world and defeat the wizard.

PUPPY LOVE

Our intrepid canine isn't alone in his quest, though, and most levels feature stray puppies who'll make an

adoptive parent out of any passing hero. On stumbling across one of these, it will dutifully follow your every move, whilst repeatedly shooting in a sporadic manner. As the puppies have a tendency to hang around on high platforms, though, and travel in huge leaps, they often take out enemies way before you reach them. For all their usefulness, though, they age very slow and it's quite easy to leave them behind. Abandon them, or leave them on part of the screen



The higher parts of the screen are linked via magic levers which appear when a special button is held. A set of icy slides then descend automatically, and the Coyote must scare them before they melt.



Diving under water, the machine appears in the form of Squid and Turtling. Appropriately, the Coyote dons a pair of goggles as he explores the deep, murky depths.



It's been ages, but Graftgold have at last returned, and their long-awaited platformer is here. Mark Patterson wonders if *Fire And Ice* will make him blow hot and cold...



WHAT JOY! Like several console-style games of old, *Fire And Ice* supports a joystick option. By plugging a Megadrive joystick in to the joystick port, the pad's extra button will come into play. Instead of holding down fire to unleash your super weapons, instead the B button is used, saving time and hassle. However, quite how many Amigas who will rush out and buy a pad is a different story. Still, it's a nice touch...

where they can't reach you, and they let out a primitive digitised bark, presumably to make you feel guilty - and so you should.

The Coyote is armed with a strange weapon which is obviously a phlegm-based freezing agent. For as the nasties attack him, he simply spits at them and they are instantly frozen into cartoon-style blocks of ice. In addition, these hack-attacks can be enhanced with several types of special spitballs which are liberally scattered throughout the game ready for collection. These take the form of invisible blocks which appear whenever a stray spitball hits them. Further shots then produce extra supplies which are added to the Coyote's inventory at the top of the screen. These enhancements include wide range fire, which shoots eight globules in a wide arc; a super-charge gob, which explodes a few seconds after being fired; and several other types, including a shield which proves particularly useful.

ALL AROUND THE WORLD

Our Coyote's adventures sees him travelling across seven stages. Starting at his home at the North Pole, it's followed by - amongst others - a jaunt through Scotland, before eventually moving on to South America, and eventually the Sahara Desert. Each of these varied areas is divided into several sub-stages, making thirty levels in total. There are also a cluster of secret screens awaiting discovery which, whilst not essential to the game's completion,

FIRE AND ICE

FIRE AND ICE

usually contain bonuses and special weapons. Oddly enough, although the scenario tells of the Magician's effect on the world's animals, their ferocity has also rubbed off on to the vegetation. Each locale has its own strains of flora and fauna, which are also out to get you. If that wasn't enough, in the arctic you also have to fight off Eskimos, walruses, penguins, and little creatures on skis, whilst in Scotland there are sword-wielding troopers and little luzzy creatures (which I'm assured are baldy Spornies who resent never being worn) which leap out of trees and try to stampede the Coyote.

One of the first things that struck me about *Fire And Ice* was the quality of the animation - it's nothing short of excellent. Even the smallest characters - such as the dejected Spornies in Scotland - look great. What's really surprising is that most of the effects are achieved with very few frames of animation. The Coyote is also excellent, and features great attention to detail, such as his mannerisms and his facial expressions. Almost matching the sprites in terms of quality, are the fantastic backdrops. The ice-world is the plainest of the lot, but, even so, features foreground parallax, and shaded objects for the Coyote to walk behind. Nice touches, even if they aren't always immediately noticeable.

The music is another major feature in the game's already bulging cap, and, most of the time, it reflects the current setting. There's a highland jig in Scotland, for instance, and a suitably Arabic tune in Egypt. It has to be said that some of the tunes start to grate after a while, but luckily there's an option to play with just the sound effects, so I can't complain too much about that.

TOUGH LUCK

For the completely zedful game player who may never escape the frozen confines of the North pole, there is a rather neat Trainer mode. This lets you play any one of the first four levels, with the benefit of eight lives. It comes in most useful for the South American stage, which is appallingly difficult and all of the eight lives will be needed if you are to see the later stages. In fact, this is where you'll come across *Fire and Ice's*



Above: With the change in backdrop, the sprites are similarly shared. Perhaps the most impressive stage is the jungle-based scene, where rainforests give us to look signs of the Coyote, and are attacked by Coyote-eating plants who wrap up the scurrying beast's heels.



Left: The later stages get rapidly more difficult with the simpler platform layouts giving way to complex ledges which will give you under the Coyote's weight. In addition, some of the platforms swing, too, and this can cause all manner of problems as the relative moves change.



Left and below: Entering a bonus screen, one of Braybrook's old sprites makes an appearance - Grubby Gobby from Grubby's Day Out. In *Fire And Ice*, though, he's a little past who waltzes across the platform stealing the point-laden buttons upon them.



On entering the Pyramid at the end of the game, the Coyote faces the evil Magician responsible for the mutations. But there's still a surprise in store...

biggest problem - its mixed playability. The first three levels are relatively simple, but on entering stage four, things get ridiculously tough. This is almost excusable, though, as there's not much else to fault in the game and practice will see you through. This is one of the best platform

BRAYBROOK'S DAY OUT

In a nice return to his coding roots, one of *Fire And Ice's* stages features the main character from his classic C64 game, *Grubby's Day Out*. Tim, though, seems to have had no adverse effect on Grubby and whereas once he would spend his days trying to round up his little Grubbies, he now chases the poor Coyote around the platform laden screens. As he does so, he also does the many cakes, waffles and hamburgers which form the level's bonuses. With remembrance of an *Amiga Liberator* starting to circulate, does this mean that Grubby's going to be making a comeback, too?



In-Joke No 1: Inside the Scottish castle the sword-wielding Archon McClean (Gobby!)...

games I've seen on the Amiga. It's extremely playable, the graphics are nothing short of fantastic, and there are so many great ideas and smart touches throughout that you need to have an extremely keen eye to notice them all. Despite its slightly 'kiddie' look, *Fire And Ice* is extremely challenging, and, once you've completed it, you can always go back and attempt to find all the secret levels.

With *Fire And Ice*, GrafGold have made the best comeback they could have hoped for. With *Paradroid* never appearing, they needed to bounce back with a real smash. I'm pleased to say - as I'm sure Renegade are - that they've got one.

RENEGADE £25.99

An excellent return to form by GrafGold

GRAPHICS	90%
SOUND	85%
LASTABILITY	87%
PLAYABILITY	93%

OVERALL 90%

buyers guide

release date	May 1993
genre	Platform game
team	Andrew Braybrook (Coding), Philip Williams (Graphics), James Page (Graphics), John Lilly (Sound)
controls	Joystick, keys
number of disks	3
number of players	1
memory	Minimum need of enhanced machines
reviews	five

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SPACE QUEST IV

Yet again, Sierra is concentrating on the exploits of a space travelling hero from the sewers. Sarah Hibbert asks if it's really a giant leap for mankind...

MILKY WAY

Hey, dudes! It's time to get wacky and weird with two guys from Andromeda and a freelance intergalactic sanitation engineer called Roger Wilco. The guy in this sort of game is essentially one of exploration, puzzle solving and entering into conversations with total strangers. Wilco's home planet of Xenon has been decimated by unknown forces, zombies and droids are wandering the streets, and the Sequel Police from Space Quest X are after Roger's butt. Does the mysterious alien building in the distance hold the solution to these troubled times? There is only one way to find out.

GALAXY

Sierra's Creative Interpreter has been running the firm's adventures for years now. Of course, it has been refined and enhanced in the never ending march of progress. Nevertheless, somebody in cryogenic sus-

pension since playing the original *Space Quest* could still tackle the latest instalment of Roger Wilco if you unplugged their freezer and thawed them out in the microwave. Perhaps the most startling difference for them will be the easy control over their hero, where they can interact with any characters or objects located in their immediate surrounding with two clicks of the Amiga's mouse controller. Puzzles and puzzles can be overcome through the inclusion of classic adventure game commands - walk, examine, take, talk, even smell. Additionally, these functions can be accessed from a series of icons. Previously, adventurers either had to type out the commands or use a keyboard shortcut.

MARS

Over the past few years, Sierra has employed a cluster of professional artists to produce attractive 'rotoscoped' sprites and

hand-painted backdrops in every adventure. In the rotoscoping method an artist uses video footage of people moving around as a reference. Hopefully, this results in life-like images with a twist. Tried and tested movie and comic book techniques, including varying angles of view and close-ups, are also used to heighten the tension and increase your level of attention. Sadly, the pixel painters at Sierra do a far better job on the IBM PC where they can bill back on the luxury of 256 hues and a larger colour palette. The stuff on show in this Amiga adaptation is colour and odd colours by comparison. Furthermore, the display frantically jerks around when the programmers make their first, embarrassing attempts to scroll certain scenes for dramatic effect. These notable graphical deficiencies are accompanied by a dreary soundtrack and the occasional spot effect.

Is this game written in Amiga BASIC or something? No, it's almost certainly a product, in large part, of the aging 'C' much-loved by our American cousins. Sadly, this programming language is easy to use but can't handle speedy operations like scrolling. That's why titles like *Wing*

buyers guide

release date	How
genre	strategic adventure
name	in boxes
reviews	various, jaytech
number of disks	7
number of players	1
hard disk installable	yes
memory	1MB

Commander 2 and *Space Quest VI* require the power of a fast PC to function properly. After the miserable conversions of *Willy Beantish* and *Heart of China*, more proficient coders should have been contracted for interesting games over to the Amiga.

SNICKERS

Sierra has built up a loyal band of adventurers over the years who, if this release is anything to judge by, must be a bunch of... masochists. Although it can be played from two floppy disk drives, you definitely need a hard disk to get the most out of *Space*



Spot animations, which appear at regular points during the game, aren't up to snuff. Sierra thoughtfully provides a hint book to the game for a 're-servable extra cost'. Heenan...

Quest IV. The new version of Kikkisari can also help cut the awkward periods of waiting. I rapidly tire of seeing the watch icon as this means the game is doing something other than fulfil my every whim and desire. It's just not good enough.

In comparison with earlier *Space Quest* games this is a definite step backwards, both in terms of speed and gameplay. Basically, it reuses *Larry V*'s control system, and simply reworks new graphics and plots into it. OK, so it's obviously a good system, but it hardly offers variety for Joe Public. Additionally, I found it rather easy to die and quickly get fed up waiting for the game to let me get back into the fray. It's dripping in zany American humour with no style or substance, and for that fact alone, should probably be avoided. If this is all Sierra has got to offer, give me Lucasfilm every time.

THOSE WERE THE DAYS

Ken and Roberta Williams formed Sierra in early 1980 with high hopes and little money. Their gemmine game, *Mystery House*, was released on the Apple II. A number of forgettable games followed until Sierra cultured a magic formula with the 1984 release of *King's Quest I*, one of the first animated graphic adventures. The most famous Sierra character, *Larry* San Larry, appeared a couple of years later. In those innocent days, the publisher (and many others) were happy to support the Commodore VIC 20, Atari 300, Texas Instruments TI 99 4A and Coloco Adam! Perhaps you've got one of these classic home computers collecting dust in the 1987.



Sierra's in-jokes are filtered throughout the game. In addition, there are also several sex-n-romance jokes swirling you, too, with several...
 down from inside the...
 one-one...
 one-one...



Object manipulation is very easy and is simply a matter of highlighting the object you wish to control followed by what you want to do with it.



Only dedicated members of the *Quest* club need apply for active duty on this mission. It remains rather too scary ideas from good missions.

SIERRA £34.99

Another poor conversion over from the PC...

GRAPHICS	45%
SOUND	10%
LASTABILITY	40%
PLAYABILITY	31%

OVERALL 43%

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EYE OF THE BEHOLDER

THE LEGEND OF DARKMOON

Not since *Knights* has a game got RPG fans in such a flurry. Steve Keen, armed with anything he can get his hands on, believes that beauty is indeed, in *The Eye Of The Beholder...*



Hi Quality Version Available on AMIGALAND.COM

LONG TIME NO RPG...

It's been over a year since we first immersed ourselves into the fantasy role playing world of *Eyes Of The Beholder*, and just as most seasoned adventurers are coming to the end of the first game, U.S. Gold proudly release the long-awaited sequel. Heralded as the best and most faithful representation of a Dungeons and Dragons RPG since FTL's all-time classic, *Dungeon Master*, *Eyes Of The Beholder* held the number one spot in adventure land until Mindscape's *Knights* appeared – but the TV licence's reign is now set to come to an end, as SSI/U.S. Gold unveil the all-ginging, all-dancing sequel...

LET THE GOOD TIMES ROLL...

Emerging from the leathery sewers beneath Waterdeep, your trusty friend, Kheiben, gleefully expresses his gratitude for your efforts in the first adventure, and his ecstacy of the news that you've volunteered for the next one. Things go from bad to worse when he also informs you that, in a fit of extreme generosity and blind stupidity, you've donated all the artefacts, scrolls and valuables you fought so hard to obtain underground, to the city – did they see you coming, or what? People have been mysteriously disappearing in the North and West of the town and it's your task to find out why.

The first thing that strikes you about *EOB 2* is its ease of entry. Although the game comes with a

large and comprehensive manual, it's easy to pick up the rudimentary functions within minutes of exploration, and the more complex manoeuvres within an hour. As with most RPGs, your first task is to generate your fool-hardy party. If you're a hardened warrior from the first expedition, you can import your saved party – minus their collected goodies, of course – and use their experience and wisdom to your advantage. If you haven't got a saved party to hand, don't despair as a purpose-built 'Super Party' are included on the disk. Your party once again consists of four members, but there is also enough space to recruit two more team members

A BETTER CLASS...

The character classes will be familiar to most, but the concept of multi-class heroes may need some explanation. *Eye 2* not only incorporates different gendered adventurers, but different races as well. These fellow Earth dwellers have special abilities peculiar to their races and are therefore not confined to one class. For example, an Elf has excellent hearing, eyesight and dexterity and, although he could dedicate his life to being a rather spiffy fighter, he's more suited to the ways of a thief. Thus, incorporating his hereditary abilities with those he has studied and added to his capabilities, he can be made eligible for double-class status. Likewise, some races can have up to three classes, depending on how many points they

carry in these abilities. A fighter needs strength, so, as a result, his strength point must be a good one if he is to have longevity in battle. Used wisely, these characters are extremely adaptable, and as the initially-selected group are limited to the abilities of the founding quartet, the multi-class characters can muck in by making use of objects and spells that the others are unable to use.

It was *EOB*'s perfect mixture of traps, objects, puzzles and monsters that made it such a success, and all these aspects have been improved upon for the sequel. Old favourites, such as giant spiders and wolves are represented, whilst new and even more fearsome creatures await the party in the catacombs. Such new fiends as the Basilisk – a leathery eight-legged monster, with a gaze that can turn a target to stone – and the Mind Flayer, which feeds on a character's psyche causing hallucinations and possession. Additionally, rather than keeping the game below ground in the original's dank and dark passages, the sequel takes us into the surrounding forests, too, paving the way for an even wider selection of nasties and acquaintances, including packs of Wolves and a weird old Lady who is searching for her lost child and will offer to help you if you ask her nicely.



Just one look at this simpering duo, and you know they're up to no good. If you want to get anywhere in the game you have to get rid of this sickening couple. A couple of Magic Missiles and a damn good thrashing should see them off.



STEPPING OUT...

The collected party explore in a set pattern of a square formation, with the most glibble pairing at the front.

SPELLING LESSONS

Use of magic is confined to Clerics, Mages and Paladins (who may use a few of the Cleric's spells). Cleric's spells come from scrolls and must be prayed for, whilst Mages must memorise their incantations. A powerful wizard of any sort is a great advantage to a party as they can perform such wonders as a Flame Strike. These call down a column of flame causing up to 40 points of damage, whilst a Fireball is a real hot blast that causes six points of damage for every level of experience a character has.

BEHOLDER 2



Just a few of the many characters that you'll meet inside the dungeons and on the surface. Some give useful information in return for a favour or a service. Although this chap looks like he's in need of a good baby sitter, he's in fact a talented thief.



Although many nomadic characters will rig you off or lead you in the wrong direction, you'll never die from experimentation.



Just out of sight lies the suspicious temple and the real start of the quest. Don't be fooled by the cryptic quizzers.

CREATURE COMFORTS

There are over twenty different monsters to battle during the adventure. Here's a guide of what to expect...
Margoyle - ferocious magical predator which loves to torture their prey.
Salamander - huge flaming creature from the elemental plane of fire.
The Beholders - globular masses of plasma with countless staring eyes. Propelled by levitation they are extremely hard to hit.

CHARACTER ASSASSINATION

Not everyone you come across wants to split your blood. There are characters who can be spoken to and will help you out. It's up to you to determine who's a Robert Maxwell and who's a Mother Teresa. Be warned, though, some are fairly devious and will join your party only to rig you off and scupper when you're asleep.

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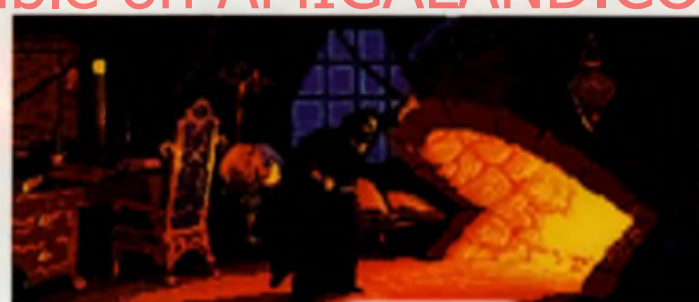
buyers guide	
release date	April 1992
genre	RPG
team	SBI/Westwood Associates III) Stakes (Coding) Nick Parks, Aaron Powell and Ken Glenn (Graphics) and Paul Mudge, Dwight Okuhara (Music and Sound Effects)
controls	Mouse
number of disks	4 Game disks + 1 Party disk
number of players	1
hard disk installable	yes
memory	1Mb

a bit thin on the ground, but with frugal usage there should be enough to see you through to the later, more taxing, sections, where they'll really be needed.

Whenever you think you're likely to get into a scrape, it's wise to have all your weapons at the ready. When battling in some RPGs, there's nothing worse than messing around with dull charts and tables, and one of *Eyes 2's* greatest attributes is that there's no fumbling about with such tables during combat. The solution is also a very simple one: the screen is simply designed to show most of the characters' details simultaneously.

Each character possesses a very handy pouch/pocket, and these are used for the storage of up to three objects. When an item currently held is dropped or discarded, the next item in the pouch automatically shifts into the player's grasp. This feature is especially useful for spell and scroll users as, once a spell has been used, it cannot be reused until the party has rested, effectively leaving the player defenseless. However, by filling the pouch with plus one daggers (a dagger which has been upgraded to cause more damage), the Sorcerers can continue to fight by throwing the knives with a machine-gun-like effect.

Such is the difficulty of the game, all the characters begin at experience level seven, and although a first level spell is pretty weedy in a lesser Mage's hands, its power increases



An impressive and effective intro paves the way for your unseen adventure. Summon the mystic sphinx to the Lords Of Waterdeep, confronts you for the first briefing.

manyfold as your experience increases. In addition, if your other hand is free, you can place another scroll or weapon in it and double your attacks per move.

MAGIC...

Eyes Of The Beholder 2 is a logical, and very enjoyable, follow-up to the first game. It features extremely convincing graphics which are far improved over the first game, and the sound is of equally high quality. There's nothing more chilling than hearing the footsteps of your enemy getting louder as they come towards you - a perfect example of the game's claustrophobic atmosphere. The animation of your attackers is first rate and the detail on the objects is both detailed and clear. At a ground roots level, *Eyes 2* is basically a larger and tweaked update, featuring a larger play area and a new

scenario. However, I still challenge anyone to leave this adventure before they've finished it. *Eyes Of The Beholder 2* is a thoroughly enjoyable and user-friendly game which finally lays that sturdy old horse, *Dungeon Master*, to rest. They don't come much better than this, so ready for the adventure of a lifetime...

US GOLD £25.99

'The best RPG experience in a long time...'

GRAPHICS	90%
SOUND	85%
LASTABILITY	90%
PLAYABILITY	91%

OVERALL 92%

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SPACE ODDYSSEY

Using the same viewpoints and control system as *Heroquest*, Gremlin take us to space in their souped-up sci-fi sequel. Set on a series of alien ships, you and your team are given a limited number of game turns in which to solve the assorted missions.

Although you control a team of five marines, your Commander is the most important and, should he be lost in battle, the mission is deemed a failure and must be restarted. Luckily, however, the all-important Commander is far stronger and carries a more powerful weapon than the grunts – but that's the joys of rank for you.

DICEY DOINGS

On attacking a visible alien, the success of your assault depends on how well you roll the computer-controlled dice. However, the team's weaponry must also be taken into account – for example, a light blaster will give you one throw of a light dice, whereas a heavily-armed Commander has more throws in his favour. The total of the thrown dice is then the strength of your attack, and any number over the armour rating of your target equals the damage caused. It's a very fair system, but the dice are very heavily loaded, with three of the six sides reading zero, and the others as one, two, and three respectively.

During a game turn, your marines are each allocated an action and movement point. The former allows them to attack using whatever means possible, whereas a movement point moves them a specified distance around the map. Everything in the game is controlled via a series of icons, with any currently-available options lit.

Once you have completed your actions, control passes to the next player or the computer-controlled enemy. The enemy also use this system, but with one important difference – The Alien Event. At the start of each turn, something odd will happen – whether it's a soul-sucking alien absorbing one of your marines, or a scan from your mothership revealing new aliens. Easily the most aggravating event, though, is the activation of the auto-defences, which always home in on your Commander.

EXTRA DUTIES

At key points throughout each mission, you may receive a radio message from your mothership, detailing secondary objectives. For example, if your mission is to seek and destroy an alien dreadnought,



This action can be switched between an isometric or a plan view. Although the latter is faster, the 3D view is graphically excellent.

you may also be called to eradicate a lesser being, too.

One improvement over *Heroquest* is that *Space Crusade* is viewed from above on a scrolling map screen. All visible aliens are marked and others appear on the map as they are spotted. Similarly, you can also use a scanner which radiates in every



direction, marking suspect objects as a white star on a green background. The viewpoint can also be switched to isometric 3D, but the game runs faster in map mode.

PLUS POINTS

Space Crusade has two main plus points: its atmosphere and its addictivity. Although a full view of the decks is given, it isn't until you enter a room that you can see what you're dealing with. This generates real claustrophobia, which, coupled with the game's minimal but effective machine noises and alien squeals, is a perfect setting. The game's learning curve is perfect, too, with easy-to-get-into missions which are far from simple to solve.

Space Crusade is a classic strategy game. It's made the biggest impression on me since I saw *Rebel Star Raiders* on the ZX Spectrum eight years ago. Having never played the boardgame, I can't comment on how well it has transferred, but on the Amiga, *Space Crusade* is brilliant. It has enough depth and character to keep you coming back for months to come. In fact, the best commendation I can give *Space Crusade* is that not since *Rebel Star Raiders* has a game impressed me so much.

GREMLIN £25.99

An engrossing and atmospheric masterpiece...

GRAPHICS	86%
SOUND	89%
LASTABILITY	93%
PLAYABILITY	91%

OVERALL 92%



As the Bgano move on their 'Bug Hunt' your objectives are revealed map by map...



buyers guide

release date	May 1992
genre	RPG/Adventure
studio	In-House
company	Mnuse
number of disks	1
number of players	1-4
hard disk installable	No
memory	Any machine

GLOBAL

GOING GLOBAL

The Green movement's bandwagon may have been derailed some time ago, but that hasn't stopped Millennium trying to jump on board with a *Sim City*-style game tinged with environmental sensibilities.

The time is the not-too-distant future, where global development is handled by omnipotent world controllers. Your task is to develop a world's natural resources and build a thriving civilisation. Of course, it's not that simple, and each world's enclosed ecosystem is vulnerable to your industrial advances and the plundering of its mineral wealth and other natural resources. It's up to you to balance the specific economic and environmental concerns of your chosen planet and successfully guide your citizens towards a prosperous future.

The game offers three main options. You can either choose to save a world from an environmental catastrophe, build up a new colony from scratch on a virgin world or become embroiled in a deadly war with a rival controller. Whichever option you plump for, the various sce-

Millennium go green with their latest release, a game that involves both global conquest and green-fingered care of the environment. Dan 'Son of God' Slingsby does his best to nurture a nuclear winter...

narios ensure that you'll have your work cut out to stay in power. Not only will you have to contend with natural phenomena, like earthquakes and volcanic activity, but on some worlds there's also computer-controlled adversaries who couldn't give two hoots about either yours or the planet's good health.

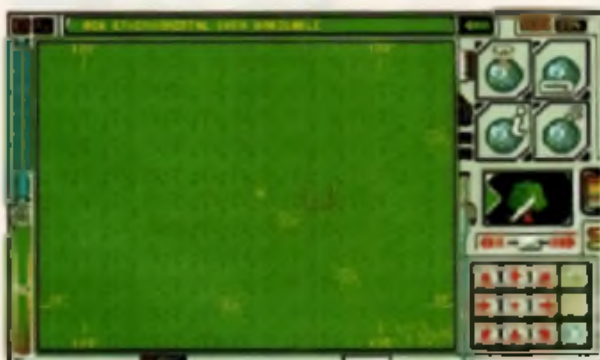
SAVE THE WORLD

The save a world option involves four scenarios. The first of these is set amid a nuclear winter where large parts of the planet are uninhabitable, the polar ice-caps are expanding towards the equator, and few people have survived. Your task is to reverse the ecological damage and

help civilisation to thrive once more. Whether this would be possible after a real nuclear conflagration is extremely debatable, but as this is a game we'll let them get away with it. Other scenarios offer a post-industrial society poisoned by its own pollutants, a world in the grip of global warming, and another exhausted of all its natural resources. In the first of these, a new world order has to be established based around clean, green, energy-efficient policies while the other two require speedy action to reverse the global rise in temperature and to maintain the existing civilisation at an optimum level to ensure their long-term survival.

If you're more concerned for your own good fortune than that of your people, the 'rule a world' option will be more to your liking. Here, you have the option to become involved in an industrial confrontation with another controller where rampant industrialisation and expansion by your rival needs to be contained and reversed, or there's the much more appealing arms-race scenario which sees both sides stockpiling nuclear arsenals for an eventual military engagement. Unfortunately, much of this option's appeal is muted as the environmental concerns have to be taken into consideration. By launching a first strike you may well catch your opponent off-guard and thus win the battle, but the war with the environment will be well and truly lost.

The final option allows the controller to develop a number of virgin worlds. It's possible to start from scratch on a fully customisable planet or choose from a number of scenarios. There are eight of these, each throwing up individual environmental problems, ranging from volcanic activity and frozen worlds to mineral and fossil rich planets.

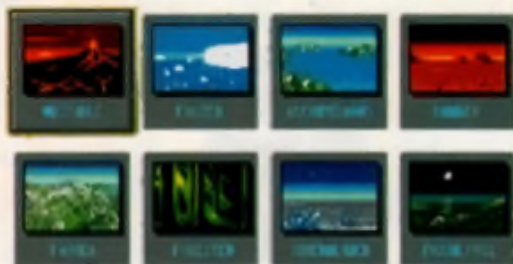


Only limited information is available about the environment and if I can't see, plenty of a worthwhile investment, however as it acts as a guide of how your industrial development is affecting the planet.



Above left: Your challenge begins. From the leafy surrounds of a natural forest, you have to slowly build up a thriving community. Solar panels and small farms will soon be replaced with oil rigs, oil storage depots, coal mines and bustling cities.

Left: A rudimentary military complex begins to take shape. First you'll need to establish an HQ from which to command your troops. Once that's established you can then concentrate on building up a formidable arsenal. Unfortunately this is exactly what the enemy is busy doing too!



There are eight original scenario rigs for development, each with its own pros and cons. If you're not happy with any of them, you can always customise your own planet and start building your own little empire.

EFFECT



GUIDE TO MAIN SCREEN

1 The power gauge works as a credit rating and limits development. Construction can only take place if there is sufficient energy available.

2 The economic and environmental status monitor how well your economy is performing and the degree to which your actions are affecting the planet. If both are okay, you'll gain more power.

3 This bank of icons allow you to save or pause a game, get strategic information or begin a military build-up.

4 The icon bank offers 30 different construction tools. Once selected, the current tool can be placed onto the main screen by simply placing the mouse cursor on screen and clicking the mouse button.

5 The compass is one way of moving about the map. Another is to drag the mouse off each side of the screen, whereas it will scroll accordingly.

6 Occasional messages appear at the top of the screen, informing the player how well they are doing and of other major game-related events, such as earthquakes or volcanic eruptions.

GAME ON

The main game screen consists of a window display which offers a bird's-eye view of a (tiny section of the planet's) surface. To the left of this is an icon selector which contains the named construction tools necessary for global management. Unfortunately, only the currently-selected icon is displayed at any one time and it's necessary to scroll through the numerous tools to find a particular item. A much better option would have been a *Sim City*-style icon panel but, instead, *Global Effect* uses every tedious display which becomes a distinct irritant the more you play the game. To



A seismic survey can reveal hidden fossil fuels and other such goodies.

be fair, it's possible to program the function keys to take on the different icon characteristics, but it's still a cumbersome system.

To the left of the display area are two information meters which detail your economic/environmental rating as well as your power level. Any movement or construction requires power which, in turn, is generated by your economic performance and how well you're managing the environment. To move around the map, there's a compass to the bottom right of the screen and it's also possible to move the mouse cursor off the main screen to dictate movement. Once you've started to build something, messages at the top of the screen inform the player how well they're doing. For example, 'very good drainage', 'commandable farming coverage' and 'well organised recycling network' are common encouragements. Equally common,

(though, are messages stating 'your city is in need of repair' or that 'your citizens are dying'.

TOOLING UP

Global Effect certainly looks the business. The icons used for the different tools are all fairly straightforward and there's no real need to consult the lengthy manual to discover their function. Keep an eye out for the icon which denotes the sewage treatment works - I think I could have come up

GUNG-HO GAIA

Global Effect is more of a game than the open-ended *Sim Earth*. There are set objectives for each scenario and most tasks have to be completed within a certain time. One of the more interesting options is the chance to wage global war against a computer opponent. This involves establishing an operations centre (HQ) before commissioning air and sea bases as well as early warning systems, missile sites and anti-missile batteries. *Global Effect* even destroy an area consisting of five blocks (out of a total area of more than 60,000 such blocks), and causes minor pollution and contamination. A nuclear explosion causes widespread contamination of a large area. If more than 30% contamination results from a nuclear conflict, no further actions can be taken until the pollution and contamination is cleared. The most public scenario is a nuclear winter which is effectively 'Game Over'.



with something better than a beaker of water and a big brown pile of excrement! Sound-wise, there's not a lot to say, except that I'd have preferred a master selection of sound effects and decent atmospheric music.

City construction isn't as detailed as *Sim City*. The game is more concerned with effects rather than detail. There's no need for hospitals or police stations as the action takes place primarily on a global scale. City blocks are just that - tiny squares which can be linked together on screen to form an expanding metropolis. Other tools include farming units, water reservoirs, recycling plants (naturally), solar generators and sewage treatment plants. Once you've got your basic city unit up and running, it's then time to consider adopting coal-driven power stations or the much cleaner option of nuclear power. Once your city has expanded

buyers guide

release date:	May 1992
genre:	God-sim
team:	Teby Simpson
controls:	mouse
numbers of disks:	1
numbers of players:	1/2
hard and available:	yes
memory:	1 Meg

GLOBAL EFFECT

to a certain limit, environmentally-friendly sources of power, such as wind or solar generators, become inadequate and economic forces dictate the development of more 'advanced' energy sources. This is when problems start to arise and it's a complex balancing act to keep both the environment and your economy in equilibrium.

This might sound an incredibly dull idea for a game and, admittedly, there are times when things become rather routine. It can take a long time to build up a city-state and even longer before your actions begin to have an effect on the environment. Initially, the most exciting things to happen are breakdowns in the sewage disposal system or an outbreak of dysentery, but things do start to improve the more you get into the game. There's a sense of achievement in slowly building up an embryonic city and an even better feeling once you've built up an atomic arsenal and launched an all-out nuclear war!

ORIGIN OF THE SPECIES

Despite the game's many good points, such as the well-thought out scenarios and myriad number of options, I couldn't help feeling that something was missing. That something happens to be one of the most important ingredients that goes into successful game originality.

There's nothing new here except an over-zealous environmental consciousness which casts its shadow over the entire game in a rather crude and intrusive manner. It's obvious to see where much of the inspiration has come from: *Sim City* is the chief point of reference, but Bullfrog's *Populous*, Gremlin's *Utopia* and Maxie's *Sim Earth* have all been plundered for ideas. If you're going to borrow ideas quite so liberally as *Global Effect* has, then the final game has to be as good as, if not better, than the original products. Sadly, this is not the case, and I'm left bitterly disappointed with what could have been an excellent god-sim but, in reality, is more like a Green Party broadcast.

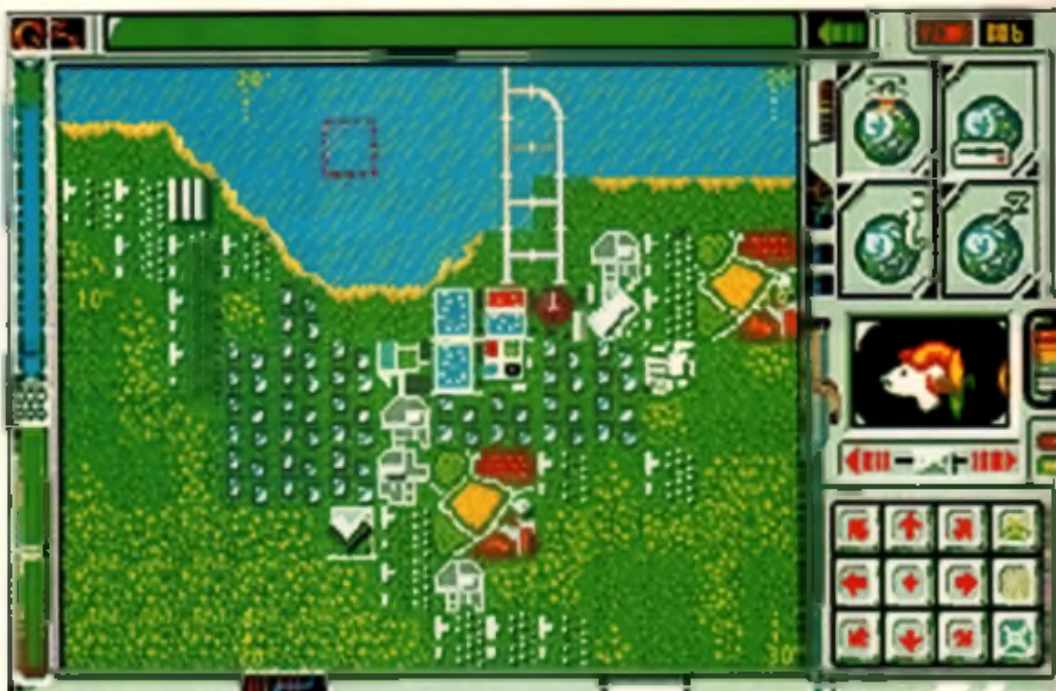
That's not to say there isn't any fun to be had in creating your own environment and carefully nurturing it. It's just that I can think of many better games to spend my money.

Millennium £29.99

Playable God-sim which lacks originality...

GRAPHICS	80%
SOUND	69%
LASTABILITY	75%
PLAYABILITY	72%

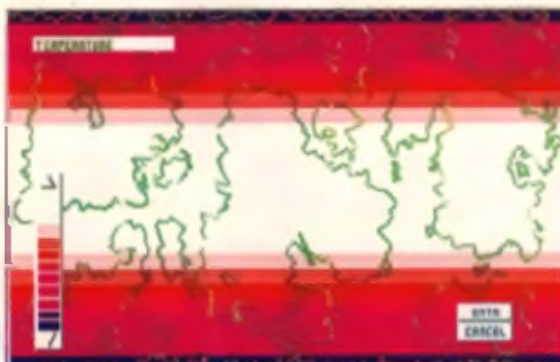
OVERALL 74%



Here's an ideal city in the making. The sewage pipes have been constructed to take their effluent out to sea, firms have been set up to feed the populace and a sensible solar power programme put into operation. The coastal location and nearby forest help create an idyllic serene environment and the city looks set to generate fish, just for fun, city not ruin it all and connect the sewage pipes to the water supply and inflict deadly diseases upon your subjects.



These resources icons show you to build anything from sewage and recycling plants to nuclear power stations. It's best to start off with solar or wind generators to power your city, as these cost considerably less than more conventional forms of energy. Coal mines are very expensive and a extremely environmentally-unfriendly source of power, and the chances of finding oil are fairly rare.



Global maps offer a wealth of environmental information ranging from temperature charts, Ozone coverage, pollution and volcanic activity. Each chart absorbs substantial amounts of power, though, so it's best to use such screens sparingly. In the early stages they play little part, but become increasingly important as the game progresses.



An enemy city begins to take shape. Small city blocks, a rudimentary sewage system and a water supply have all been built, but the solar generators are proving inadequate to power all the houses common sense-suitable happen. The growth of the settlement is also limited because of the natural barrier of the forest.

SERIAL KILLERS By connecting another machine to your Amiga via a null modem cable, it's possible to have a head-to-head confrontation against another player. It doesn't matter whether the second machine is a Macintosh, PC or an ST - *Global Effects* can be linked up to all of them and then you and a friend can wreck industrial suicide on some poor unsuspecting planet. There's also an option to play the game via a modem, but due to the vast amounts of data transfer involved, Millennium advises against using this option. Better yet is the computer opponent. There are various parameters that can be set, such as the computer's economic ambition, its speed, and its military intentions. Initially, it's best to use a low setting, or else you'll soon find yourself out-manoeuvred both economically and strategically.

THE CONSOLES AND ARCADES SMASH HIT NOW ON YOUR COMPUTERS!

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94%



CU AMIGA:
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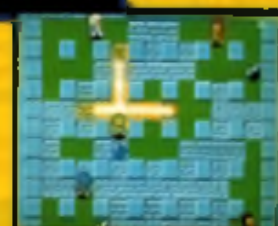
Collect the icons to get more bombs and larger or programmed explosions.

Screen shots on Amiga

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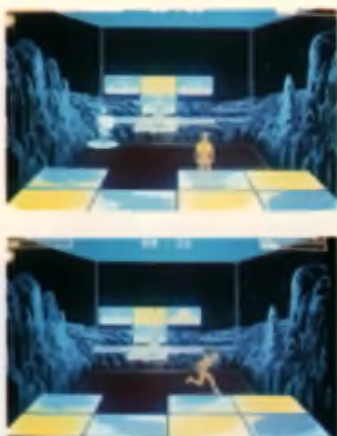
Don't smash the icons or you'll be in big trouble!



In the 5 player-mode your opponents are both your allies and your enemies... depends on the situation!

DISC

Tron's disk-tobbing sequence spawned a series of coin-ops, but it took Loricola eight years to get it on to the Amiga. Consequently, the gameplay and presentation now look a little old hat. Staged at either end of a rectangular arena, the two players are given a frisbee-like object which must be thrown at their opponent. Directly behind each contestant, there are a series of blocks, which correspond to the tiles the duo are standing on, and whenever a section of the wall is hit, it disappears taking the relevant floor square with it. In addition, both players are given a limited supply of energy, and if the lack of floorspace doesn't



get them, then constant but-felling with the disc will. Hardly taxing stuff, *Disc* is a nice-looking game, but was a poor full-price release, and still doesn't warrant a buy for slight quid.

ACTION 14 OUT NOW £7.99

61%

NAVY MOVES

For years, Spanish team, Dynamic, were famed for releasing unplayable games under the 'Moves' monicker. There were loads available: *Army Moves*, *Army Moves II*, and this, *Navy Moves* – luckily, by *Navy*, the games were actually starting to come together. Cast as a heroic aquanaut hero, *Navy Moves* is a shoot 'em up played over a series of scrolling stages, before moving into a large military complex for the second, arcade/adventure stage. As can be expected, there's aquatic enemies of all manner of Squid and sub-aquatic nasties at our flipper-wearing hero, and these must be shot or avoided. A frugal content of creatures makes this increasingly difficult, though. And that's all there is to it, really. The base section is marginally better than the first half and features a large and detailed play area to explore, but getting to it is hampered by the dodgy collision detection the scrolling detection suffers from. It seems that Dynamic's original intention was to create a game similar in content to a Milk Tray advert, but too annoying factors work against it. *Navy Moves* is by no means complete trash, and does have something quite addictive about it, but even though it's less than a third of its original price, it's still a dubious buy.

HIT SQUAD OUT NOW £7.99

43%

THE BITMAP BROTHERS

Although they've come in for some severe knocking recently, there's no doubting that the Bitmaps are still in a class of their own. Since their less-than-humble beginnings with *Xenon*, the Bitmaps have redefined the shoot 'em up and futuresport genres with *Xenon II* and *Speedball II* respectively. This compilation is made up of

compilation of
THE MONTH

the aforementioned *Speedball II*, the arcade/adventure, *Cadaver*, and the original *Xenon* – and whilst the latter is the weakest of the three, it still makes most recently-released blasters look tame.

Speedball II should need no introduction, and is quite simply the pinnacle of futuresports. Played across a three-screen-long metallic pitch, the basic aim is to rumble the ball past your opponents' goals – using violence whenever necessary. With all manner of bonuses and tactics also available, *Speedball II* is a genuine classic and ultra-addictive. Equally playable, is *Cadaver*, the Bitmaps' first foray into the arcade/adventure genre.

Set within a stunning isometric landscape, *Cadaver's* puzzles outweigh even its graphics – and that's saying something. *Xenon* was the first Bitmap game, and is still playable. The first 16-bit arcade-quality blast, *Xenon* is a little too hard for its own good, but is still a worthwhile play.

A stunning collection of some of the Bitmaps' finest games – and if you're new to the Amiga scene, this is the perfect introduction to gaming.

BINIGADE OUT NOW £25.99

95%



Steve Merrett, CU's resident skin flint, peruses the wide range of budget games set for release this month, and offers his verdict on the best buys...

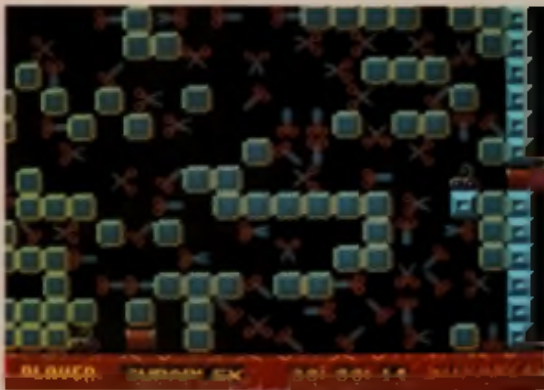


SUPAPLEX

game of
THE MONTH

This is a rather surprise budget release, but certainly a welcome one. *Supaplex* was

originally released a mere five months ago, but for some reason didn't sell. Perhaps the prime reason for this is its primitive look, with a main sprite which doubles as a Tomato, and background sprites which resemble crude user-defined characters. Even so, these dull aesthetics barely mask *Supaplex*'s brilliant playability. Basically, it's a variant on the time-honoured classic, *Boulderdash*, with the original's



cluster of gem-filled caves, replaced by *Supaplex*'s 111 circuit boards awaiting excavation. Your little Tomato has been given a set time within which to collect a predetermined number of each board's Infotrons, whilst avoiding any rockfalls (sorry, Zankies!) or chain-reactions your actions may



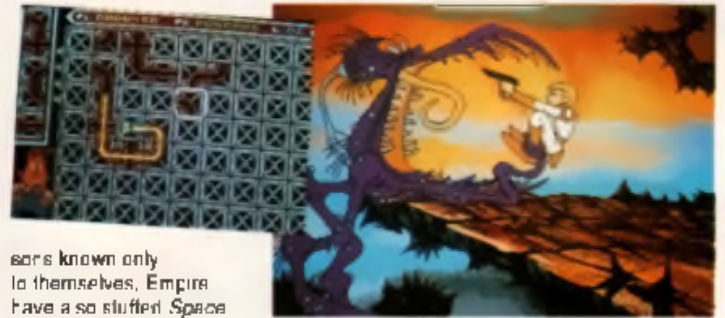
set off. In addition, an assortment of nasties - such as scissars - inhabit the caves, and will pursue him if freed from their confines. The game's superb puzzle element is strengthened, when the only way to collect sufficient Infotrons is to drop the rock-like Zankie on to a particular species of creature to create the necessary goodies, and this leads to some extremely taxing situations. Original it ain't, but playable and worthy of a buy, *Supaplex* certainly is. And when you consider what a travesty Databyte's Amiga *Boulderdash* turned out to be, Action 16's rerelease becomes all the more welcome. Go on, invest eight quid - you won't regret it.

ACTION 16 OUT NOW £7.99

86%

AWARD WINNERS

Getting off to the best possible start with Anco's *Kick Off It*, *Award Winners* is well supported by the likes of *Populous* and *Popemania*. All three are excellent and diverse enough to make the compilation a worthwhile buy, from the arcade perfection of Anco's legendary loopy sim and Empire's *Pipemania*, to the devious *Devils of Populous*. What doesn't make sense, though, is that, for rea-



sors known only to themselves, Empire have a so stuffed *Space Ace* into the pack.

Thankfully, this hasn't inflated the pack's price, but I can't help but think that the space could have been better served. Oh well, even if you only play *Ace* once, you're still getting an excel-

lent deal, and you'll be playing *Kick Off It* and *Populous* for years to come. However, perhaps it's time for a forty-quid Readysoft compilation, with their work in cake huddled together...

EMPIRE OUT NOW £34.99

89%

BEYOND THE ICE PALACE

Software for less than three quid? Blimey! First originally released *Ice Palace* as an unofficial sequel to *Ghosts n Goblins*, but it never really hit the same mark. The similarities are fairly obvious, with all manner of ghoulish goings-on to avoid and spooks to kill, set upon a series of platforms. Every now and then, though, a spookier Boss creature comes along to sap your energy unless you can kill it first - get the picture? Hardly original stuff, is it? Aside from the price tag, there's not a lot going in *Ice Palace*'s favour. It looks and plays like an 8-bit game, and has all the lasting appeal of a bag of chips, but I suppose for three quid it isn't bad.

POCKET POWER OUT NOW £2.99

28%

ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS

Winner of 'The Longest Game Title Ever', *Robot Monsters* is a spool of countless space-based B-Movies, and pits two heroic fighters against a mass of manic robots. Played across a series of isometric zones, the game is basically a shoot 'em up, as the two laser-toting heroes blast their way through the scrolling areas, in search of an exit. Along the way, they run the risk of getting impaled, electrocuted, and shot, all of which are depicted in brilliant cartoon style. Although it gets a

little samey in places, has stood the test of time very well. And is most certainly worth its modest asking price.



THE HIT SQUAD OUT NOW £7.99

80%

Hi Quality Version Available on AMIGALAND.COM



PHOENIX

RAM expansions made for the older A500 will not work with the new A500 Plus if they are populated to more than 512k. Phoenix have developed a range of RAM expansion units specifically for the new A500 Plus.

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EXPAND

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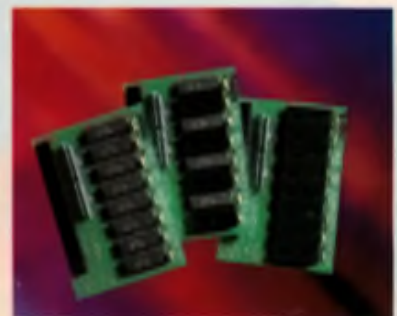
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TRADE ENQUIRIES WELCOME



Hi Quality Version Available on AMIGA-LEADS.COM

HELPLINE

If you're stuck on a game and don't know who to turn to for advice, then look no further. The original and best Helpline is back with yet another massive selection of game queries and desperate cries for help.

ENQUIRIES

NEW ZEALAND STORY

Level four is impossible and we defy anyone to get past the whale. We can dodge whatever it is he drops, but don't know how to defeat him. Help please!

Helen Paise, Amy Nicholson, W1

LEMMINGS

It's a great game but I can't get past level 19. Can anyone guide me through this extremely tricky level?

Barry Ambrose, W2

LEANDER

We don't want a cheat for this game, just some useful advice. We're stuck on level 14. Although we have retrieved the crossbow at the bottom of the cave, we can't get on and are trapped down there. Any help please?

Marc and Gavin Pratt, W3

KULT

How can I save a game? I get the OK message after trying, but when I try to load a saved game it always fails. I've followed all the instructions, but to no avail.

Adrian Bernasconi, W4

DEUTEROS

I cannot get any further with this game. I have built eight space stations, have seven fighters (drone fleet control computers) all of which are armed with 200 drones, and have won countless battles. The problem seems to be that I am unable to advance any further in the game. For example, I cannot build any more space stations, and my scientists have not invented any more powerful weapons or space ships.

Adrian Bernasconi, W5

HERO QUEST

It's a good game, but a little frustrating. Is there a cheat for infinite lives or money up to £5,000 for each of the four players? How about infinite spells for the Wizard and the Elf characters?

Matthew Farrow, W6



HOW TO USE HELPLINE

It's easy. Just send in your letters, marking your envelope with the appropriate code number if you are sending a response or mark it 'Enquiry' if you need some help. Post your letters to: HELPLINE, CU AMIGA, PRIORITY COURT, 30-32 FARRINGDON LANE, LONDON, EC1R 3AU.

ALIEN BREED

Is there an infinite lives cheat for Team 17's brilliant shoot 'em up? I know the level skip cheat, but it's a skill too hard.

James Kinghorn, W7



FIRST SAMURAI

This is just too difficult. Don't get me wrong, it's an extremely polished game, but the second level has me well and truly stuck. I can collect all the special objects on the second level, but I don't know what to do next or where to go?

James Kinghorn, W8

MANIAC MANSION

Let's have a hint or tip for this aging classic, please? I've been doing really well until I get to the Man-Eating Plant Room. I've watered the plant and thrown the paint thinner against the wall to reveal the door but I need to get through the trapdoor above the planet to get into the Telescope Room and I cannot find a ladder anywhere!

Kathy Anderson, W9

CRUISE FOR A CORPSE

I'm no John Thaw, and I'm completely stumped with this game. I've spoken to the Meme and found the piece of paper with the message, but I can't get any further.

Allaire Round, W10

WINGS OF FURY

It's kind of embarrassing. You see, I can't get past the first screen of this game. Please help me!

Duncan Hughes, W11

MAGIC POCKETS

I've noticed this game crop up in Helpline on quite a few occasions. Now I know why - it's really difficult. The game is a double up to level three, but

after that I can't get past the Frogs with the extra long tongues or the stone-throwing Zombies. Any hints and tips would be greatly received.

Mr A Coulson, W12

LEISURE SUIT LARRY 5

I'm a member of Mersa and have an IQ in the stratosphere, but when it comes to Sierra's latest Larry game I bow my head in shame. I can't get a ticket, get into the V/P lounge at the airport, or into the boss's office. I've collected everything possible, but I can't find a brochure for the ticket machine.

B. Anderson, W13

SMASH TV

Ok, so it's not a patch on the arcade version, but it's still a cracking game. Things do tend to get a bit hectic, though, and a cheat for infinite lives/energy/credits would not go amiss. After all, plenty of them prices.

Adam Turner, W14

4D SPORTS BOXING

I've steadily built up my Boxer's stats, but still can't seem to make any progress. Even when I let the computer do my fighting for me, I still take a pummeling. A cheat for increasing my stats still further would be most excellent.

Robert Bryant, W15

INDY HEAT

Money's too tight to mention in this Storm conversion of the brilliant coin op. Indeed, I never seem to have enough of the old moolah, so is there a cheat for generating fat wads of cash? A fuel or turbo cheat would be handy, too.

Simon Wilson, W16



NEW IMPROVED HELPLINE

That's right, from next issue Helpline is going to be bigger and better than ever before. Not only that, but everyone who sends in a game hint or cheat will receive a FREE game from a top software company. Keep sending the only reader hints and tips service worth bothering with!

JUMP AT IT!

PARASOL STARS

RAINBOW ISLANDS 2

"Both graphically and sonically this is a highly impressive product... well worth buying"
GAMES X 19/20 GAME OF THE WEEK

"Sheer brilliance, and no mistake... an easy contender for Game of The Year"
CU AMIGA 95% SUPERSTAR



"The playability is what sets it apart... teasingly addictive and unthrottling, PARASOL STARS deserves all the praise it gets. Place an order now!"
ST ACTION 92%

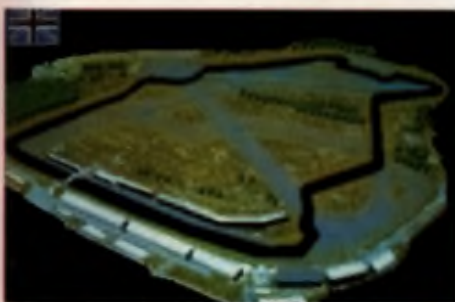
COMMODORE 64
ATARI ST
CBM
AMIGA

ocean

TAITO

small tips

If it's top tips for the top games you're after, CU Amiga is here with all the latest hints and cheats.



FORMULA ONE GRAND PRIX

If you can't get pole position in Microprose's Formula One racer, here's a cheat to turn your motoring fortunes around. Go to the pits, escape from the game and go to accelerate time. You should now finish the Grand Prix in Pole Position.



TITUS THE FOX

Down a foxhole without a clue in Titus' latest platform romp? Help is at hand as here are the levels codes for all 16 levels:

Level	Code	Level	Code
1	2626	9	6390
2	8455	10	8612
3	2974	11	4187
4	4916	12	1350
5	1933	13	9813
6	0738	14	5052
7	2237	15	3360
8	5648	16	2045



POPULOUS II

If you're having troubling battling Zeus and his cronies in Bullfrog's excellent God game, here's a cheat for maximum strength for everything. Type in: **ADK1AR0VGZL-RGWZ** (no spaces) at the password prompt at the beginning of each level and you'll be able to slug it out with the best of them. Thanks to Adam Chapman, who hails from Middleburgh, for that one.



HARLEQUIN

Grem's multi-level platformer has rather a lot of nasty surprises waiting for the inexperienced gamer. Here's a mini-hints n'tips guide to help you on your way.

* Using the Space Hopper on water will allow you to skim across the surface without drowning.

* Watch out for hidden bonuses located at the following locations:

The first Tower's clock face

The clown's noses in the Learning Curve

The taps in the Sewerside

The trees and flowers in Cutesy Land

The pipe openings in the Organ Chamber

The ace of Hearts playing cards in the House of Cards

* Don't stay in the straws level too long. When the timer runs out, the credit tokens disappear and aren't regenerated. However, if you grab as many as you can and leave before the timer reaches zero, when you reenter the level, all the credit tokens should be back again. By doing this two or three times you will gain an extra life.

* When falling long distances, use the brotly power just before you hit the ground. It may only save you a small amount of energy but every little bit counts.

* Hidden pieces are located in the Rooftops, Hell, Cutesy Land and Sheet Muzak.

* Most levels change in some way during the game so always be sure there isn't an exit you've missed when you pass through a level which you have visited before.

* Save your game frequently as it will take a long time to complete (roughly two and a half hours if you take the shortest route).

* Any levels which have water are bound to have a Fish power token nearby so don't venture near it without one.

* Something strange might happen should you hit the right notes in the Organ Chamber.



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READERS SURVEY 1992



That's right. It's that time of the year again when we ask you, our valued readers, to pick up your pens and let us know your thoughts and opinions on Britain's fastest-growing magazine, CU Amiga.

It's been a hectic year of change and development for CU Amiga and now it's your turn to tell us what we're doing right and what we're doing wrong.

You might think that questionnaires are a waste of time and that no-one's going to be interested in what you have to say. Well, you're wrong! Each questionnaire we receive is carefully scrutinised and each comment has a direct bearing on the future development of the magazine. This isn't a space filler - it's your chance to dictate the development of the mag over the coming 12 months.

For example, you might think we don't have enough game reviews or that we don't cover the enthusiast market very well. If that's the case, vent your spleen and tell us about it. The dramatic changes CU has undergone in the last year were a direct result of our last survey, so we really do listen to what you have to say.

And as an added incentive, we're also giving away more than £2,000-worth of top-rated software in a special prize draw. The sender of the first survey out of the bag will win £500-worth of software of their choice, with the next 15 runners-up receiving £100-worth of top-quality utilities and games for their Amiga. If you want to get something off your chest, now's your chance...



HOW TO ENTER

Please try and answer every question. If your stuck for an answer to any particular question, simply miss it out and go on to the next one. Most questions simply require a tick in a box, but some require more extensive answers - please try and complete as much of the questionnaire as possible. You can either tear out this form and send it in, or a photocopy is just as acceptable. You can also write out your answers on the back of a matchbox if you want, we're not picky! Once you've filled everything in, send it to: CU AMIGA SURVEY 1992, EMAP IMAGES, PRIORITY COURT, 30-32 FARRINGTON LANE, FARRINGTON, LONDON, EC1A 3AU. Entries to arrive not later than June 1st, 1992 (Although the compo stays open for our overseas readers until 1st September, 1992, as we appreciate that some of you get your copies some time after the mag has gone on sale in the UK).

IMPORTANT: Where appropriate, please tick the relevant boxes to indicate your answer. All information given in this questionnaire will be treated in the strictest confidence and individual details will not be given/hold to any other organisation.

1. About You

Name:

Address:

Age:
Sex: Male Female

2. What do you do for a living?

- At school
- Further Education
- Univeristy/Poly
- Full-time work
- Part-time work
- Unemployed

3. What's your income per year?

- £2,000 or less
- £2,001-£6,000
- £6,001-£10,000
- £10,001-£15,000
- £15,001-£20,000
- £20,001-£25,000
- £25,001-£30,000
- £30,001 plus

CUT ALONG LINE

4. What do you use your Amiga for? (Tick more than one box if necessary)

	Regularly	Sometimes	Never
Music	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DTP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Word Processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. What type of Amiga do you own?

- A500 (512k)
- A500 (1Mb)
- A500 Plus
- A1000
- A1500
- A2000
- A3000
- Amiga CDTV

Other.....

6. In the next 12 months, are you interested in purchasing any of the following machines:

- Amiga 600
- Amiga 4000
- Amiga 570 (CD Rom drive)

7. Do you own a memory expansion for your machine?

- Yes No

8. We're thinking about making our coverdisks 1Mb only. Do you think this is a good idea?

- Yes No

9. Which of the following peripherals do you own?

	Own	Intend to buy this year
Monitor	<input type="checkbox"/>	<input type="checkbox"/>
Disk Drive	<input type="checkbox"/>	<input type="checkbox"/>
Hard Disk	<input type="checkbox"/>	<input type="checkbox"/>
Printer	<input type="checkbox"/>	<input type="checkbox"/>
Action Replay	<input type="checkbox"/>	<input type="checkbox"/>
Genlock	<input type="checkbox"/>	<input type="checkbox"/>
Sound sampler	<input type="checkbox"/>	<input type="checkbox"/>
Modem	<input type="checkbox"/>	<input type="checkbox"/>
MIDI interface	<input type="checkbox"/>	<input type="checkbox"/>
Scanner	<input type="checkbox"/>	<input type="checkbox"/>
Digitiser	<input type="checkbox"/>	<input type="checkbox"/>
PC Emulator	<input type="checkbox"/>	<input type="checkbox"/>
Accelerator Card	<input type="checkbox"/>	<input type="checkbox"/>
24-Bit Graphic Card	<input type="checkbox"/>	<input type="checkbox"/>

10. How much time per week do you spend using your Amiga?

- less than 2 hours per week
- 2-5 hours per week
- 6-10 hours per week

- 11-15 hours per week
- 16-20 hours per week
- Over 20 hours per week

11. How much money do you spend on your Amiga per month?

- Less than £20
- Between £20-£30
- £31-£40
- £41-£60
- £61-£100
- More than £100

12. What percentage of your answer to question 11 is spent on games software?

- 25%
- 50%
- 75%
- 100%

13. What other computer magazines do you regularly buy?

- Amiga Action
- Amiga Format
- Amiga Shopper
- Amiga Power
- Amiga Computing
- Amiga World
- AUI
- C&VG
- The One

14. How important is the content of a magazine's coverdisk in influencing you to buy the mag?

- Not important
- Occasionally influences me
- Major influence

15. Where did you buy this copy of CU Amiga from?

- Local Newsagent
- Subscription
- Chain Store
- Computer Store

16. How many other people will read this copy of CU Amiga?

- 0
- 1
- 2
- 3
- 4
- 5

17. If there's one thing you could change about CU Amiga to make it better, what would it be? (Please use a separate sheet of paper if there isn't enough space for your answer)

.....

.....

.....

Hi Quality Version Available on AMIGALAND.COM

18. How many copies of CU Amiga have you bought in the last year?

- 1-3
- 4-6
- 7-9
- 10-12

19. How do you rate the following sections in this month's issue?

	Very Good	Fair	Poor
News	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverdisk pages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead Feature (The Ultimate Amiga)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
First Imps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Game Reviews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small Tips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical Reviews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buyer's Guide: Printers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PD coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buyer's Guide: Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buyer's Guide: Joysticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backchat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Step-by-Step	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buyers Guide: HD Games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q&A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Music column	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comms column	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inside Information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education column	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Points of View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. Have we the right balance between our technical and games coverage?

- Yes No

21. If you answered 'No' to question 19, how should we change our coverage?

- More technical coverage
- More games coverage

22. Does CU Amiga give you enough information to make a purchasing decision?

- Yes
- No

(If 'No', what could be done to improve our reviews?)

.....

.....

.....

.....

23. Do you buy Public Domain software?

- Never
- Occasionally
- Regularly

24. Which sort of PD are you most interested in? (Tick more than one if necessary)

- Demos
- Music
- Slideshows
- Games
- Animations
- Utilities
- Virus Checkers

25. From the following list, please indicate how you rate CU Amiga's design (Tick as many as you like):

	Yes	No
Attractive	<input type="checkbox"/>	<input type="checkbox"/>
Gives enough info	<input type="checkbox"/>	<input type="checkbox"/>
Easy to read	<input type="checkbox"/>	<input type="checkbox"/>
Too serious	<input type="checkbox"/>	<input type="checkbox"/>
Not serious enough	<input type="checkbox"/>	<input type="checkbox"/>
Just about right	<input type="checkbox"/>	<input type="checkbox"/>

26. The price of the CD ROM drive is expected to be £299. Would you buy one at this price?

- Definitely
- Possibly
- Only if it's cheaper
- No

27. Which of the following Buyer's Guides would you like to see appear in the magazine over the next 6 months?

Hard Drives	<input type="checkbox"/>	Accelerator Cards	<input type="checkbox"/>
Modems	<input type="checkbox"/>	Animation packages	<input type="checkbox"/>
Memory Expansions	<input type="checkbox"/>	Emulators	<input type="checkbox"/>
Digitisers	<input type="checkbox"/>	24-bit graphics	<input type="checkbox"/>
Word Processors	<input type="checkbox"/>	Public Domain	<input type="checkbox"/>
Business software	<input type="checkbox"/>	Mice/Trackballs	<input type="checkbox"/>
Printers	<input type="checkbox"/>	Games	<input type="checkbox"/>
Cam-corders	<input type="checkbox"/>	DTP	<input type="checkbox"/>
Genlocks	<input type="checkbox"/>	Programming Languages	<input type="checkbox"/>
Databases	<input type="checkbox"/>	Education	<input type="checkbox"/>

28. Would you buy CU Amiga produced merchandise, including videos, book guides, binders, games and utilities?

	Yes	Yes
Videos	<input type="checkbox"/>	Disk-boxes <input type="checkbox"/>
Books	<input type="checkbox"/>	Mouse mats <input type="checkbox"/>
Binders	<input type="checkbox"/>	T-shirts <input type="checkbox"/>
Games	<input type="checkbox"/>	Jumpsuits <input type="checkbox"/>
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Phew! That's the lot. Thanks for taking the time to complete this questionnaire. Only with your help can we make CU Amiga even better.

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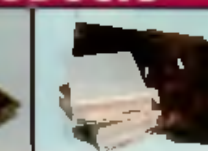
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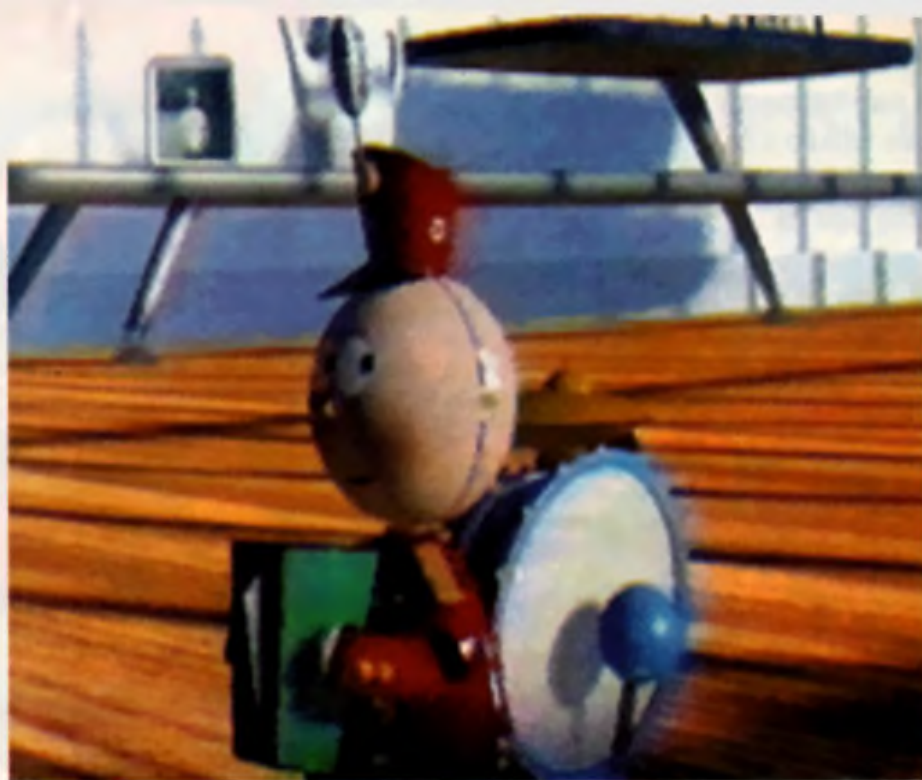
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Despite the power of the rendering system, John Lasseter's team resorted to using texture mapping to create highlights in the Tin Toy animation.



At last, a ray-tracing package that does more than just draw pretty pictures! Mat Broomfield checks out Ray Dance's latest advances in our exclusive review.

Hi Version 1.00 let's dance

ENTER THE ARENA

Today's ray-tracing arena is a lively place, populated by the likes of *Real 3D*, *Imagine* and *Sculpt 4D*, all of which can create life-like 3D scenes, complete with animated objects and roving cameras. Exciting enhancements, such as texture and bump-mapping, appear with every new release, and *Ray Dance* is no exception. However, to achieve these new features, Charles Constock, the program's creator, has gone right back to basics. Has he created a thoroughbred, or a graphical equivalent to Frankenstein's monster?

THE DANCE BEGINS

Ray Dance is a budget-priced ray-tracing package which supports surface mapping, animation, 24-bit colour and a plethora of other 'standard' options. However, there are several features which set it apart from other packages, including Automatic

Plant Generation (the herbaceous kind!), fractal support, and a low memory replicate option.

Its greatest point of departure from the ray-tracing norm, though, is that it's script-driven, forsaking the user-friendly, mouse-controlled systems used by every package today. Although superficially the system sacrifices ease-of-use, at a deeper level it actually increases the user's control over the finished output. An object is defined using numbers and Keywords representing vertices, planes, and interconnections. It's then manipulated via a text file created on any standard text editor. This text file is also used to define the scene in which your object (or objects) reside, and the way the scene will be viewed (camera position, lighting, etc).

OBJECTS OF DESIRE

It's in the area of object definition that *Ray Dance* demonstrates its advantages. Because all objects are defined mathematically, far greater precision can be achieved. For example, it's easy to define a cube in *Sculpt* or *Imagine*, because it has eight easily-positioned vertices, the positions of which can be calculated relatively easily. But try and draw a pentagonal dodecahedron (a solid with twelve pentagonal faces), and you'll soon run into problems!

With *Ray Dance*, providing you know the requisite mathe-

matical formula, the program will calculate the real for you. This is especially useful when drawing curved objects which need to include a completely accurate degree of curvature (the supports of a suspension bridge, for instance). Consequently, this precision makes *Ray Dance* an ideal tool for professional and scientific users, as well as serious hobbyists who'd rather not sacrifice accuracy for user-friendliness.

A number of other tools are provided to simplify object creation, too. *Extrude* takes a two-dimensional shape and converts it into a 3D one. Although limited in its flexibility, it's ideal for creating logos because the designer can use his favourite art package to design it, and, using *Extrude*, instantly convert it into a three-dimensional object. *Lathe* is handy when the user needs to create circular objects, including plates and discs. A two-dimensional cross-section of the object can be rotated around 360 degrees to create a solid object, or by less if a completely round object isn't required.

One of the most exciting object creation tools is the *Tree* function. This is used in the creation of realistic plants and, obviously, trees - complete with leaves if required. This function uses a 'growth' algorithm that lets the user specify a range of variables before the plant is created. The diameter of the trunk will affect the overall size of the tree, and the branch height defines how spindly or bushy it will appear. By specifying the angle at which the branches grow, a variety of species can be created, ranging from an over-hanging Willow, a bushy Oak, or a rocket-shaped Poplar. The funny thing about this option is it's so simple, you can't help wondering why nobody thought of it before!

Moving from trees to landscapes, and in the panorama department, *Ray Dance* offers two types of fractal creation. The first is the simple import or creation of fractal landscapes in much the same format as *Vista* or *Genesis*. The second is rather more simple, and creates a variety of landscapes based solely upon the Mandelbrot set. These tend to be quite simplistic in appearance when compared to the output of the former method, but, nevertheless, they're still better than

In 'Red's Dream', a variety of surface textures are used, ranging from the matte finish of the motorcycle's seat to the shine of its springs.



LIGHTWAVES Ray-tracing has come a long way since the Amiga world was first stunned by the Juggler demo, which was written using an early program (colloquially titled *The Ray Tracer*). Despite the razzamatazz of recent years, the end objective remains the same as it ever was: to create scenes which are as realistic as possible, using three-dimensional objects and computer-calculated lighting and shading. It does this by taking a specific point on an object in the scene, and back-tracing every ray of light that hits that point, taking into account the surface properties of the point. The process is repeated for every pixel on the screen, and requires a HUGE number of calculations.

It's been used to spectacular effect in a number of films, including *Star Trek*, and is now recognised as an art form in its own right, resulting in animated films such as *Lisa Junior*, *Red's Dream* and *The Train Who Could*.

Because of the large number of frames required to create these films, even the fastest Amiga would take years to create a single ten minute section. The labs that create them use parallel processing systems which are effectively dozens, or even hundreds of computers all linked together and working simultaneously.

the plain or chequered backgrounds that usually accompany fractal pictures

Once the outline of an object has been created, its realism can be enhanced further in a number of ways. To start with, it needs to be coloured, and *Ray Dance* allows the artist a 24-bit palette of 16.7 million colours (although they're not all visible on a normal Amiga). I particularly liked the Graduation option which allows the addition of rainbow colours to any face of an object, rather like the copper effects that turn up in a lot of demos.

DO THE BUMP

The two most popular colouring options are the texture and bump-mapping facilities. Texture mapping takes an IFF picture and applies it to a selected object, so that the object has a picture stuck to its undulating surface. Bump-mapping also requires an IFF picture to operate, but rather than applying the picture directly on to an object it takes the brightness values of the picture and converts them into pseudo-contours on the object. For example, if your picture consisted of black and white lines, the bump mapped object would appear to be covered in ridges and troughs. In fact, the contours of the object haven't been altered at all, it's simply been coloured to look like it. There are two varieties of each of these options: wrap and project. Whereas Wrap actually fits the picture around the selected object, Project works rather like a film projector shining the picture on to the object from a particular direction. Unlike a film pro-



John Lasseter's *Knick Knacks* animation shows the effectiveness of combined ray-traced and hand-drawn elements.



jector, the image so 'shines through' to the rear of the object as well - like those irritating little kids who interrupt the film with a series of hand shadows, burbles and birds.

When the objects have been created and composed into a scene, the position and lighting style must be selected. Four types are provided, (star, lamp, infinite and ambient), each of which results in different spectacular effects. Obviously, the scene is going to be useless unless you can see it, and that's where the Camera functions come into play. The user needs to define from where, and

how, the scene will be viewed. The camera can be freely moved within a scene, and the zoom mode can magnify a certain area if required. Even the amount of light entering the 'lens' can be altered, lightening or darkening the end result.

RENDERED USELESS

Once everything is arranged to the user's satisfaction, all that remains is to render (draw) the picture. *Ray Dance* comes with two versions of the rendering program: one for owners of 68020/30 accelerators, and the other for owners of standard machines. The rendering engine (as Radiance calls it) has a nice point and click interface, from which the user can issue any commands necessary to create a picture.

There are two rendering modes: Wireframe and Ray-Tracer. Wireframe simply draws a quick outline of the scene so that you can check its composition, but it's one of the slowest wireframe modes I've



Even light is not the ideal for every scene. This little scene shows a desk lamp which is given a personality in the way it moves.

let's dance

ever encountered. Ray-Trace produces a full-blown 24-bit picture. On an ordinary A500, this can take hours to draw. Having said that, it seemed quite fast compared to other packages I've used, and compensates for the slowness of wireframe mode. When drawing a picture, a HAM rendition is created on-screen so that you can get an idea of how the finished picture will look. Unfortunately, there's no way to save this HAM version, so if you don't own a 24-bit board, you'll have to convert the finished picture via a package such as *Art Department Professional*.

At the rendering stage, there are a number of attributes - shadows, Phong shading and haze, for instance - which can be toggled on or off. When switched off, rendering times are greatly reduced, as is the realism of the finished result.

Two counters display the percentage left to be drawn, and the time taken so far. *Ray Dance* also supports animation, and can be used to define hierarchical relationships - the attachment of one object to another so that they move as a single unit. The package also provides Tweening, whereby the user indicates certain Key Frames, and the software works out all animation in between them. This feature can then save hours of unnecessary work.

When rendering animations, they can be started and ended at any position within the sequence. This makes the rendering of a few frames at a time possible, saving much valuable time, and is considerably more preferable than having to leave your computer running for hours or days on end.

SAMPLE PROGRAM This short routine displays a goblet that has been textured, mapped as wood and bump-mapped with worm trails. It took three hours 43 minutes to render in 24-bit colour on a standard A500. It doesn't include the data to define the shape of the goblet as that is loaded separately.

```
WHITE :COLOR( RGB, (1.0, 1.0, 1.0) );
DKGRAY :COLOR( RGB, (0.5, 0.5, 0.5) );
BLUE :COLOR( RGB, (0.1, 0.0, 0.3) );
GREEN :COLOR( RGB, (0.0, 0.2, 0.1) );
DULL :SURFACE( SIMPLE, (1.0, 0.0, 0.0, 0.0) );
```

```
SHINY :surface( PHONG, 0.4, 0.0, 0.0, 10.0, 0.0, 0.0, 0.0, 0.0, 0.0 );
```

```
ROCK :material( PHONG, 0.3, 1.0, 0.2, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0 );
```

```
canals :bumpmap( "canals.tif" );
wood :texturemap( "wood.tif" );
!! Object to import ...
```

```
tbl :texture( plane, wood, (0.0,0), (0.0,5.1), (-1.0,0), 400,400,400, 3.2, SMOOTHSIREPEAT );
```

```
tbl1 :bump( sphere, canals, obj1, 3.0 (0.0,0), (0.0,1), (-1.0,0), 3.2, NEGATIVEIREPEAT );
```

```
gob :import( "goblet.tif", (0.0,-150), (30,30,30), (0,100,0), (1,1,1), 0 );
```

```
gob.color(14) = tbl; ! replace yellow
gob.surface(1) = tbl1; ! replace glossy
```

!! Lighting ..

```
star1 (1500, -8000, 1500), (1.0, 1.0, 1.0), 1000 );
```

```
star2 (-5000, -2000, 2000), (0.0, 0.7, 0.7), 1000 );
```

```
ambient( (0.0,10000), (0.3,0.3,0.3), (0.0,1), 0.0, 0.0 );
```

!! Ground and background...

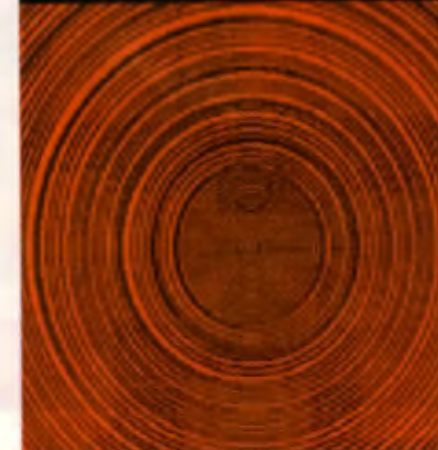
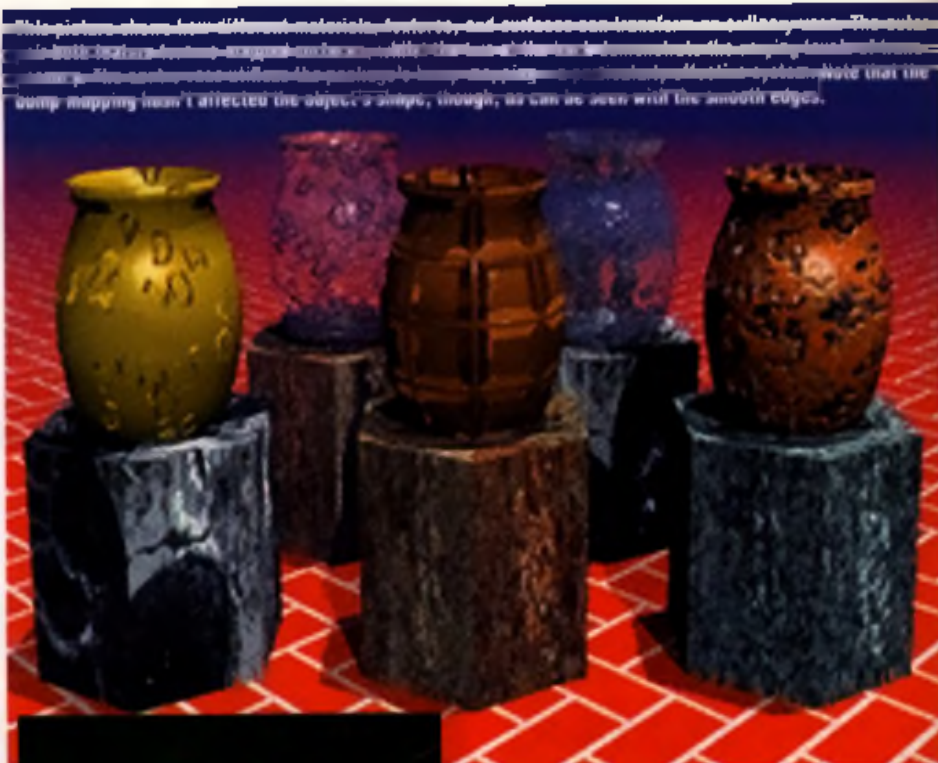
```
background( PLAIN, (0.05, 0.1, 0.00) );
```

!! Camera stuff...

```
CAMERA'POS = (0 -300,200);
```

```
CAMERA'TARGET = (0.0,-30);
```

RENDER;



A simple goblet can be quickly transformed into something magical with Ray Dance's bump-mapping capabilities. First, a wood brush is projected on to the goblet as a texture map. The worm trail pattern is then used to give the impression of contours. Finally, the new object is rendered in 24-bit colour.

RAY DANCE

... at a glance

- Cheap Price
- Automatic tree and landscape generation
- Variety of texture and bump-mapping options
- Imports objects from other packages
- High screen resolution
- Requires a 24-bit board

CONCLUSION

Ray Dance is an exciting package offering many features not found in other packages (tree growth, two types of fractal generator, algorithmic object definition), and this is especially good at the package's low price. As it's script-driven, potential users may be put off, but it's actually fairly simple, and can be rapidly grasped. It's a pity that the output is only in 24-bit IFF, as most users don't own a conversion program or a board capable of displaying the pictures. As you can define objects in algorithmic form, though, you can create scenes which have hitherto unseen accuracy, and this precision is *Ray Dance's* greatest strength.

Although it doesn't offer enough to warrant throwing your other packages away, this is an ideal accompaniment for any other ray-tracer on the market, and new users may want to consider *Ray Dance* in preference to other, more expensive, systems.

VERDICT

Budget priced package that's big on features

EASE OF USE	70%
VALUE FOR MONEY	85%
EFFECTIVENESS	90%
FLEXIBILITY	95%
INNOVATION	80%

OVERALL 84%

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SAVE PICTURES AND MUSIC TO DISK

Pictures and sound samples can be saved to disk. Files are saved directly in IFF format suitable for use with all the major graphics and music packages. Samples are displayed as screen waveforms.

PAL or NTSC MODES SELECTABLE

Useful for removing ugly borders when using NTSC software. (Works only with newer Agnus chips).

SLOW MOTION MODE

Now you can slow down the action to your own pace. Speed adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!

MANY MORE INSTANT CLI COMMANDS

like Rename, Relabel, Copy, etc.

RESTART THE PROGRAM

Simply press a key and the program will continue where you left off.

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Now you can manipulate and search for screen data throughout memory. Over 50 commands to edit the picture plus unique on screen status 'overlay' shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!

JOYSTICK HANDLER

allows the user to remap any combination of Keypresses - very useful for many keyboard games.

MUSIC SOUND TRACKER

With Sound Tracker you can find the complete music in programs, demos, etc. and save them to disk. Saves in format suitable for most music software. Works with loads of programs!

AUTOSAVE MANAGER

Press the Action Replay III green button and you can now set up to 1000 autosave points. Press the joystick button and you get an autosave for a single program!

PLUS A RANGE OF IMPROVED FEATURES.

DISKCODES

With the new "DiskCode" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged' disks will only reload when you enter the code. Very useful for security.

KEY MAP

allows you to Load/Save/Edit a Keypad.

PREFERENCES

Action Replay III now has a preferences menu with many options to suit your taste. Very simple to use.

DISK MONITOR

Invaluable disk monitor - displays disk information in easy to understand format. Full info on disk options.

IMPROVED PRINTER SUPPORT

Includes program to control printer settings.

DOS COMMANDS

Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.

FILE REQUESTOR

If you enter a command without a filename, then a file requestor is displayed.

DISK COPY

Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.

PLUS IMPROVED DEBUGGER COMMANDS

Including More Watch Points and Traces.

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Either D00 or D01 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

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 - and Pig
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 - Help command
 - Full search feature
 - In the Custom Chip Editor allows you to add and modify all chip registers - even write only registers
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 - Disk handling - allows sector level, Disk Sync, pattern etc.
 - Dynamic breakpoint handling
 - Show memory in HEX ASCII Assembler Decimal
 - Copper Assembler Disassembler - now with suffix names
- REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN ITS "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT - AVAILABLE FOR THE DE BUDGET OR JUST THE INDUSTRY!

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SPARKS

games which will signal if you hit a Bull's-eye. These learn as you do' examples are very useful as they help get the creative juices flowing, and whet the appetite for further learning - essential in a tool like this. Another nice touch is that this method of tutorial and experimentation lies in with the new national curriculum, making the kit ideal for younger users.

ADDRESS BOOK

Tekno Amiga details for £14.95 on the back 10, and is available from 40 Marketing, who can be contacted via Concord Building, Unit 2, Bayle 14, Colchester, Essex, S2 9JL. Alternatively, give them a ring on 01206 62888.

Progressing to more interesting topics (such as photo sensitive resistors which react according to the amount of light falling on them), yet more practical applications are suggested. How about a detector which tells you if someone's been rummaging around in your drawers? Younger Kids drive on this secret agent stuff, and if the topic catches their interests then they'll want to explore further - but don't think it's limited to them. As the concepts are gradually introduced, and build on knowledge that's been learned from earlier experiments, this is an interesting activity for adults, too - after all, how many times have you heard someone

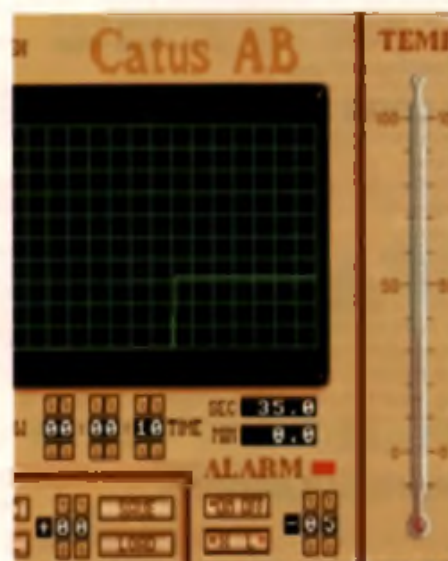


Using a pulse counter and the Speed program, it's possible to calculate the speed of any moving object.

say I wouldn't know one end of a computer from another?

This becomes evident in the latter parts of the manual when, using a specially extended version of Basic, the user is able to explore many binary functions including Boolean logic. By connecting eight LEDs to the board, it can essentially be configured to represent a byte of data. By inputting different commands (in the form of Pokes), these lights can be used to show the status of usually hidden functions.

As an all Tekno Amiga reminded me of an advanced version of those home electronics kits that you may have tinkered with as a kid, I was a little dubious about plugging it into my Amiga, but my fear was unjustified and I didn't encounter any major problems. Because the Tekno uses cheap and easily available components the package also offers a twofold advantage; they can be easily replaced should you damage any - and I have no doubt that wear and tear and rapid loss of components will soon take its toll. Similarly, you can also buy additional parts if you want to experiment further, and this adds to the package's already plentiful longevity.



The Amiga becomes even more flexible, as Tekno can even turn it into a thermometer - although it's rather a crude one!

CONCLUSION

The manual could have been written a little more clearly, but, in a strange way, this vagueness forces the user to experiment, and helps reinforce the subject matter. The package seems ideal for any educational environment, such as a school - particularly as it lies in with the new curriculum. A selection of well-written programs enable you to monitor temperature and light changes over any period, create timers, pulse gauges, and a variety of other tools. If you want to learn about electronics, this is a very good accompaniment. But go out and buy yourself a decent book on the subject too!

THE SOFTWARE

Tekno Amiga comes with a selection of useful software to help you get the best out of it. Here's what you get:

Speed 1-4: Four programs which play a sample when a switch is activated.

Reaction: A game to test your reactions when closing five switches.

Timer: A stopwatch program.

Speeds: A program for calculating the speed of a moving object using analogue or digital inputs.

Calendar: A program which can be used to regulate your environment by activating lights, triggering burglar alarms, etc.

Pulse Counter: Counts digital and analogue events and can be used as a timer, or even as a movement sensor.

Temperature: A routine which displays the temperature via a thermal resistor. Can be used as a simple thermometer as part of school projects, or as part of a thermally-activated switch.

Light: Measures and displays the amount of light entering a photo-sensitive cell. Again, it can be used as part of class projects to monitor weather or sunlight. Or, alternatively, can be incorporated into more sensitive experiments.

Resistance: A test program to test your knowledge of resistors and their values.

Tekno Basic: A variation on Amiga Basic which includes special commands to control the Tekno Amiga circuits.

THE ELECTRONICS REVOLUTION

Modern day electronics owe their birth to observations made by Thomas Edison in the early part of the century. He noticed that under certain conditions, an ordinary light bulb displayed some unusual properties. For some time, his observations remained unexplained, until eventually an English physicist, J.J. Thomson came up with an explanation which led to the development of the vacuum tube, also known as the valve.

This newly-created vacuum allowed scientists to control electricity in ways that were hitherto unimagined of, and it was also thanks to the valve that the first computers were developed. In fact, early computers held the dubious distinction of being the largest vacuum tube systems ever built, with ENIAC (the Electronic Numerical Integrator and Calculator) one of the largest. It contained a staggering 17,468 tubes, and was able to calculate up to 5000 mathematical operations per second, 1000 times faster than its rivals of the day.

Modern day computers use solid state electronic circuits and have been extremely miniaturised in the quest for portability and power. The latest challenge to computer designers, is to create machines which can perform over a billion (a million million) calculations per second. These machines are dubbed Teravics super-computers (Teravick for a trillion Ping-Pong Point Operations). The fastest computer in the world, Intel's Touchstone Delta, can only operate at a measly 13.8 billion calculations per second. Ironically, in the quest for greater speed using parallel processors, room-sized computers are again becoming commonplace.

VERDICT

Plenty of educational value but let down by its manual.

EASE OF USE	85%
VALUE FOR MONEY	70%
EFFECTIVENESS	75%
FLEXIBILITY	95%
INNOVATION	90%

OVERALL 83%

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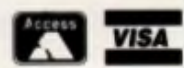
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makin' movies

The expanding world of multimedia and video applications for the Amiga has drawn a lot of software into the fray. Chris Jenkins looks at two packages trying to find their way in a confusing world.



If you have an Amiga and a video camera, the easiest way to make the most of this potentially-exhilarating combination is with a captioning package. With these, the user can create titles and captions for insertion between shots to make your videos more informative, interesting and professional. Even better, used in conjunction with a genlock, the Amiga's graphics can be superimposed over a live video. To take it a stage further, you can then combine audio and visual data from several sources for a presentation - this is Multimedia. Multimedia - the combination of computer graphics, text and audio - is one of today's buzzwords. It's such a complex concept that the trick is to create software which can handle multimedia presentations whilst still manageable.

TV*SHOW & TV*TEXT

Although there are inexpensive and easy to use packages - Alternative Image's *Big Alternative Scroller*, for example - for a more powerful combination you should check out Zuma's *TV*Show* and *TV*Text*. Originally available as two separate packages, they have been bundled into an excellent £159 compilation courtesy of UK distributor, Silica Systems.

Although *TV*Show*, the presentation program, and *TV*Text*, the font rendering module, would appear pretty complex to a video operator new to the Amiga, they are still a great deal simpler than, say, Oni's *Presentation Master*, and the *TV*do* are more squarely aimed at the video production market.



Left: Even if you are simply adding captions to a video of Auntie Doris's 100th Birthday, you'll struggle unless you invest in a decent titling package. In addition, the advent of titles and wipes will add class to your work.

Described as 'the special effects slideshow for graphics, animations and sounds', *TV*Show* is packaged in a stout cardboard box with a spiral bound manual and two disks; one containing the main programs, the other a selection of IFF-format clip art and backgrounds. On the program disk are a player program, which allows you to play *TV*Show* scripts without the main program, and the main edit program, which creates the scripts. Although the package can be run on any Amiga, you are recommended to install it on a hard

disk to ensure that memory limitations aren't a problem when creating more complex 'scripts'. *TV*Show* is also compatible with all Amiga screen modes (including HAM, overscan and extra half-brite).

SCRIPTS

The Edit program runs using the familiar system of pull-down menus and icons, and these are integral in the creation of *TV*Show*'s 'scripts'. A script consists of a series of events, where each event involves an object (either a caption or a graphic), an 'on transition' (the way the object appears on-screen), a duration, a colour-cycling option, a sound option, and finally an 'off transition'. String a load of these together and you have a script - it's easy!

To begin a new script, select New from the Project Menu, and give a name to the new script. Next, move to the Create Event window. Each icon

makin'
movies

Exciting Effects

Drop, Cast, Transparent

Gloves, ~~Interlocking~~, Strobes

These are just some of the exciting effects that can be achieved using TV*Text - the text rendering part of the package. All of the examples shown were produced in Hi-Res and are designed ready for insertion. As you can see, they can then be used to produce exactly the style you require, and can add individuality to the piece. For instance, you can use old-style text for, say, an old relative's birthday video.

within this area represents a different type of event - screen, object, animation, and so on - you just click on the one you want, and this brings up another edit window with the necessary options for the chosen event.

The utility's many parameters are set by typing numbers into windows, clicking on icons, or adjusting sliders. As you build up a series of events, you can specify whether they are to take place automatically in the final script, or if they are triggered by a function key - when adding titles to a video, either option can be useful. Events can also be programmed to loop repeatedly until interrupted by a keypress.

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One of the most impressive parts of TV*Show is its range of transitions.

These allow you to introduce objects on-screen in over forty different ways, including fading, directional scrolling, splitting, and appearing from beneath other objects. Unfortunately, the manual is limited in its explanations of these, so experimentation is the key.

TV*Show can also cope with IFF Anim format animation files and if you have created an animation using, say, DPaint, they can be incorporated into your TV*Show scripts with ease. It can also handle sound, either by playing IFF samples or using the Amiga's text-to-speech routines. Both are useful in video production, whether it's adding narration to captions or appropriate music and sound effects to movies. Since the script is easily edited, any

changes to the video can be incorporated into your scriptor they can be merged or appended; a ScriptMover utility also makes it easy to transfer the main file and any necessary to run it.

RENDERED FONTS

As a presentation editor TV*Show is great, but it doesn't have facilities for the actual creation of graphics or captions. This is where TV*Text comes in. With a terribly inadequate menu supplied, it's just as well that TV*Text's font rendering and text-editing facilities are a doddle to use. The basic idea is to let the user create variations on the Amiga's system fonts, or of Zuma's large collection of IFF fonts, to consequently create captions as IFF files which can be used in TV*Show.

TV*Text runs in either medium (640x200), or high (640x400 interlaced) resolution using eight colours. You start with a choice of eight fonts, which are available in a number of sizes and styles. The New Text option allows you to enter a line of text, and alter the letter spacing. The Rendering Preferences screen is where the fun starts, though. From here, you can add three styles of shadow (drop, cast and transparent) with variable depth and colour; strobes (repeated shadowing with varying colours); outlines, edge and extrude effects; and lighting effects from nine different angles. These preferences can then be saved for later use.

After positioning the text on-screen it can be cut and pasted, whilst other options allow you to squeeze, stretch and resize areas using the mouse and a set of crosshairs. Other options allow the rotation and justification of text with a grid. There are also options for creating assorted background effects, such as centred, vertical or horizontal gradients, tiling and wallpapering, along with the more rudimentary lines, boxes, circles and ellipses. There's an Undo function, too, in case you make any drastic mistakes.

The rendering and editing effects can be applied to IFF images loaded from other sources, and this means that your selection of backgrounds



TV*Show offers a good selection of Wipe effects, but Presentation Master features slightly more. This variation can add much-needed panache to your captions and effects.



The speed an effect takes to work can be adjusted, too. This can then be used to synchronise with any music you may be using.



A useful TV*Text feature is that IFF files can be imported from, say, DPaint and overlaid.

and graphics is virtually unlimited. The colour palette is also freely adjustable, and easy to adjust using the range, swap and copy functions. You can also control colour hue, saturation and value.

CONCLUSION

The drawback with TV*Text is that it isn't actually a font editor - you can't build up typefaces pixel by pixel. On the other hand, with so many fonts available commercially or in via PD, why bother? With TV*Text's editing features you'll have a great time hacking lettering around and creating captions ideal for use with TV*Show. Together, these two programs make a powerful and reasonably-priced package which is ideal for a wide range of video and multi-media applications. Everything you'll need is here, and this is an excellent introduction to all things Video.

VERDICT

Flexible and easy to use, ideal for video production and multi media

EASE OF USE	89%
VALUE FOR MONEY	79%
EFFECTIVENESS	88%
FLEXIBILITY	87%
INNOVATION	69%

OVERALL 78%

TV*SHOW / TV*TEXT

...at a glance

- Event-based graphics presentation
- IFF graphics and sound compatible
- Text-to-speech option
- 13Mh preferable
- IFF-compatible caption generator
- Advanced font rendering features
- Range of effects and editing options

PRESENTATION MASTER

FAMILY HISTORY

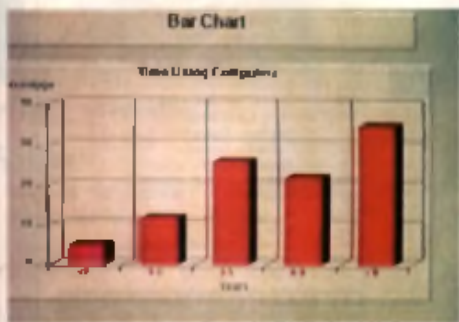
Arguably *Presentation Master* from Oxix comes from a long line of graphics and animation based programs, it certainly shows the experience and knowledge of its programmers – however, this is at the expense of alienating the new user.

At £200, it's aimed at the pro or semi-pro market where time is money. Just reading the package's enormous 200-page paperback manual could take days, and installing the program is a marathon task.

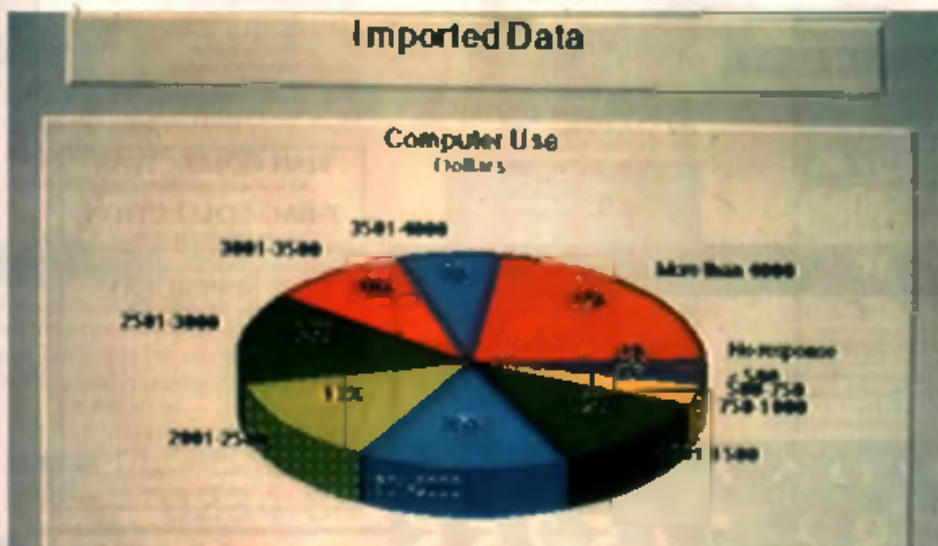
Presentation Master includes a full featured object oriented paint program, a 3D titling and text rendering module, the ability to create business charts, and a slide-type presentation function (although it doesn't support audio functions). It operates using 24-bit internal colour files – but it's quite happy to accept IFF graphics from almost any source – and it can output in the PostScript language used by laser printers, typesetting machines and other professional systems.



The importing of files is extremely simple, and the selection of the place you wish to store or retrieve.



As well as for home use, the business version for such packages are and last – and very impressive.



INSTALLATION

The program comes on twelve disks, all of which are jam-packed with modules, fonts, backgrounds and clip art. You need at least 2Mh to run *Presentation Master*, but you don't need all the tutorial routines, fonts, and graphic files installed simultaneously – if you do it takes up 111Mb! Unless you enjoy endless amounts of disk-swapping and long waits, don't even think about using the program without a hard drive.

A special installation 'script' utility allows you to configure the program for your system and install it to your hard disk. However, all the data has to be decompressed, and this can take hours if you install the whole shebang. Once installed, your problems are only starting. Despite the manual's index and glossary, it's pretty unwieldy – the installation procedure, for instance, isn't documented until the appendices, and the 'fast startup' chapter is actually a long exposition of practically every facility of the program, rather than the quick demo you'd hope for. Despite this, though, it will teach you virtually everything you need to know.

Presentation Master's basic working unit is the 'slide'. There are four different types of slide – empty, black, picture/animation and layered – and several default layouts combining text and pictures, although you can also design your own layouts.

LAY IT ON ME

The most flexible slide is the layered type. This combines text and graphics in windows, initially bounded by dividing lines and marked by handles. Each window – and there can be up to 50 – is known as a Layer, and an activation via the menu it can be edited. Comprehensive text processing functions allow the entering and editing of text in any Layer, and a moveable function box lets you such effects as italic, bold, and centering. ASCII Text can also be imported.

Once you have selected the first slide, others can be selected relevant menus. As an example, let's try a nice business presentation graphic – a bar chart, for instance. This time you want to work in a graphics window, so a graphics toolbox is automatically opened.

PRESENTATION MASTER
at a glance

- Slide-based presentation program
- Requires 2Mb, hard disk
- IFF and EPS graphics compatible
- Creates Postscript output files
- 24-bit colour internal processing
- Object-oriented paint program
- 3D titling, text rendering and business chart modules

BOXING CLEVER

The graphics toolbox offers all the usual painting options of lines, polygons, fills, and zooms and uses a 256-colour palette leaching 16 basic colours, with the real 'Dithered'. PM offers a family of default bar, area and pie charts templates. There are also options for vertical, horizontal, floating or parallel bar charts, and for other pie charts.

PM's third area of expertise is in object-oriented painting. In addition to the bitmap fonts, it can also handle IFF or EPS (Encapsulated Postscript) images, IFF animations and PolyText fonts. These are a special class of object which can be entered like text, and manipulated like graphics. The Paint Object menu lets you add shadowing, extrusions, beveling, fills, rounded edges and other effects, and it's possible to completely redefine the shape of lettering or, using the paint functions, twist it into 3-D shapes. In addition, the colours and size can also be altered before saving them for use in your Show.

ON WITH THE SHOW

Shows are created using the Slide Sorter window. This displays your selection of slides in a 'rack' and these can be played or edited by clicking on the relevant button. Between slides, you can also select a range of transitional effects including nine directional wipes, twelve styles of scrolling, and nine block-reveal patterned effects. The speed of transitions is adjustable, and it's also possible to create slideshows where a Parent slide has several Children. The operator can then choose in which order racks of slides are shown by selecting them with the keyboard. It's also possible to define hotspots on the screen so that clicking on a particular area selects the next slide or series shows. The possibilities for multimedia applications are obvious.

Presentation Master shows can be 'vulcanised' – that is, saved in a stand-alone form with all necessary graphics files. These vulcanised shows can be played without the program itself, but, of course, can't be edited.

CONCLUSION

Unfortunately, I have to end by saying that *Presentation Master* is a very powerful and flexible package, but is probably too complex, unfriendly and unreliable to be worth recommending. The package baffled me several times by refusing to load graphics files for no apparent reason – and examining the manual threw up no clues either. It also crashed for no recognisable reason when I tried to perform simple tasks – moving from the slide preview display back to the slide sort window, for example. It's not surprising that, with 11Mb of data to handle, the odd problem should arise, but it's disappointing that a program this professional is not better error-trapped.

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VERDICT

Complex, unfriendly, but undeniably powerful presentation package

EASE OF USE	45%
VALUE FOR MONEY	60%
EFFECTIVENESS	94%
FLEXIBILITY	89%
INNOVATION	76%

OVERALL 72%

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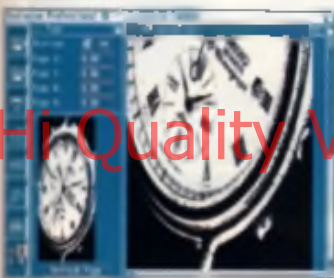
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With a digitiser, you can quickly realise your worst nightmares. In this case, *Mask Of The Evil King* takes you to a hell of a time. The sound effects consist of a terrifying silence down a telephone.

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The tutorial adventure supplied a very playable as well as a perfect example of the joys and ouches of the *Visionary* system. It is a realisation of the old dull adventures that enjoyable new adventures.

VISION ON

If you've ever tried writing and coding an adventure game I'm sure you'll understand the horrendous difficulties involved. If you've never even tried (which probably indicates a more sensible slice of the population), for fear that your brain may explode, now is your chance.

There is still a certain amount of sweat, though. *Visionary* allows you to write either a text-only, text-graphic hybrid or graphic-only adventure, using a system rather like a high-level programming language. If you've used C or Assembler, you'll know all about Source files, Compiling and linking. If you haven't, you're about to undergo your first programming adventure.

ROOM TO MANOEUVRE

Amongst its many features, *Visionary* offers up to 65,000 rooms and 65,000 objects to be created – enough to suit most people's needs. In addition, up to 4000 million characters of text are available to the user (roughly 50 telephone directories), and the package can make full use of IFF sound and graphics. It all sounds too good to be true.

Of course it is. If you were to attempt an adventure with 65,000 locations you would end up with more than 2 million lines of code. Slightly unrealistic – so let's acknowledge that small is beautiful, and be happy with a slightly more modest first adventure.

IN THE BOX

Visionary comes complete with two disks (a program disk and a graphic adventure demo), and a 160 page manual, a third of which is taken up with the coding for an example game. A further manual

is supplied in the form of a Programmer's Handbook which comes with a third, separate disk containing a full graphic-text adventure. This second manual covers the actual game design and coding, while the first manual is more of a tutorial.

Not wanting to break with *Adventure Creator* lore, the manuals are very long and boring – by the time you've got to the end, you'll have forgotten anything you learnt at the start. The only way to really find out what it's all about is to jump straight in. This is made easier with the listing for a simple adventure supplied in the first manual. By having a quick look at it and viewing the general layout, you can see what your code should look like.

The first step in creating your adventure is to have a good idea of what you're going to do. Once you have the basic idea (number of rooms, what you can do, etc) it's off to your text editor for some serious programming. The Amiga comes with a usable(?) text editor called ED, but a word-processor can also be used if you prefer. Any WP will do, as long as it allows text to be saved in ASCII format.

Alternatively, you could go for *Visionary's* own editor, VIE – the *Visionary Interactive Editor*. VIE allows you to select graphics elements using the mouse and rapidly define your adventure map in an environment much like an ordinary paint program. This is an absolute must if you intend writing a serious *Dungeon Master* style adventure.

SECRET CODING

Visionary uses a system of spectra files to keep all the source code organised, and to keep individual files from becoming large and unmanageable. There are five classes of source files, the first of which is the Adventure file which is the most important and easiest to write. This basically provides the system with key information such as the names of the other files, the password, variable names, and which room the player will begin the adventure in. There's only one adventure file per game, but any number of the other related files.

The password is a real idea which allows you to protect your program and prevent anyone from looking through your source code for a few hints.

The other four classes of file are Room, Object, Subroutine and Vocabulary. Once you've written the basic adventure file, your new job is to define your Room file. Each room must have any possible exits defined, along with the necessary sound effects and object information. Following this, it's time to set up the areas on the screen which can be utilised by the mouse. Again, this is fairly straightforward: simply place all your objects, both

moveable and immobile, and give the room a description. In the tutorial adventure supplied, this takes roughly 40 lines of code, and the process must be repeated for every local on.

Once the rooms are set up, the game's objects

IFF-Y GRAPHICS

Visionary allows the user up to 25 graphic screens in memory simultaneously. IFF image files are supported, including HAM images. Within RAM limits these images can be imported from disk at any point during the game. Creating your own graphics can be a time-consuming task and your finished adventure will depend heavily on how good an artist you are. If you're not the artistic type, don't despair – find a friend who is.

must be defined, and this involves giving each an initial location and a brief description. You must also give each object a series of possible uses, and a set of object synonyms which the player can use. 'Sand', for example, might also be referred to as 'dirt', 'the ground' or 'the floor', as well as by its proper name. The only drawback here is that for a large adventure with a lot of objects you are going to have an awful lot of code. This is only to be expected, but restricting the number of objects might not be a bad idea. However, an unfortunate side-effect of this is that incredibly huge adventures may be out of the question, unless there is some brave-hearted Tolstoy blood in you.

There are a variety of tasks which must also be performed at the beginning of any game, such as loading in your nice graphics, adding sound effects and songs, new fonts, printing the game's opening text, or defining click zones. To make this source code easier to find and deal with, it can be put in a sub-routine called StartUp which is only called for once. The Subroutine file is a special section of the code which performs key functions, and can be called from anywhere in the adventure. This makes it easy to perform a particular function repeatedly — movement

inputs, clearing the screen, redrawing the screen, or printing text, for example. The final file — the Vocabulary file — defines all the nonstandard phrases, words, and special functions. In the tutorial, the load, save and help sections are also stored here.

The coding is fairly straightforward, if a little long-winded, and the screen's layout makes it easy to follow and use. A good structuring of your adventure's code is essential, as you will often come back to rework your code during the course of development, and a little thought at the start could save you many extra hours of code-scouring later.

COMPILER TIME

Once you have completed your code, it's time to visit the Compiler. The Compiler is simple to initiate and is reasonably fast and translates the *Visionary* command language to machine-readable code. In the process, the source code files will be encoded using the password from the adventure file. This then prevents anybody from ripping off the nice graphics and sounds you've created.

BUG HUNTING

Compilation complete, your adventure is ready for a little wrinkle testing. Like any other form of programming, debugging is the process of having the computer help you search for errors in your source code. *Visionary's* debugger utility, DBUG, allows the user to develop, play, and root out any bugs and errors in your adventure. The biggest asset of the system, though, is that it allows you to hunt them whilst actually playing your game. Instead of crashing, halting, or otherwise misbehaving, when the debugger runs across a problem or bug in your source code it allows you to look at the source of the trouble, and even provides additional information to aid you in the correction of the error.

While the debugger program is running, com-

MEDICATION

As with the graphics, sound is very important to the overall effect of the adventure. *Visionary* allows you to have up to 25 sound samples in memory at any given time. Theoretically, you could play complete sections of sampled music in this way, but the cost in memory terms would be prohibitive. A more sensible alternative is to use *MED*, which *Visionary* fully supports. Sound effects can help to build atmosphere in your game. Does clumming, ghoulish laughter, distant screams, even the monotonous hum of a computer or a ship's engine all heighten the player's appreciation of the game. You should decide early on in your game development process just how many samples you are willing to use, since this will determine how many disks your game is going to occupy. Keep in mind that incessant disk access will bother the player, though. Once again, if you're not a great composer, get some help with the music and sound effects.



Above: A screen from the demo adventure 'I was a Cannibal from the FBI'. What you cannot hear are the delightful sound effects of birds singing.

Above left: A selection of the ordinary DBase-type buttons used within the example Dungeon game.

Left: Another screen from the Dungeon game. The alien is an invader, which slowly on a standard PC screen.

Below: More code. This time from 'I was a Cannibal from the FBI'.



VISIONARY

...at a glance

- Allows you to create your own computer programmed adventures in a simple, easy-to-use command language and sounds.
- Needs little, but the more, the



mands can also be sent to the program for greater control of the debugging process. Easy-to-use commands are entered in the text interface of the game, just as the game text commands would be.

MISSING LINK

The final stage to adventure stardom is the Linker, which miraculously transforms all those long nights and blinding headaches into the final executable format — hopefully a playable game.

There are several ways in which your code can be linked to speed your game up, but it will depend on the size of your adventure. The final output of *Visionary* will be a single file — the base size of your game program will be approximately 200k, plus your other files, which in the case of the tutorial look a further 40K. Be sure that, before you link your final game, that you have enough disk space for the output file. Your adventure may be a lot larger than the tutorial!

CONCLUSION

Visionary has excellent potential if you're willing to spend a large amount of time and effort creating

your own adventure. On the downside, the overall speed and response time leaves something to be desired.

There's a nice disclaimer at the start of the manual, which says the publishers take no responsibility for the quality and performance of the finished adventure. How good the game is depends on the plot and ideas, not on who converts the concept to a runnable program — so what they are basically saying is that, if your adventure isn't quite the epic you'd originally hoped for, don't blame them! It's totally down to yourself.

Visionary does make adventures easier to program, but even the most experienced Visionaries will need a lot of time and effort to come up with anything like *Dungeon Master* or *Eye Of The Beholder*. It certainly makes you appreciate all the time and effort commercial programmers put into their games and makes the inflated asking prices of such games a bit more palatable to bear.

VERDICT

Adventure creating kit which is the best presently available

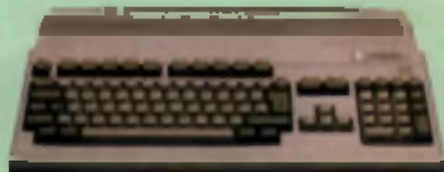
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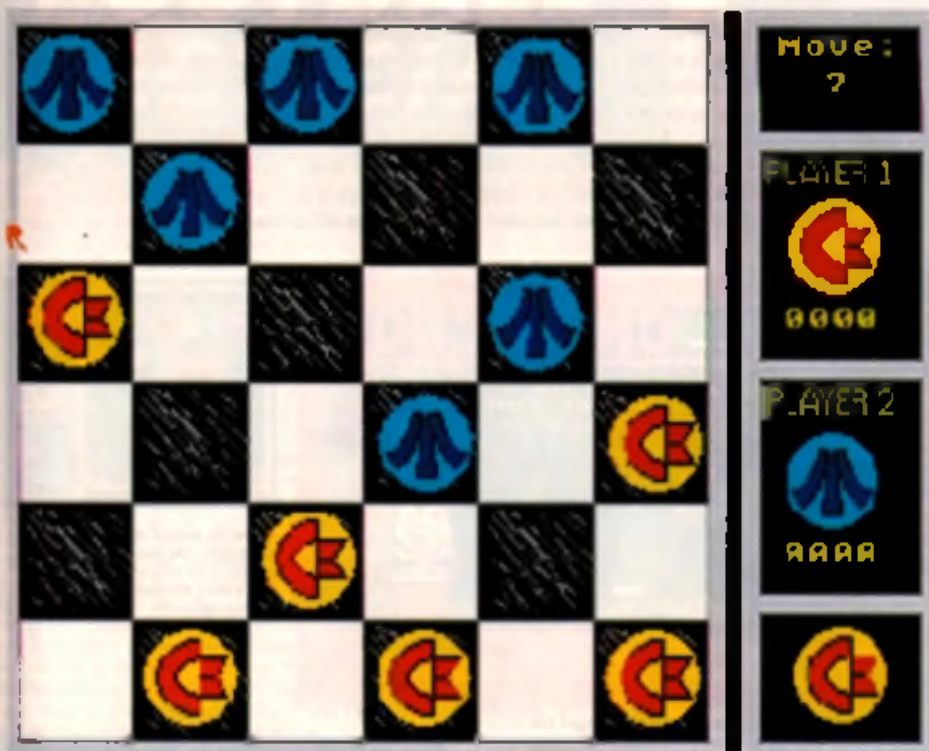
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left: It may seem straightforward, but this Amiga Draughts demo was knocked out in just half an hour. After drawing the board and pieces using DPaint, I simply placed them all on screen, ready for insertion in the game.

amos

made easy

It's back to basics, as Tony Dillon gets to grips with Europress's 'Baby' version of their classic AMOS programming language...

EASY AS 1,2,3...

As a practising BASIC programmer it's no wonder that I'm constantly praising AMOS within these hallowed pages. For people like me, it offers programming power which is far easier to use than BASIC. But what if you're one of the people who wants to learn to program, but doesn't know where to start? AMOS, with its 500 commands can be

very intimidating for the novice, and gives no real anchorage in encouraging early progress.

Realising this, Europress have been busy on this new, L-plate' version - Easy AMOS

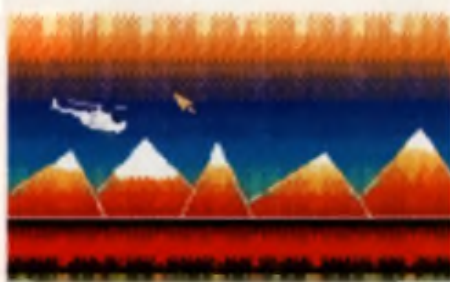
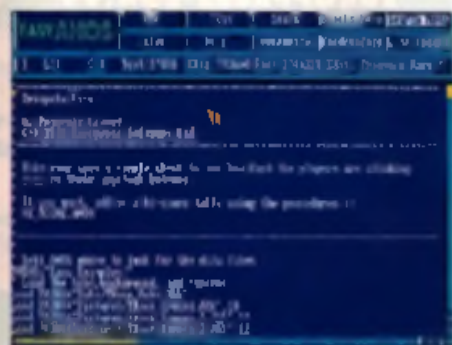
In brief, Easy AMOS is a cut-down version of the original package, with a lot more support for the programming novice. Help screens and menus, along with an excellently-written and presented

manual, provide most of the required answers to any problems encountered in the early stages of programming, and should see most people well on their way to success.

AMOS was originally designed as a friendly interface between the user and the Amiga, and offered easy access to the machine's hardware capabilities, without all the usual tedious mucking about with assemblers. An adaption of the old Beginner's All-purpose Symbolic Instruction Code (BASIC) language, AMOS uses straightforward English commands that do exactly as they say, and can be set out in a simple, logical format. The format was an immense success, making AMOS second only to DPaint 2 as best-selling Amiga non-games software, and has currently sold over 45,000 copies in the UK. Even though it provided the beginner with a complete, easy language with which to start creating, it didn't give any pointers as to what the budding Andrew Braybrook or Archer McClellan could actually do with their new-found skills - rather in the same way that comprehensive schools teach you a whole bunch of useful French phrases, but you have to wait until A-Level standard before you learn how to hold a basic conversation. Easy AMOS is the A-level teacher, and teaches you not only how to program, but also goes some way into aiding understanding of how to implement your knowledge.

MANUAL LABOUR

The first thing you notice on opening the box is the hefty 400-page manual. Flicking through this, it becomes apparent just how well everything is presented and explained. No facet of using the package is ignored, whether it's how to load and install the program, or advanced games creation techniques. Everything is accompanied by easy-to-enter examples and full descriptions of how each command can be used. To add a fun element to the manual, in the corner of every page is a small picture, and these act as frames from a flick book, and when skimmed through follow the birth of the Easy AMOS, and follow its rapid aging process. Also scattered through the manual are a collection of amusing misquotes from such luminaries as Groucho Marx, Martin Luther King and Michael Stipe. These make the manual a delight to read,



Anyone remember this one? Chopper uses a very simple scrolling technique which makes a small window over a large screen, giving the impression of movement.

amos

made Easy

even to the more experienced programmer.

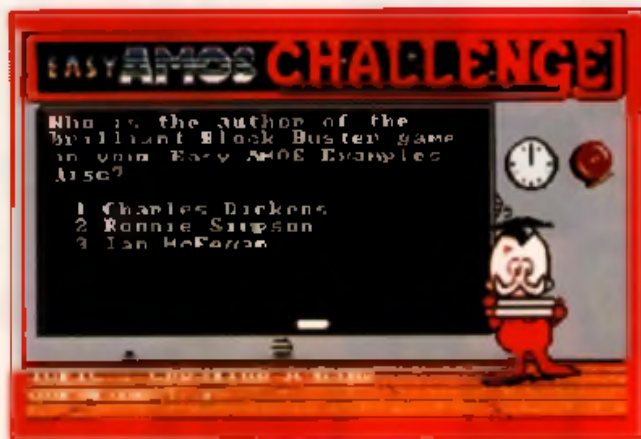
Next comes the installation program, a lengthy process which involves copying and unpacking the *Easy AMOS* files from the two master disks and dumping them on to three blank floppies. It's impossible to run *Easy AMOS* from the master disks, and this ensures that the disks can't be damaged by accidental use. The installation process takes about twenty five minutes, but is the only delay before diving straight in and trying your first program.

At first glance, *Easy AMOS* bears a huge resemblance to the original *AMOS* - the only initial difference being the different screen colours. On closer inspection, there are several notable changes. For a start, the program greets you personally, the name entered during the installation process. Also, there are a few changes to the menu bar at the top of the screen. Options such as Help, Tutor and Bob Maker are now included - the first two options are the core of *Easy AMOS*. The Help option is provided as a more useful reference tool than constantly picking through the manual. Entering a command in the main edit window and then accessing this option gives an instant description

UPGRADING

Existing *AMOS* owners can get hold of a copy of *Easy AMOS* for a mere £14.99 - although surely anyone familiar with the original is unlikely to want to take what is effectively a retrograde step. Simply send your original *AMOS* program disk with a cheque/postal order payable to Europress Software to: *Easy AMOS* offer, Customer Services, Europress Software Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP. Similarly, *Easy AMOS* owners can upgrade to *AMOS* for only £19.99.

If, however, you are an *AMOS* owner and would like features like the tutor screen, but don't want a copy of *Easy AMOS*, then *AMOS 2*, currently billed as *AMOS Professional* is scheduled to hit the streets at the end of the year. This super-expanded new language will contain all the new features of *Easy AMOS*, along with quite a few surprises.



Original or dummy, why not take the *Easy AMOS* challenge? This set of twenty contains checks you on everything *Easy AMOS* has to offer. Score 100% for a nice surprise...



Allow 'em another stunning *Easy AMOS* game. It's time an *Amiga* world and with all the bells and whistles. What's more, the manual teaches you how to program it!

ADDRESS BOOK

Easy AMOS retails for £34.99 and is available from Europress Software, Europa House, Adlington Park, Macclesfield, SK10 4NP.

exactly what it does and how to use it.

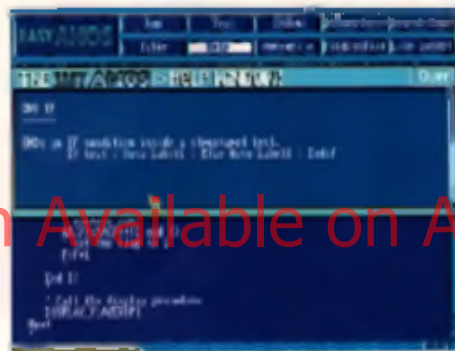
Similarly, the Tutor option takes you to the test/tutor screen, which is unique to *Easy AMOS*. The aim of this is to help you examine *Easy AMOS* programs, and find out exactly how they work and what they do. Laid out as four screen windows, the tutor allows you to run a program using one of three speeds and check, test, debug, or simply watch a currently initialised program. The window in the top-right corner is a shrunk version of the main program screen. In this, you can watch the program running with a reduced display if the current screen is in low resolution, or as part of a screen if it is in any other format.

ICON HELP

The next window is the icon window, positioned to the left of the shrunk screen. All icons necessary to run the program are shown here, and you can scroll around the screen and mark any specific parts of your program you wish to examine. All these windows are accessed via the mouse, and to run the program, simply click on one of the three speed icons. The first moves the program onto the next instruction, whilst the next runs the program at full speed, and the last running it at full speed, it can be stopped by clicking on a stop icon.

Below this are two text windows: one for the current program's line, and the other for relevant information. This could be anything from telling you that the line does nothing (as in a REM statement), to telling you which branch of a conditional procedure call the program is going to jump to, as well as informing the user of the current status of any accessed variables.

As far as I am concerned, the Tutor idea is a stroke of genius on the part of *AMOS* coder, Francis Lionel. It's a huge aid to someone learning programming, and gives them a chance to



Stuck on a word? Clicking on it and on the Help box in the top row gives you instant reference to the commands and tools of *Easy AMOS*.



The *Easy AMOS* tutor in all its glory. At the moment it's working its way through *Tricycle Race*. Note the comments in the bottom window.



Another of *Easy AMOS*'s high spots, the Bob Editor is a huge improvement over the original's. It now holds far much more options and may re-identify icons.

AMOS VS EASY AMOS

Oh, so *Easy AMOS* is a cut-down version of *AMOS*, but what exactly are the differences between the two?

	AMOS	Easy AMOS
Commander	Bob	Bob
Add-in commands	Yes	No
Animation language	Yes, AMAL	No
Debugger Mouse	Yes	No
Graphics/Fonts	None	Bob only
Hardware support	Yes (AMOS)	No
Language	Yes	No
Length 3D	Yes	No
Single Disk	Yes (Limited)	Yes (Advanced)
System Features	No	Yes
Help	Limited	Advanced
Price	£49.99	£34.99

understand why certain routines are written in a specific way. Once that understanding is grasped, the art of programming becomes much more accessible.

CONCLUSION

Don't be fooled into thinking *Easy AMOS* makes programming an easy process. You've still got to put a lot in to get a lot out. *Easy AMOS* basically equips the novice with all the tools you need. The rest is down to you. *Easy AMOS* is an ultra friendly package which can teach virtually anyone the fundamentals of programming. This it does brilliantly, and forms one of the strongest packages I have ever seen.

EUROPPRESS £34.99

Teaches the basics of programming. Perfect for beginners...

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EASY AMOS

...at a glance

- Very User-Friendly • Fast learning curve • Offers impressive tasks to the beginner • Plenty of room for expansion • Stacks of examples

FOOTBALL TACTICIAN

Until now, football simulations came in two categories: arcade and management. Few have ever bridged with the all-important STRATEGY which a successful manager will master both before a match when deciding on squad selection and during the match when high-drama, real-time decisions must be made on tactics, substitutions, set pieces and player deployment. But now for the first time on any major computer platform a superlative management game that encompasses all forms of soccer strategy is called **FOOTBALL TACTICIAN**.

Squad selection, needless to say remains a critical element in any successful campaign and here you will be aided with a wealth of player data never seen in any other program before. Gone are the days when a player was given a single skill level. Each player is now analysed in up to 20 different aspects, enabling you to select the side best suited for the match in hand. And then to the BIG innovation of **FOOTBALL TACTICIAN**: it is on-line, real-time evolution during the match. For the first time ever you will, as a manager, be able to alter your strategy: choose a defensive or offensive system, mark certain opponents, drop back some of your defence if the pressure is tough, decide exactly when substitution should be made, bring the off side trap on for quick counters, etc. With full on-screen commentary and minute-by-minute lead back, you're as involved in the match as any of your players. When you further consider that this game is written in 100% machine code (with scores of other slow-motion offerings which are written in basic), that up to twenty two users can play the game at the same time, that accurate records are kept on all 440 players in the first division, right down to their exact market valuation, that a built-in editor allows you, in change any player's or manager's name, you will realize that this is no ordinary soccer manager. THIS is the REAL THING. You're in charge. You manage your side before and during the match. Nothing is left to chance. Can you rise to the challenge? Try **FOOTBALL TACTICIAN** and prepare yourself for the ultimate football experience.

Amongst the many features: intelligent computer behaviour, lively transfer market ability to replay ANY match of the week with full commentary, three levels of commentary from highlights only to every single ball challenge with all players named, ability to retrieve any feature from the last 21 seasons top scorers chart, friendlies, speed control, twenty player squads including the VERY LATEST transfers, not up to this very week, full European Cups program with every single European player accurately named, selectable positions, automatic and intelligent substitutions by computer opponents based on player fitness, fatigue and tactics used, computer opponents will automatically change tactics to respond to situation on the field, ability to utilize tactical advantages any extra memory fitted, and many more.

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Printers Buyer's Guide

hubble

Choosing the right bubblejet printer is a difficult task. John Mallinson is here to help you make that all important purchasing choice.

HOW WE SELECTED THE PRINTERS

Buying a printer these days can be a pretty confusing affair. There are so many types to choose from — from dot matrix to Bubblejet, daisy wheel to thermal transfer — and when you add to that the huge variety of features on offer and the vast differences in price, it's not surprising that many consumers don't even know where to begin.

Our companion test is designed to bring you practical, objective information on Bubblejet printers, which are increasingly popular because of their high

print quality, lack of noise, and general value for money.

The printers we've selected are divided into three price bands. These are based on the manufacturers' Recommended Retail Prices and are intended as a rough comparative guide. If you shop around, you can expect to pay at least a third less. Each printer was tested with several programs to gauge how well it worked with standard Amiga software, its ease of use, speed and the quality of print.

Hi Quality Versions Available on AMIGALAND.COM

BUDGET PRINTERS — UNDER £400



Three of these machines are built around the same Canon print mechanism, and one is based on the HP DeskJet. They are all priced under £400 and can be considered basic models, but nonetheless reliable ones. Next month we'll take a look at more expensive models.

bubble



Canon BJ10ex The 'original' Bubblejet still gives value-for-money

When it was released in 1990, the BJ10e was the first really high-quality portable printer, and it hasn't been beaten yet. The 10ex (with Epson LQ compatibility) went on sale this year. A modified version of the original, it uses a 64-nozzle print head which produces 360 dots per inch (dpi).

Neat, sleek, and cleverly designed, it is just over A4 size and two inches thick, so it fits easily into a briefcase. Its normal working position is sitting flat on the desk; the top opens to reveal the paper-feeder slot for single sheets and to provide a rest for the paper as it emerges. It can also stand vertically, supported by a flip-out foot, so that you can attach the optional sheet feeder or print envelopes through their own direct feeding slot. Envelope printing works very well, and although the feeder only takes 30 sheets, it really is essential for any but the most occasional user.

You can run the machine from the external transformer which comes with the printer, or from the (optional) rechargeable battery pack which fits internally. Battery life is good for about 40 sheets after a 10-hour charge. There are five push-buttons on the front to control paper positioning, print quality, and size. Some have two sets of functions, so it can be confusing finding out which set is opera-

tive—a few more indicator lamps would help here. The printer has two basic emulation modes: Canon Bubblejet (BJ) and Epson LQ, and with the former you can select either Canon or IBM compatibility. The printer works well in either mode, but there are significant differences—especially when you come to print graphics. You make print mode changes and various other settings with DIP switches inside the machine. Unfortunately, the manual, like most, fails to explain properly the use of DIP switches.

The two print qualities, High Quality and Economy, are produced at the same rate, but the second uses less ink. Both give good-looking and legible print. There are four built-in typefaces, but you can't use all of these at the same time. If set to BJ mode you get Courier and Prestige, which in Epson mode you get the more attractive Roman and Sanserif faces (the latter are functional faces like the one used on these pages). BJ mode allows two unusual features: printing in reverse (white characters on black), and printing onto a shaded background; but for reasons best known to Canon you can't print in italics. In Epson mode you can print outlined or shadowed characters and italics.

The print quality is excellent. To the naked eye it looks almost professional, and it is only with a magnifying glass that you can see that character outlines are a little irregular. Graphics printing and DTP output in Epson mode are disappointing; here, BJ mode is distinctly superior in speed and quality.

This is an amazing little machine, especially when you remember that a couple of years ago a dot matrix printer with much inferior print would have cost about the same.

VERDICT

'The first of its kind and still not surpassed'

DESIGN	95%
CONSTRUCTION	78%
EASE OF USE	77%
PRINT QUALITY	80%
SPEED	61%
FLEXIBILITY	64%
INSTRUCTIONS	65%
VALUE FOR MONEY	92%

OVERALL 75%



Excellent quality graphics made possible from the BJ10ex. While it's good enough for small-scale DTP work, it's too slow for major professional use.

Canon BJ10 Roman char Sans serif Draft mode Italics, b Outlined

The Canon BJ10ex produces good quality Courier and Sanserif typefaces, or distinguished proportional Roman defaults for letters probably not enough variety for complex reports.

SMALL PRINT

PRICE (RRP ex VAT): £345
INK CARTRIDGE (700,000 CHARS): £17.99
RECHARGEABLE BATTERY PACK: £39.99
SHEET FEEDER (30 SHEETS): £54
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AMERICAN FOOTBALL COACH

on the Amiga (1 Meg only)

"AMERICAN FOOTBALL COACH is a good game.. It's certainly worth a look as the game play is superior to many full-blown simulations. I'll end by saying that it's extremely tough to have a winning season because the AI (artificial intelligence) definately plays hardball. Are you tough enough ?"
REVIEW...STRATEGY PLUS ISSUE 16...FEB 1992.

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NEW *** DIVISION ONE 92 REVISION ONE *** NEW



DIVISION ONE 92 REV 1

"(The Midnight Oil) treat soccer in the sophisticated way Americans treat their national games." -The Guardian

THE GAME Everyone has their own ideas on what makes a soccer team "tick". Here is the opportunity to put your own view into play. Operating from the English 1st division you must build a squad to challenge for the league title, the FA and League Cups and the 1 European trophy. And as players age rebuild the team while holding off relegation.

SQI ADMINISTRATION MARKET In a 3 squad system (1st team squad, reserve squad and youth squad) use the continuous intake of youth players and training program to create a squad whose skills reflect your ideas. Supplement these skills with carefully selected transfer market acquisitions. As they age, veterans fade and youngsters develop. Keep an eye on the changing skills of your team.

SKILLS All players have a balance of 5 skills (an "skill levels") which you must develop by experimenting with your team. Even more important will be your judgement about the effect of the particular team balance or skill combination on the outcome of the match, and subsequently a season of football. Realistic training can develop/restore skills.

WHAT IS DIFFERENT ABOUT THIS GAME?

Division One 92 transforms the soccer game into a strategy game. You can concentrate on the football. Experiment with players, formations, team styles. Build your dream squad and check it out in accurately simulated league football. Match results are from a unique stage match. Every goal, tackle, shot etc is documented by the players involved. Your choice of skills then influences match results. Manual arithmetic has been changed. Football knowledge is the essence of the game.

MATCHSTATS Your judgement will be put to the test in this unique 4 minute match/stat simulation system accurately simulated opposition. This is the register of your team and your most reliable source of information. There are displays of match flow, two teams, plays with the ball, injuries, disciplines, substitutions in match tactics, goal scorers, possession breakdown and performance assessment.

REVISION ONE

The best just got better! All updates that have been made to Division One 92 over the last six months. In addition the match screen has improved, opposition team info is provided, a European transfer market added and a few more team changes. An edit program and a customisation program have also been added. The manual has been reworked and the packaging improved.

EDIT PROGRAM Edit the team and players that make up Division One. Produce your own Division One, in Scottish League, British League, European League, German/Spanish/French/Irish etc... etc. Or you can make up a league of all the two teams you never see.

CUSTOMISATION PROGRAM Customise the 25 man starting squad. List your own favourite players, in your local side. How about an squad with Pole, Backstrom, Best, Cruyff, Maradona...?



HEAD COACH V3

"When it comes to the best computer football game it's 'Headcoach', 'TV Sports Football' head to head.

(Pop Camp.)

Headcoach V3 has been described as "the best game ever put onto a computer". It is the ultimate computer football game. A total computer with the very best strategic elements of the real thing. You will not find a game so close to the real thing until you play it.

Use the first season (1978-79) as a guide. 16 regular season games, 16 cup games - this is to discover your 43 best man of players. Then, repeat the college club to improve the team and expand your game play to test... the very best the NFL can throw at you.

Players will age and teams will fade so players will test about it seriously, but you will stay and rebuild...

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hubble bubble



Brother HJ100i

Can a younger brother outperform its elder?

This is essentially the same machine as the BJ100a. Whether you buy this or the Canon really depends on your preference for cream (Brother) or battleship-gray (Canon) plastic. The switches on the control panel are also slightly different.

Its printer emulations are the same, although the Bubblejet mode here is called HJ100i mode. The internal typefaces have been changed, and the Brother's Roman typeface is more pleasant than the rather blocky Canon version. The Brother also allows a small print size which gives a maximum of 180 characters across an A4 page as against the Canon's 138 (useful for spreadsheets).

As you might expect, overall print quality and speed are exactly the same as the BJ10's. The manual is obviously based on Canon's but is differently arranged and easier to read.

Brother HJ100i

Roman character
Sans serif
Draft mode
Italics
Outlined
Shadowed

The Brother HJ100i's Courier and Serif fonts are identical to the BJ10's (the Roman is better formed, though still rather cramped).



The HJ100i's graphics are excellent and are indistinguishable from the BJ10's.

VERDICT

Get this printer or the Canon - it's really a matter of taste!

DESIGN	85%
CONSTRUCTION	86%
EASE OF USE	85%
PRINT QUALITY	88%
SPEED	60%
FLEXIBILITY	61%
INSTRUCTIONS	59%
VALUE FOR MONEY	93%

OVERALL 75%

DETAILS

SMALL PRINT

PRICE (RRP ex VAT): £345
 INK CARTRIDGE (700,000 CHARACTERS):
 £17.99
 RECHARGEABLE BATTERY PACK: £39.99
 SHEET FEEDER (30 SHEETS): £54
 CARRYING CASE: £39.95
 TEL: 071 387 5060

FOR INFO

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Star SJ48
Roman character
Helvetica
Draft mode
Italics, *b*
Outlined

The Star SJ48 offers only two typefaces. Roman and Sans serif are very similar to the BJ100's.



The SJ48's graphics and DTP print-outs are disappointing compared to the other two Canon-type machines, they were slow, with clogged-up grey tones.

Star SJ48

The Kings of the dot matrix enter the Bubblejet arena...

All printers may well have been created equal, with the SJ48 being yet another re-working of the BJ10 theme, but Star has given the SJ48 a slightly different control panel and a paler shade of grey. The machine was the only one supplied with a sheet feeder, which also worked well on the Canon and Brother. The feeder is easy to fit and remove and has a slot in the back so that you can still print envelopes while it's in place - this doesn't exactly make it the Aston Martin Legends of Bubblejets, but it's well worth the £54 optional extra tag.

Something that will ruffle your hair, though, is the odd decision on Star's part not to give the SJ48 a Canon Bubblejet mode: instead it just uses Epson LQ or IBM emulations. This is fine when printing text, but the Epson 24 pin graphics printing is slow and the results aren't as good as the BJ mode on the other machines.

The Star's manual is comprehensible though - which will come as a relief to anyone buying a printer for the first time who wants to just plug it in and get going.

SMALL PRINT

PRICE (RRP ex VAT): £345

INK CARTRIDGE (700,000 CHARACTERS):

£17.95

RECHARGEABLE BATTERY PACK: £39

SHEETFEEDER (30 SHEETS): £54

TEL: 0494 471111

PREDICT

Let down by poor graphics printing, otherwise excellent'

DESIGN	80%
CONSTRUCTION	82%
EASE OF USE	81%
PRINT QUALITY	84%
SPEED	61%
FLEXIBILITY	56%
INSTRUCTIONS	78%
VALUE FOR MONEY	92%

OVERALL 70%

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hubble bubble



Olivetti JP150

An alternative look can be deceptive...

Quite a different machine from the others in this group. If you sawed the print trays and control panel off an HP DeskJet you would end up with the JP150 — a slightly over-sized grey shoe box based on the HP print engine.

The top of the box opens up and extends to form a paper rest. The front flaps down to make a rather inadequate shell for loading single sheets which you poke in through a slot. As with the Canon BJ300 there is only a single paper guide here so it's fairly easy to put the paper in crooked.

The machine seems very underpowered in terms of bells, whistles and flashing lights with only a power switch and three control buttons. But just wait until you look inside. There, in a row across the machine, are 33 (round em) selectors — all much bigger and easier to use than other printers' DIP switches which they replace. My initial reaction was one of horror, but on second thoughts this arrangement actually makes the printer simpler to use than most. There is a fashion to have lots of buttons and flashing lights on printers nowadays (as on hi-fi systems), but many of them are unnecessary, and may just confuse the user.

The JP150 has three typefaces, Courier, Times Roma and Letter Gothic (Sanserif) which are

handsome examples of their kind. The Courier can be used in either portrait or landscape orientation, but only at one size (12 point), the other two can be printed at 6 or 12 points.

There is one slot which accepts cards for extra fonts, memory, or added emulations. Another more essential extra is a cut sheet feeder which holds 70 sheets and fits under the machine — unfortunately several urgent calls to Italy didn't get one for us to test.

The Olivetti's HP emulation makes it work with any Amiga application that has a DeskJet or LaserJet printer driver. In its best quality printing mode it's slightly slower than the other three in our budget group, but has a useful draft mode which is much faster. When printing from First Word there was a 30 second delay before anything happened. This did not occur with Protex, so it must be a printer driver problem.

Easy to use, despite the clumsy single sheet feeding arrangements, this printer is very compact and quiet. Don't be put off by its rather dull external appearance.

SMALL PRINT

PRICE (RRP ex VAT): £339
 INK CARTRIDGE (700 000 CHARACTERS):
 £14.50
 RECHARGEABLE BATTERY PACK: £69
 SHEET FEEDER (30 SHEETS): £90
 FONT CARDS: £61.90
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 TEL: 081 785 6666

Olivetti J
 Courier
 Times Roma
 Letter Gothic
 Draft mode
 Italic, bo

The Olivetti JP150 offers the best typefaces in this price range. A large range of extra font cards makes it pretty versatile, but at even a minute a page has a still a bit slow for the office.

Hi Quality Version Available on AMIGALAND.COM

'Definitely the best of the budget printers we tested'

DESIGN	84%
CONSTRUCTION	89%
EASE OF USE	82%
PRINT QUALITY	80%
SPEED	79%
FLEXIBILITY	82%
INSTRUCTIONS	83%
VALUE FOR MONEY	95%

OVERALL 80%



The JP150's graphics are of very good quality for its size and price. It's also a DTP workhorse.

GROUP SUMMARY

None of these four are heavy-duty printers, nor are they fast: they're excellent for letters and so on, but not really designed for long print runs or lengthy documents. You will find print quality good enough for small volume DTP work.

Canon recommends a work rate of 100 pages a month, and the ominous sounding MTBF (mean time before mechanical failure) is reckoned to be 6,000 pages — this would apply to the Brother and Starlec. Olivettis give an MTBF of 10,000 pages. By comparison, a laser printer at five times the price is designed to cope with 16,000 pages a month!

All three Canon-type machines are very compact and portable, cheap and good value for money. The differences between the Canon and Brother are very minor: the former looks more handsome, the latter has a better Roman font. The Starlec's disappointing, slower and not-so-

good at graphics printing; even having a manual that I could understand doesn't make up for those deficiencies.

The Olivetti shoebox is also small enough to be moved around (or put away) easily, but, without a battery option, can't be considered a truly portable printer. Single sheet feeding is not as easy as with the others — it really needs its sheet feeder. It has the best internal typefaces, a landscape printing option, you can expand its internal memory, and add more fonts. Although graphics printing is at 300, rather than 360 dpi the quality is as good as from the others, a though output is slower.

hubble bubble

Comparison Table:

At the end of the day how do the ten bubblejets compare?

Printer	Canon BJ10ex	Brother HJ1001	Star SJ48	Olivetti
Size in cm (h,w,d)	4.75, 31, 21.6	4.75, 31, 21.6	4.75, 31, 21.6	11.5, 34.2, 14.7
Weight (kg)	1.8	1.8	1.8	2.9
Resolution	360dpi	360dpi	360dpi	300dpi
Memory	37K	37K	37K	8K
Emulation 1	EP, I, C	EP, I, C	EP, I	HP, EPX*, I*
Typefaces	4	4	4	3
Paper Feed ²	SS, SF*	SS, SF*	SS, SF*	SS, SF*
Interface ³	P	P	P	P
Memory Cards	N/A	N/A	N/A	128/256K
Font Cards	N/A	N/A	N/A	15
Speed (CPS) ⁴	83	83	83	80/160
A4 Text Page	1'23"	1'21"	1'22"	1'06" /44"
DTP Page	3'35"	3'15"	3'47"	4'09"
Graphic	1'04"	1'05"	1'14"	1'03"

* Optional extra

1 HP=Hewlett-Packard DeskJet/LaserJet, EP=Epson LQ, EPX=Epson FX, I=IBM Proprinter, C=Canon Bubblejet

2 SS=single sheets, SF=sheet feeder, TR=tractor

3 P(parallel), S(erial), L(localtalk)

4 Manufacturers' rating

How does a Bubblejet work?

Bubblejet and dot matrix printers (DMP's) both produce copy as a series of very small dots on the page. A DMP does this by firing needles from the printer head at the paper through a ribbon, the Bubblejet by spitting out minute ink droplets...

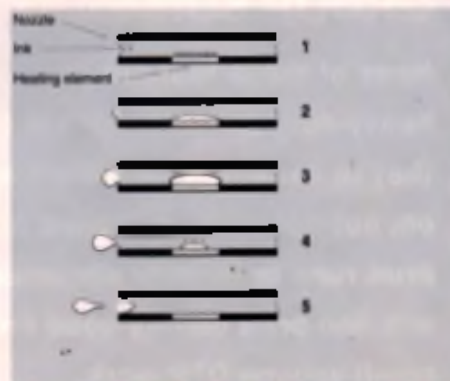
The story goes that a scientist in Canon's labs in the early 70s touched a hypodermic needle with a soldering iron and noticed that ink splattered out of the needle. 15 years later, this led to the first thermal Bubblejet printers.

The print head has a vertical row of up to 64 nozzles, each finer than a human hair, fed from an ink reservoir. In the wall of each nozzle is a resistor which heats up to 300-400°C when a pulse of electricity is sent to it. The ink vaporises (1) to form small bubbles, which merge into a larger one (2,3), and set up a pressure wave that forces a blob of ink out of the end of the nozzle (3,4,5). The vapour bubble contracts as it cools and more ink is sucked from the reservoir into the nozzle. This cycle can repeat itself about 4,000 times a second with no moving parts to slow things up. Compared to older Bubblejet printers, this 'thermal

Bubblejet' technique (called 'Bubblejet' by Canon) is faster and much more precise. Most machines have a single ink which contains both the ink reservoir and print head, so both get replaced at the same time.

Bubblejet manufacturers used to make claims such as "Laser printer quality at dot matrix price". I haven't seen that written for a while, which is probably because it's not true. The print quality of these machines is very good indeed, but not as fine or sharp as on a decent laser. The print resolution (number of dots per inch) may be the same or higher than on most laser printers, but the dot size is larger and the edges of characters or lines are slightly rougher.

Inkjets used to need special paper. They don't these days, although it's still worth experimenting with different weights and surfaces.



Blowing Bubbles... How A Bubblejet Works

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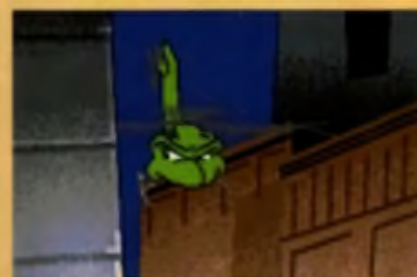
AMY vs WALKER 2

animation

Eric Schwartz is recognised as one of the definitive Amiga cartoon animators. In this month's free animation supplement we guide you through his best animation to date, *A Day at the Beach*. But for now, just to whet your appetites, here's another example of his current work. *AVW 2* is the sequel to the popular 1990 flick, *Amy vs Walker*. In the first demo Amy simply chased a miniature Walker from the film *The Empire Strikes Back*, around an Amiga. It was short, but a significant example of what Eric can do. The latest opus is very different and is more film-like. The luckless Amy is sent diving for cover as a huge metallic monster's foot comes crashing down right next to her. In a fit of anger she manages to staple one of the beast's feet to the ground. The Walker tries to move and tumbles over, but doesn't give up the fight. It emits one last laser barrage before Amy scurries for cover.

Disk no: 1664A&B Available from: 17 Blk 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 368862

92%



DIGITAL DISCO 2

music demo

Yet more musical madness from our crazy whacked out Finnish friends. *Digital Disco 2* by D.J. Joge doesn't break down any barriers in terms of originality, but the tunes are aimed at a more relaxed form of enthusiasm. The Finns still haven't overcome the language barrier and insist on forcing you to read their insane Finnish before you can play any music, which is a pity, as by the time you've waded through the gobbledygook, you're too worked up to

listen to the Richard Clayderman-esque tracks.

Disk no: 2400 & 2401 Available from: PDSoft, 1 Bryant Avenue, Southend-On-Sea, Essex SS1 2YD Price: £2.50 (including P&P) Tel: 0702 48883



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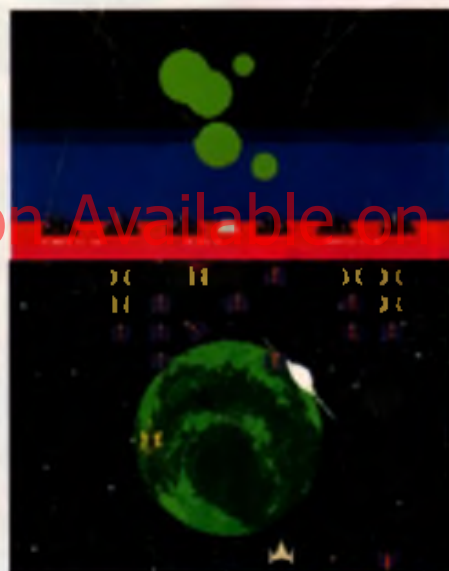
DRAGONLORD

arcade game

Dragonlord have put together a brilliant collection of some of the greatest games to have graced the home computer world. None are spectacularly polished as the emphasis has been firmly placed upon game-play. The seven games include six *Galaxians*, *Astarians*, *Missile Command*, *Galaga*, *Stigma Line*, *Bully/Zillyx* and, of course, the timeless *Space Invaders*. If you've always wanted to get an oldies compilation, get this one. Relive the memories and wade in the nostalgia of classic video game heaven.

Disk no: 1724 Available from: 17 Blk 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 368862

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RAVE HARD

music demo

Mega Master return to the big computer music scene with a sample aptly entitled *Rave Hard*, because that's exactly what their disk does. The tune will appeal to those of you with a limited understanding of chord and note structure and matching IQs. If you're turned on by this monotonous drive you deserve this disk but it did nothing for me. The sample was put together by John Hodgson and is not the best example of his work. A far better rendition of 'music' can be found on his other disk *No Screamin' Women*. Repetitive music persists, but it is rescued from mediocrity by some weird and wonderful sampled speech that will keep the eyelids open.

Disk no: Rave Hard Available from: NES 133 Quayville Road, Newport, Isle of Wight, PO30 5LN Price: £1.75 (including P&P) Tel: 0983 828884

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IT'S A FINE DAY

music demo

Those overworked brothers-in-arms, The Two Toms, have two new sampled disks out this month. As excellent as ever, their first is a cover of Opus III's 'It's a Fine Day', with an appropriately dreamy scene for you to peruse whilst the sonics wash over you. However, the real star is their version of the Army Of Lovers 'Obsession' track. Even if you hate the group's camp exploits you can't fail to be impressed by the Toms' quality. There's no one in the music sampling world who comes close.

Disk no: 1725A&B (It's a Fine...), 1726A, B&C (Obsession) Available from: 17 Blk 1st Floor Offices, Wakefield, WF1 1DH Price: £1.50 per disk (including P&P) Tel: 0924 368862

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1. Competition not open to EMAP or PD SOFT employees
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4. This is a two-part competition and one coupon from both the MAY and JUNE issue of CU Amiga are necessary to enter

QUESTIONS

Please answer the following multiple choice questions and keep your answers safe until next month's selection.

1. Eric Schwartz, famous for his Anti-Lemmings Demo and assorted animations, lives in which country?

- A. England.
- B. Denmark.
- C. USA.

2. What is PD software?

A. Free software, placed in the Public Domain, with the copyright remaining with the original author.

B. I've no idea, but let me win the competition anyway because I'm such an imbecile.

C. Incredibly expensive software that no one in their right mind would buy.

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(MB) AU.39* Apparent: amazing! 3D film of 2000 Enterprise striking USS Intrepid AU.44 Laurel and Hardy: Film (2D) AU.45 Star Trek: Dry Dock Demo: The highly praised Ray Trace animation AU.46 Slightly Miscevous 11: Danpen AU.50 Subbrain Demo 2: A Classic! AU.54 Simpsons: Digitized! Do The Barman plus great Bart show! (MB) AU.58 Appicus: Ray Traced (MB) AU.59 Planemates 91: Truly Amazing! AU.61 Franklin Fly: Very Amazing (MB) AU.62 Dating Game: by Eric Schwartz, very amusing animation (3MB 2D) AU.63 Batman, Terminal & Late Night: Three great Eric Schwartz anims (MB) AU.64 Shuttlecock: E. Swartz (MB) AU.65 Stealthy Animations: 3 Great Eric Schwartz animations (MB) AU.66 Substance by Quarter: Fractals, 3D anims, Ray Trace Subtitle AU.70 Global Trash by Silents: Ray Traced Space Ship, Plasma effects AU.71 Ice Megademo by Silents: (?) AU.72 Simpsons: Best Bart one yet! AU.73 Success Simulator: Tude noises, water, swimming, Hulk Hogan, water AU.74 Ultimate Warrior: Hitman & moly moly AU.77 Digital Impression: 30 minutes! AU.78 Filled the Fish: Great cartoon AU.80 Light Animations: Ray Trace 2D AU.81* Am'zmo: 3D Demo (MB) AU.82* Am'zmo: 3D Demo (MB) AU.83* Am'zmo: 3D Demo (MB) AU.84* Am'zmo: 3D Demo (MB) AU.85* Am'zmo: 3D Demo (MB) AU.86* Am'zmo: 3D Demo (MB) AU.87* Am'zmo: 3D Demo (MB) AU.88* Am'zmo: 3D Demo (MB) AU.89* Am'zmo: 3D Demo (MB) AU.90* Am'zmo: 3D Demo (MB) AU.91* Am'zmo: 3D Demo (MB) AU.92* Am'zmo: 3D Demo (MB) AU.93* Am'zmo: 3D Demo (MB) AU.94* Am'zmo: 3D Demo (MB) AU.95* Am'zmo: 3D Demo (MB) AU.96* Am'zmo: 3D Demo (MB) AU.97* Am'zmo: 3D Demo (MB) AU.98* Am'zmo: 3D Demo (MB) AU.99* Am'zmo: 3D Demo (MB) AD.01 Deluxe Paint: Quality pictures AD.02 Professional Art: Ready to load AD.04 PF Alphabets: Over 30 powers AD.05 Animals, Anatomy, Buildings AD.06 Cartoons, People, Animals AD.07 Holidays, Flags, Flowers etc. AD.08 Music, People, School etc. AD.09 Signs, Titles, Logos, Headings AD.10 Tasty Bears: Lots on labels etc AD.11* Colour Illustrations: Transport, Signs, Electrical, Architecture AD.12* Fruit, Vegetables, Kitchen AD.13* Women, War, Boys, Girls, Babies AD.14* Cartoons, Animals, People AD.15* Alphabets: 50 different AD.16* Amigos, Brothers, Start, Mailed AD.17* Seasonal, Occasions etc. AD.18* Business, Cars, Sport, Trade AD.19* Art Demo, Headings, Herbs AD.20* Exitte Fonts: Lots of styles	SND.01* SOUNDTRACKER: MULTICROSSO SND.02* Soundtracker 1 Tracker: Superb! 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PD SCENE

GARFIELD

slideshow

Own up! Who still buys the Daily Express just to read the Garfield strip? If you're one of the many fans of the cuddly feline with the razor-sharp claws, then you could do worse than pick up a copy of the new Garfield-based disk. There's a huge collection of hand-drawn Garfields in Hi-Res mode, with 22 separate screens depicting over 40 different

renditions of the orange error. The drawings are in black and white and almost identical in style to the Jim Davis originals, suggesting that they are most definitely copied from his comic book strips. If you're a fan, like me, you won't want to miss this excellent disk. Personalities cannot be bought, but they can be drawn!

Disk no: 1723 Available from: 17 BH, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366882



AGATRON SLIDESHOW

There are two things that get the CU PD office back excited. One is the arrival of a new Eric Schwartz demo and the other is loading up the latest offering from PD giant, Tobias Richter. The German maestro has come up with yet another impressive slideshow of upcoming animations, this time featuring graphic screens based on the Star Wars trilogy of films. There are more than 12 ray traced pictures of the various models used in the movies with appropriate star-scaped backgrounds. The collection is presented with Mr Richter's usual quality and is split into three sections: The Empire, The Alliance and Action. All the memorable space craft are represented ranging from the Alliance's X-Wings to the Empire's TIE-Fighters. There are no fillers here and although the pictures are static they are so dynamic that they seem to thrust off the screen. Every picture looks as though it has been lifted from a film still and even though Tobias covers the craft in extreme detail he always leaves us wanting more. Fantastic stuff!

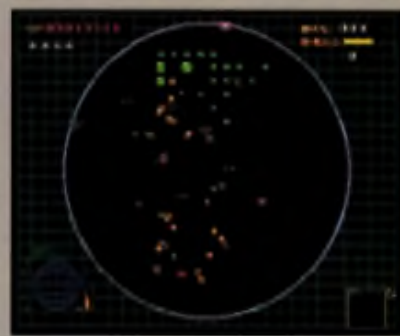
Disk no: S019 Available from: Prologic PD, 81 Middleton Hall, Kings Norton, Birmingham, B30 1AG Price: £1.25 (including P&P) Tel: 021 458 2404

ASSASSINS VOLUME 20

arcade game

Hiding amongst a small collection of average PD games, there's a non-siduous arcade shoot 'em up to be found. *Microbes* is a mixture of puzzle and blasting as you pilot a space craft that races around the circumference of a large circle blasting microscopic amoeba that are constantly splitting and creeping towards the edge. The alien spawn multiply everytime you hit them with your laser and creep from the centre of the circle until they escape from the line of fire and deplete your shields. It's a great PD game and rivals *Tamatron* for best shoot 'em.

Disk no: 1748 Available from: 17 BH, 1st Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366882



game of THE MONTH

91%

CRAZY SUE

platform game

Yet another hybrid game sneaks onto the PD circuit. At first glance *Crazy Sue* looks like a cross between *Mario* and *Rainbow Islands*. A small girl sets out from her house armed only with a gold pepper mill on overhauling an evil wizard's rule. On her journey, it's necessary to travel through the monster infested forest before getting to the Sage's castle on the other side of the wood. The cetera provided throughout would not look out of place in a commercial game release. Sue waddles along like a toddler with her golden pony-tail flopping in the wind behind her and, when touched, her sprite transforms into an angel to float up to Heaven. The monsters are not characterless either. They pulsate and undulate in an atmospheric manner whilst others speed onto the screen in whirling dervish Tasmanian Devil fashion suddenly freezing to reveal their true identities. Each level necessitates locating a key to proceed and contains multiple points, coins and pick-ups. The game is only let down by the terrible tune, but if you really can't afford to miss this great game.

Disk no: 2122 Available from: Nibus Free PD, 23 Elboweigh Street, Swinton, S22 2LS Price: £2.00 (including P&P) Tel: 0793 512321



87%

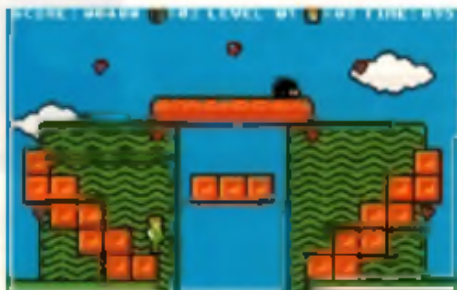
PETER'S QUEST

platform game

In the early days, games magazines got more enquiries concerning *Mario*'s conversion from the Nintendo to the Amiga than anything else. Although that'll almost definitely never happen (except for the upcoming educational software from Mindscape) there are still plenty of games out there that come close. *Peter's Quest* is one such game and although the game-play differs significantly it certainly looks the business. Background scenery, blocks and animals included in the world could all have been lifted from the console adventures. Even the main sprite, Peter, wears identical overalls to those of the Italian plumber. However, this is where the similarities end, as most of the hero's functions are not nearly as fluid or comprehensive. Peter must retrieve as many hearts and coins from 'Mario Land' as possible so that he can rescue his girlfriend at the end of the 20-level world. The coins can be found inside certain blocks, but instead of being released by a quick bonk with the head, they must be located by crouching down and searching manually. Collected coins can buy certain goodies from an end-of-level menu. These range in price and usefulness, and some of the gifts available include jet packs, extra lives and super jumps. Although lacking the superb quality of the *Mario* series of games, this is great value for money and tremendous fun. If a little more attention had been paid to the main sprite's manoeuvrability and collision detection this could have been the best PD game for years. All is not lost, though, as there have been at least four revisions of the game already and hopefully the American programmer, David Meny, will go back and iron out these problems and come up with a true classic.

Disk no: 2306 Available from: PDSoft, 1 Bryant Avenue, Southend-On-Sea, Essex SS1 2YD Price: £2.50 (including P&P) Tel: 0702 466933

80%



PD TOP TEN

- A-Animation S-Sound U-Utility
G-Game M-Miscellaneous
- 1 Amy at the Movies II A
 - 2 Amy vs Walker II A
 - 3 Smash Tally! G
 - 4 A Day at the Beach A
 - 5 Lemmingoids G
 - 6 Crazy Sue G
 - 7 Shamen Remix S
 - 8 Colours M
 - 9 Quadrig G
 - 10 DragonLord G

Compiled by CU Amiga

89%



PD SCENE



TORNADO

It's strange, probably boring, but very true. Although we receive slideshows including every form of transport known to man, I can't recall having seen one that featured lighter aircraft. The pictures aren't brilliant, but possess a certain atmosphere and attraction for those who like to study all things military. For anyone who has thought of flying off into the wild blue yonder, or just finds planes interesting, this could be a worthwhile disk to checkout. However, if you're the type who thinks plane fans run a close second to train spotters in the 'In need of psychiatric help and 40,000 volts up the hum, join a later department, this disk will be worthless.

Disk no: 1786 17 Bit, 1st floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH Price: £1.50 (including P+P) (Tel:0924 366982)

72%



REAL THINGS

animation

Real Things is a collection of disks providing pre-drawn animations of professional quality. They include animals, people and objects expressly for use in demos and any other application you care to put together and see it to exploit the software with. Here we have a few examples of the kind of thing you can expect to find on the full-priced product. A few horses gallop and trot through forestry and pools of water. Pretty accomplished stuff all things considered and the beasts are very lifelike. However, they only last a couple of seconds before they loop. Unless you're going to make use of the software by bringing them into your own demos there's not much point in owning this, or indeed the commercial package either.

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78%



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BRIAN BOLLAND SLIDE SHOW

slideshow

It's been a long time coming, but at last someone's seen the sense in putting together a collection of pictures by Brian Bolland. Brian's work is well known to comic book fans who've followed his career from early works as Fantasy Unlimited, Britain's first comic fan magazine. However, his first contact with fame came when he joined the 2000 AD team to draw the manic, futuristic cop, Judge Dredd. He's now so popular that he rarely has time to scribble a complete strip and fills his time drawing covers from such diverse podiums as album covers and Time Out magazine. Most will have seen his classic cover for the Batman/Joker comic book novel, The Killing Joke, and is included on the disk. All the pictures are digitised and although they are not particularly fine examples of the process, or indeed Bolland's work, they warrant more attention than many other comic slideshows I could mention.

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VIKING SAGA

demo

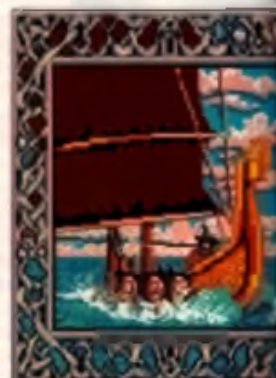
It's the 'Strangest Demo Of The Month' award time, and this is about as strange as they get. Viking Saga concerns, not

surprisingly, an early segment of history from the nomadic warrior tribe, and tells of how they came to rest on our shores. With a mixture of animation and text, the quality of the demo wavers between the highly effective and the

extremely inadequate. However, it's presented with a certain Celtic charm and, although short, won't disgrace anyone's collection.

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75%



PD UTILITIES

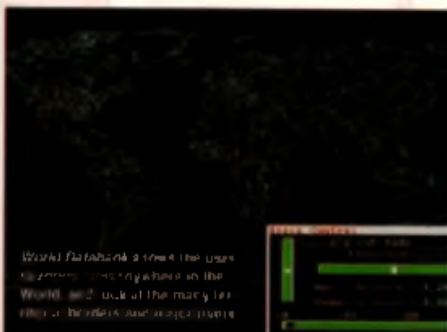
SHERLOCK DOCUMENT ANALYSER

Like its legendary namesake, *Sherlock* is going to become renowned for its deductive powers. Simply by giving the package two documents to examine, it can determine whether they were written by the same person, faster than Holmes could say 'Elementary'. The way the program works is to use a given document for comparison and for the user to feed other 'mystery' documents into the machine. After this has been done, the machine will creak and groan for a few seconds, before churning away for a while comparing letters within the two documents. After a while, it will produce a number – the 'Difference Index' – and the the

lower this is, the more likely it is that the mystery document was written by the same author.

It works by splitting the documents into pairs of letters, and comparing how often certain pairings are repeated. As most of us have an individual style and grammar when writing, letter pairs occur at different frequencies in our work, and it's this individuality that enables *Sherlock* to come up with accurate results.

The larger the text file, the more accurate the results, and to increase the accuracy further, disputed documents can be compared against a number of control files. Michael Cox, *Sherlock's* programmer, says that the process is even more



accurate when performed using letter triplicates. But the required text file would have to be so large that it would be impractical. As it is, he suggests text files of at least 10K be used to produce meaningful results. *Sherlock* runs from CLI, and uses a single command with two arguments which represent the names of the control and disputed files. Using it to process two documents totaling roughly 80K took a little under five minutes, at the end of which I was presented with a three-digit number.

In an all new, greatly-expanded PD Utilities section, Mat Broomfield brings you an in-depth look at the latest mouth watering goodies to his the Public Domain scene.

On running several examples of my work as the control documents comparing them to other peoples' work resulted in numbers in the mid-200s. However, comparisons of my stuff generated numbers averaging 150 – so it seems that the program works!

Unless you're planning to be a secret agent, this program doesn't have much practical use, but it's certainly interesting to tool around with! Incidentally, also on the same disk is *World Database*, a map-drawing utility which will draw you a map of anywhere in the world, at any magnification, complete with national borders and major rivers. Simply enter the required longitude, latitude, and zoom factor, and it'll do the rest automatically. Unfortunately, you cannot print out the results, and the amount of detail doesn't increase with the magnification, but it's an interesting program nevertheless.

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80%

MOG MOLECULAR CREATION AND DRAWING PACKAGE

Imagine the scene: a lanky B Movie spaceship is under attack from a weird rubber monster. As the green-painted Margold rubber glove pushes through the craft's doors, the rugged Captain rushes to his computer screen and calls up a series of pictures featuring molecules on them – vial! – invasion over! Thus, if you're having problems with rubber nasties, then banish them away with *MOG* – the *Molecular Graphics Generator* which can display those all-important graphics.

Tacky scenarios as well can also generate representations of real molecules.

Over the past hundred years, Scientists have come to realise that creating a visual representation of complex molecules can greatly aid their understanding of the interaction between its different elements. At first these molecules were created by joining plastic balls together with sticks, but the advent of powerful graphic workstations meant that computer-generated versions could be easily created – and are much easier to manipulate than their plastic counterparts.

MOG allows the creation of protein and organic molecules, and provides the would-be Space Commander with a number of basic building blocks to do so. In 'create' mode,

molecules are shown as convoluted wire-frame structures, the vertices of which represent the binding amino acids. By clicking on a vertex you can find out the specific amino acid used at that point. Bonds can also be created or broken, to create new molecules.

Once a molecule has been defined, it can be freely rotated across any plane, or altered in size. If you're happy with its aspect, you can then create a ray-traced or simple representation, which can be saved as an IFF screen. Unfortunately, as this is just a preview version, the rendering options have been disabled.

For most people, this will do nothing more than



MOG's molecules can be manipulated within the 3D space. In addition, it can also create a basic understanding of how they work.



Molecular modelling can be an art form in itself, as these excellent ray-traced examples show.

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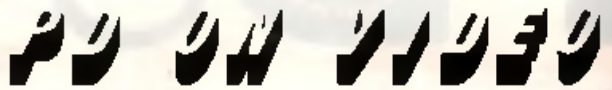
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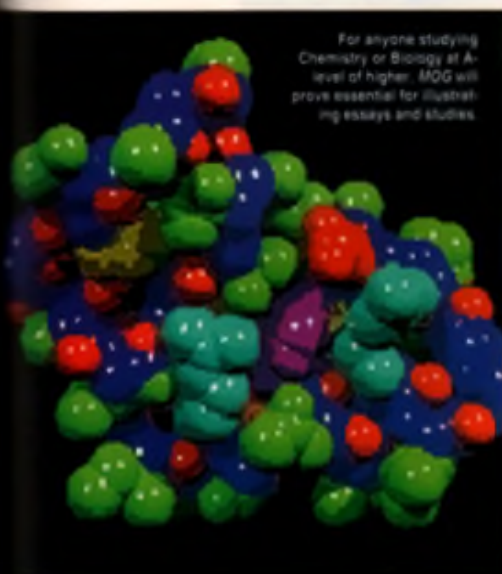
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create pretty pictures, and allow them to fool around with molecules that they don't understand. For students studying Biology or Chemistry at A-level or higher, it's an ingenious tool which will aid comprehension of their chosen subjects. It's easy to use, but for the ray-tracing option, a maths processor or calculator is recommended.

For anyone studying Chemistry or Biology at A-level or higher, MOG will prove essential for illustrating essays and studies.



DISK ID: F598

PRICE: 1.00 per disk. P&P 50p per 10 disks or part thereof.

AVAILABLE FROM: PD City, 119 Ballards Walk, Hamilton, Essex
TELEPHONE: 0268 412645



ICON MANIA

ICON CREATION PACKAGES

To many people, icons are nothing more than the small pictures they double-click on to load a game or utility. To the rest of us, however, they can be things of beauty (or at least interest), and are worthy of more attention than they get.

As anyone who has used it can tell you, Workbench's icon editor is extremely primitive. Luckily, though, a number of alternatives are supplied on this disk, all of which are guaranteed to make icon creation a more enjoyable process.

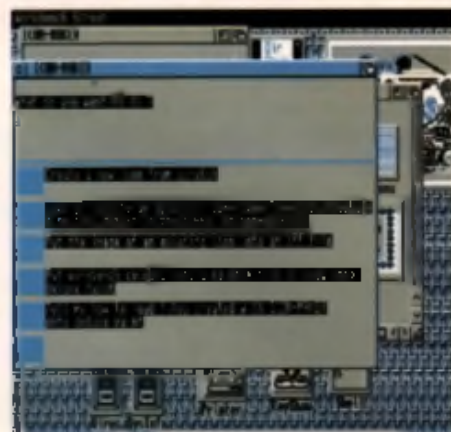
The most useful program on the disk is called *Icon Maker*, and it allows the creation of an icon from any *DPaint* brush - or vice versa - although it's in the former capacity that it's most useful.

Before drawing an icon, a reference palette using the desired Workbench colours must be saved. This is then loaded into *DPaint* in medium resolution, thereby setting the working colours. Once you've drawn an image, it's then saved as a brush, which is loaded back into *Icon Maker*. It also offers the chance to specify the type and name of the icon that's to be created before performing the necessary conversion.

For those who can't be bothered to create their own icons, dozens of ready-made ones are also supplied. They cover all icon styles, and include many of the most popular images, including disks and brushes - in fact, it's one of the most complete icon collections yet to appear. *Iconiser*, another program on the disk, is useful in an entirely different way, as it creates icons for programs which don't have any. When dealing with individual files, this may not seem particularly useful, but it really comes into its own when applied to the entire contents of a directory or disk.

Iconiser is simplicity itself to use: click once on the *Iconiser* icon, and twice on that of the directory or disk to be iconised. The program will scan the selected directory, and sub-directories, and add icons to any files that don't have one. This is extremely useful as it permits operations (such as copying, deleting, etc.) on files without having to resort to CLI or Shell.

Iconiser is also accompanied by a complementary program called *De-Iconiser* which has the opposite effect of the master program.



Icon Maker's facility to convert DPaint brushes into icons is great for enhancing the appearance and professionalism of programs.

DISK ID: ICON MANIA

PRICE: 1-8 disks are 1.25 each. 10- disks 99p each. Postage free.

AVAILABLE FROM: Clekover, 108 The Avenue, Clayton, Bradford, BD14 6SL

TELEPHONE: 0274 680060



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PRINT UTILITIES

HANDY PRINTER TOOLS

Despite their widespread use, printers probably cause Amiga owners more problems than any other hardware. At first, they seem deceptively simple, but getting them to configure to your Amiga can be a real headache. This disk attempts to remedy some of the most often encountered gripes.

The first requirement before any printing, is a compatible printer driver. If you own a mainstream printer, this is no problem, but if you own one of the more obscure Hewlett Packard or Canon machines, you'll find it difficult to trace a suitable driver. Included on this disk are drivers for the HP Deskjet Plus, the Deskjet C and the Canon P.11080, which should stop you picking up a Picasso or, acid as they print out!

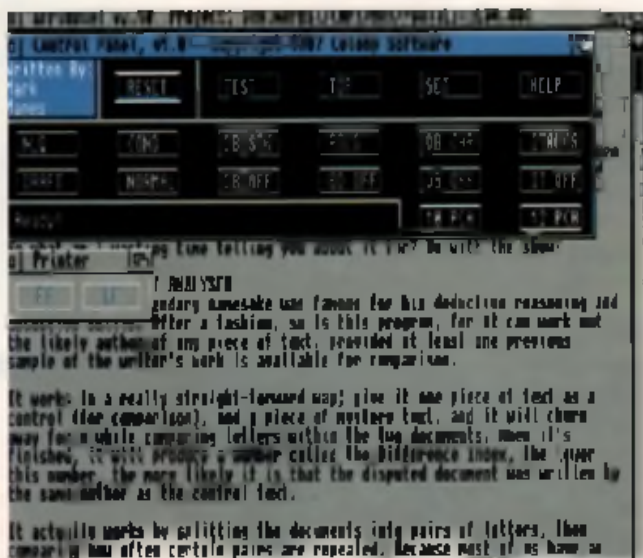
For the traditionalists among you, there's an extra little program called *Typewriter*. At first glance, most people would say "Why would I want my printer to emulate a typewriter?", but as the author suggests, there are occasions when it's more useful than a standard printer. When

the program's running, all of the keyboard functions - Tab, line feed, space, etc - act upon the printer immediately. This is ideal when printing error pages and other one-off jobs which will need visual positioning of the characters.

For anyone who hates waiting while the printer chumps out lengthy text files, *Spooler* is the answer you've been waiting for. It allows the user to set up a RAM or disk cache where print jobs are sent. The program then automatically reads and processes the jobs

while you carry on with whatever you're doing. Installation is quite straightforward via the CLI, and involves the copying of a selection of files to your printing disk, along with modifications to both the startup sequence and the mount list. The program works adequately, especially when using the RAM disk as a cache - but as it only intercepts text output to PRT, it doesn't actually speed up the printing of graphics or DTP pages - still, you can't have everything.

Finally, there are two complimentary programs called *Control* and *Printer*. Once activated, these produce small icon-controlled windows which are designed to multi-task with word-processors and text editors. Clicking on the various gadgets (the line and form feeds, pitch changes, print modes and other options) can be changed. When you consider how fiddly making small adjustments can be, you'll find this an essential utility - and it will prove especially useful for owners of printers which require these functions to be altered using extremely hard-to-get-at DIP switches. It's certainly become a firm favourite with me...



Control and Printer are two handy programs for controlling your printer's speed and output without the need for fiddling with the average codes of DIP switches.

DISK ID: 1612

PRICE: 60p per disk. P&P 50p (or less than 5 disks).

AVAILABLE FROM: 17 Hill Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH.

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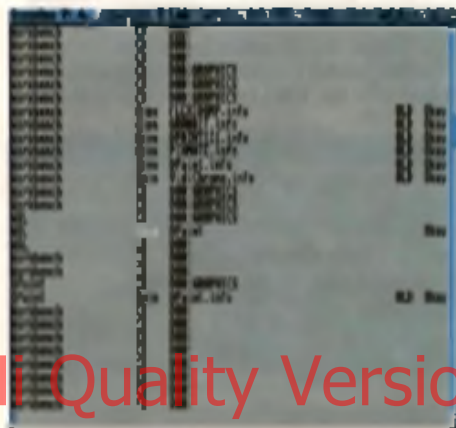


SNOOPDOS

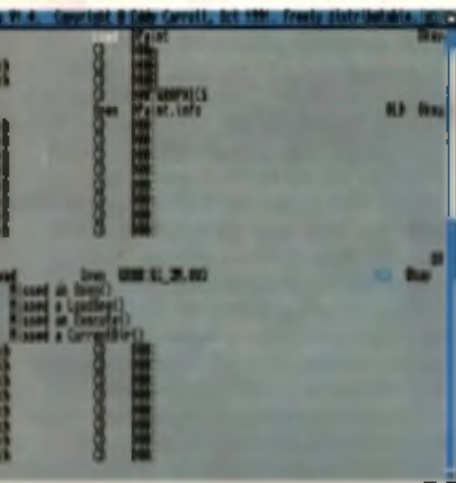
FILE TRACER

You've just spent three days assembling the ultimate collection of programs on a single disk, taking care to make use of every last byte of disk space. Everything runs perfectly except the last program. It seems to need additional files, but which ones? The program isn't giving any clues. Welcome to the disk compiler's nightmare! If you'd owned a copy of *SnoopDOS*, though, you could have checked what files were required before you started...

Many DOS programs, utilities especially, make routine calls upon different parts of the Amiga's Operating System in the course of loading. If these calls are interrupted, perhaps because a file is missing mis-located, the program is likely to fail. *SnoopDOS* is an ingenious program that monitors almost all such calls, and



Here's what SnoopDOS produces when loading *DPaint*. All function calls are indicated, making it very easy to trace potential problems. By using a system of continuous into updates, it's a brilliant early warning system.



Disk compilation is an essential technique to ensure if you are to optimise your floppy space. As a result, *SnoopDOS* is the perfect guide to the inchoa of your disks.

outputs a constant update of what's happening. By noting these details, you can be fairly sure of including all essential files when you move programs from one disk to another.

The program is run from CLI and has ten optional parameters, to monitor specific types of system call, such as *Execute* or *Open Operations*. In its default mode, *SnoopDOS* intercepts all system function calls except the

lock command and anything written in BC PL (which it can't handle). Output from the program can be redirected to the printer or a file on disk if a permanent record is required.

This program is suitable for anyone with a moderate grasp of AmigaDOS, and is bound to be worth its weight in gold.

DISK ID: BUT174

PRICE: 89p per disk. P&P 50p for any size order.

AVAILABLE FROM: Roberts Smith BTP, 100

Falldon Way, London, NW11 6JE.

TELEPHONE: 081 456 1626

90%

D-PAINT FONTS 2&3

SCREEN FONTS FOR ART PACKAGES

If you've ever longed for a font which was a bit out of the ordinary, these disks are the best thing you could have hoped for. Each disk contains twenty or more fonts saved as IFF screens which can be loaded into *DPaint* or anything similar. To use them, simply load them into a spare screen, cut them out one letter at a time, and transplant them onto the picture you're currently working on.

Disk two contains a variety of plain, classical fonts which are all varieties of traditional typefaces: *Helvetica*, *Times*, *Calibri*, *Old English* and *Disk three* contains a stunning collection of full-colour fonts which are certain to liven up your screens or scrolling messages. Most of the fonts appear to have been influenced by fantasy artist, Roger Dean, and one or two of them are direct copies of his work. There are some ordinary fonts on this disk, too, but they've been

coloured stylishly and are anything but boring. If you want to give your work a professional finishing touch, disk three is an absolute must, whilst the first two are of casual interest only.



DPaint Fonts Disk 3 gives the user more than twenty fantastically 4 fonts - some of which are very similar to those used by Roger Dean. Allowed for use in pictures or in scroll lists, they're small, large and very quality - but certainly extremely attractive! Expect further additions to the series very soon.



DISK ID: D-PART FONTS 2 & 3

PRICE: 1-8 disks are 1.25 each. 18+ disks will cost you 50p each.

AVAILABLE FROM: Hiskovary, 100 The Avenue, Clayton, Bradford, BD14 6SL.

TELEPHONE: 0274 880066.

78%

MULTIPLAYER

MUSIC MODULE

PLAYER

Music lovers will be interested to hear about the latest module replay routine called *Multiplayer*. As its name suggests, it can replay modules created by all the major music packages including *MED*, *Soundtracker*, *Future Composer*, *TFMX*, and many others.

It can also handle *Powerpacked* modules, and can be used to create a continuous 'album' replaying numerous modules without the need for user interaction. It's even *ARexx* compatible! Operated either from CLI or *Workbench*, it's easily the most powerful player available. Check it out!



Multiplayer can play and use modules saved in all major formats. You can even link modules to create 'Albums'.

DISK ID: F006

PRICE: £1 per disk. P&P is 50p per 10 or less disks.

AVAILABLE FROM: PB City, 119 Ballards Walk, Basildon, Essex.

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Some things were worth waiting for ...

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HiSoft Devpac 3

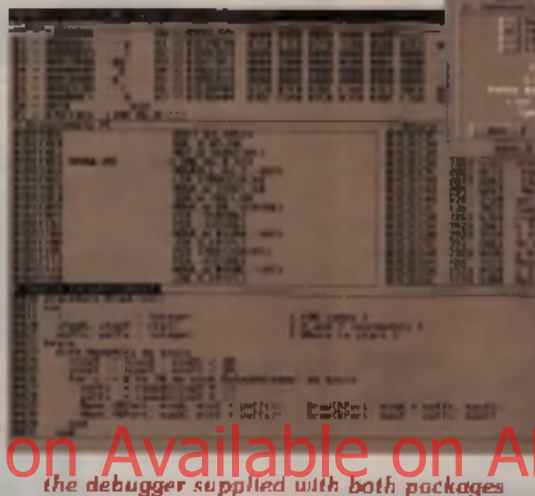
Devpac Version 3 is here at last. The two earlier versions of HiSoft Devpac for the Amiga set a standard in 68000 assembly language programming which was hard to surpass, but we think that we've done it. This new package has had a complete face lift, from the editor through to the debugger; in fact so many features have been added and improved that we feel confident in the claim that Devpac 3 is the ultimate assembly language development system on the Amiga ... for now!

The Editor

A new multi-window editor with bookmarks, mouse block marking, macros, complete window flexibility (including multi-views on one file), extensive user configuration and full integration with the other Devpac programs. The editor makes use of Workbench 2 or 1.3 automatically.

The Assembler

Improved and extended, the Devpac 3 assembler is now at least 40% faster than its predecessor (without pre-assembly), supports the full 68000 range of processors including the maths co-processors and has a tremendous number of switchable optimisations. With the ability to pre-assemble files for inclusion, it can now claim to be the fastest assembler on the Amiga.



the debugger supplied with both packages



Devpac 3 gives complete control over the assembly process

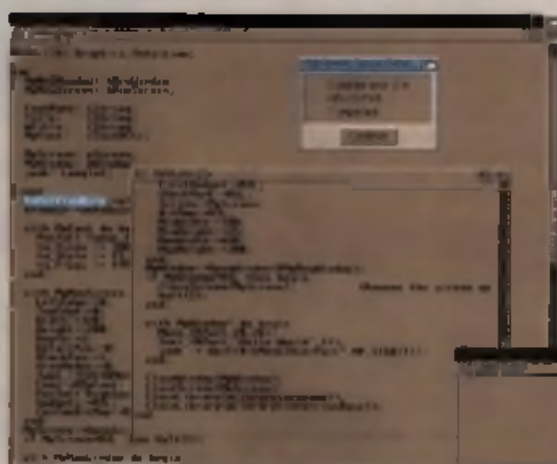
The Debugger

Devpac 3 is provided with a versatile debugger/disassembler for bug hunting and ease of learning. You can have as many views on your program as you like, including its source code; then set breakpoints, single-step instructions, etc. even at a source code level. Again, there is support for all the new processors and the floating point chips.

Devpac 3 comes complete with all the necessary include files, a linker, many examples and a clear, helpful manual.

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HighSpeed Pascal



error detection is fully interactive

HiSoft Devpac 3 (£69.95) and HighSpeed Pascal (£99.95) should be available at your local computer shop now. If you have difficulty locating a copy, you can order directly from HiSoft by telephone using Access/Mastercard, Visa, UK debit card (Switch etc.) or by post with a cheque/postal order. Mention this magazine when ordering to receive a £10 voucher redeemable against future purchases from HiSoft.

At last, a new Pascal compiler for your Amiga: HighSpeed Pascal. Compiling at close to 20 000 lines per minute on a humble A500 and with a fully integrated environment (based on the new HiSoft multi-window editor), HighSpeed Pascal is the answer to your programming prayers.

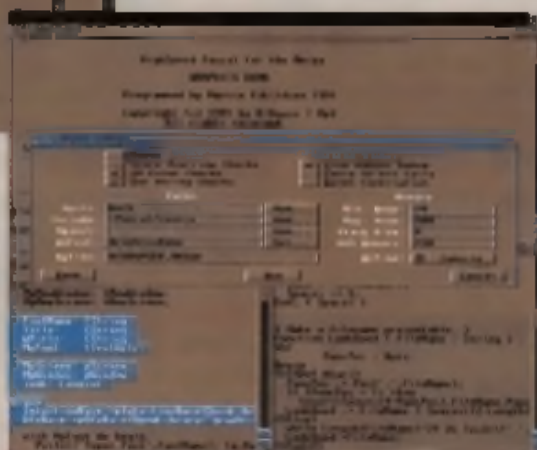
The compiler is very close to the standard set by Turbo Pascal 5 on the PC and enables you to port programs directly from the PC or ST - even the RTL unit is provided for graphic compatibility. You can compile separate units, link with assembler or use the inline assembler provided and we also supply a special version of our 68000 debugger which allows you to debug Pascal programs at a source code level.

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HiSoft Devpac 3 and HighSpeed Pascal are just two of the products that we supply for your Amiga. Other titles include ProFlight, HiSoft BASIC, Extrema, SARAJEVO C 5 and HiSoft C. For more details contact us at HiSoft, The Old School, Greenhill, Redkirk, MK45 5DF, UK.

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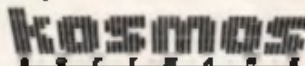
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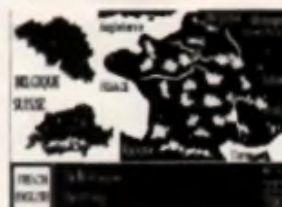
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Testimonials from Audio Gallery Users:

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2198 20 GAMER	all A500+ compatible
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2208 QUADRIX	addictive puzzle game
2209 GOAL DEN GOALS VOL 1 (P)	let all Kick Off 2 have!

USEFUL SOFTWARE

81 UFOB W/PROFESSOR (NP)	1463 DYNAMIC RUN IN FONTS (P)
118 AMIGA MATH (P)	1464 200 UTILITIES (NP)
410 FRANTIC FOOTBALL BRUSHES	1478 TEXTURE WORD PROC. (P)
440 DRAW FONT DESK (4) (P)	1480 DCCOPY & UTILITIES (NP)
454 HAM RADIO UTILITIES (5) (NP)	1484 EDUCATION INTRO WRITING (NP)
574 JAZZBENCH (NP)	1486 MFD V3.10 (NP)
582 DOPE INTRO MAKER (NP)	1493 DICE V2.05A (NP)
595 BUSIN ESS CARD MAKER (P)	1495 DESK BENCH (3) (NP)
630 MSH (MFSVDCS) (NP)	1906 PAGEFTR & CLIP ART (2) (P)
640 C MANUAL	1914 SHOWSHOW CONSTRUCTOR (NP)
668 PROGRAMMING DESK 1 (NP)	1951 KING JAMES RIFLE (3) (P)
680 SOUND APPS (2) (NP)	1954 CITIES OF MID MAKER (NP)
684 VIDEO APPLICATIONS (2) (P)	1987 QUICKRENCH (NP)
908 THE COMMANDS DISK (NP)	1990 NIGHTVIZERS UTILS (NP)
1072 AMOS UPDATE 1.32 (P)	2004 TURBO INFLORER V4.0 (P)
1095 DATABASE WORDS HOP (2) (P)	2012 DRAW MAP V3.30 (P)
1097 DRAW CLIP ART (2) (P)	2058 VFCOR BALL EDITOR * (NP)
1099 VIDEO GRAPHICS (4)	2168 MESSY (NP)
1117 GENEALOGY * (P)	2174 ANT VIRUS V3.14 (P)
1228 SIMULATOR (GERM) (NP)	2176 MIBS PAINT (P)
1273 C LIGHT (P)	2180 TWIN FACILE (P)
1450 NEW SUPERSTARS (P)	2181 AMIGA FORK (NP)
1451 ELECTROCAD V1.4 DEMO (P)	2189 WINDOWS REACH (NP)
1452 AMIBAS (P)	2186 PERM CHECK (P)
1536 NORTH C (PAKNET)	2189 PRINT STUDIO V1.26 (P)
1537 NORTH C (LARA CROFT) (2)	2190 PICTURE CONVERTORS PACK
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1550 FIFTH BASE V3.0 (P)	2197 UNICOPY (NP)
1549 LANGUAGE TUTOR (NP)	2200 LITTE BENCH (PLUS ONLY)
1604 DATABASE MASTER 2.0 (NP)	2201 PC EMULATOR DEMO (P)
1629 SPECTRUM EMULATOR (NP)	2202 TARDIS 2 (2) (NP)

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719 FLASH - QUEEN (2) (P)
724 TECHNOLOGICAL DEMO (P)
744 GURU DEMO (2) (P)
841 STUCKED W/BLACK (NP)
976 SCOPPER BEAST SOUNDING
1076 DIGITAL CONFERENCE (NP)
1099 CRUSADEERS - GEFRES (NP)
1095 DEEPER MOOD MUSIC (P)
1094 ART OF MEN MUSIC DEMO
1095 SEA COASTY DEMO * (NP)
1173 SPACED OUT VOLUME 1
1174 SPACED OUT VOLUME 2 (P)
1176 HUNKY WIFE ATONES (P)
1172 EVERYBODY DANCE NOW (P)
1178 DANCING THE DUCK (P)
1175 AMAZING TUNES 2 (3) (NP)
1093 CATS & NG BYLE (NP)
2002 SAMPLER SENSATIONS * (NP)
2003 MOVE ANY MOUNTAIN * (NP)
2004 VIVALDI SEASONS (2) * (P)
2199 CHARLY (P)
2180 WHAT CAN I DO FOR MY (P)
2198 SHAMEN DEMO (P)

SUDESHOWS

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417 MICHIGAN'S SUE SHOW
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747 MADONNA SUESHOW (P)
814 UP3 SUESHOW (P)
891 CREEPSHOW (P)
890 MADONNA SUESHOW 2 (2) (NP)
946 GORFON SUESHOW (2) (P)
1051 TOTAL RECALL SUESHOW (P)
1085 COMIC SUESHOW (2) (NP)
1103 SCOPPER BEAST SUESHOW
1263 WICHTER SUESHOW (2) (2) (P)
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935 MADONNA - HANKY PANKY (P)	near-level Madonna sample
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1463 MORE AEROTODDS * (P)	3 Behwerts classic!
1540 AMY VS WALKER ANIM * (NP)	Eric Behwerts at his best!
1541 RATMAN ANIMATION (2) * (P)	funny Behwerts animation
1552 MAGICIAN ANIMATION 2 * (P)	simply magic!
1561 PHENOMENA ANIMATION * (P)	superb gfx and music
1828 DE THE BART, MAN * (NP)	a must for all Simpsons fans!
1703 DECAY (SAMPSONS DEMO * (P)	should appeal to everyone
1753 L.F.F. OF IRAN (2) (P)	sample from the film
1841 ANTI LEMMA DEMO (2) (NP)	for Lemme fans with 2 meg
1852 THE WALL (8) (2) (NP)	man-mouth Pink Floyd a dealer!
1854 PRETTY BOY ANIM / SLIDESHOW (P)	doing the Avrigs
1885 ROBOTIC ANIMATION * (P)	clipsed from the film
1900 BLENDS - ICE DEMO (NP)	superb music and graphics
1902 VIRTUAL WORLD * (NP)	3D filled vector demo
1943 WINDLIFTER ANIMATION (2) (P)	very good
1947 MR POTATO HEAD (P)	funny cartoon artwork
1948 MR POTATO HEAD CHIPS ARE UP! (P)	more artwork
1950 CREATURE COMFORTS DEMO (NP)	from the TV adverts
1992 3D PASBALL ANIMATION * (P)	beautiful ray tracing
2193 A STROKE ENGINE ANIM (P)	technical animation

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SCHOOL of THOUGHT

Education software is a strange beast. As their varied sub-games are played, can a child really learn anything from them? In the first of a regular series, Pat Winstanley takes a look at the many English Language Tutors currently available.

EDUCATION IN PD

The educational software market, like that for arcade games, is divided into three main sections by price. At one end of the scale are the £20-£30 packages with big, colourful boxes, at the other are Public Domain titles which come as a bare disk for £2-£3 and now beginning to compete for the middle ground is a range of software houses offering products around the £10 mark. What's the difference in the packages to make such a wide variation in costs to you, the consumer?

Full-price games are now being treated as serious product by large software houses and given the glossy promotion we see in the likes of *Magic Story Book* and the Disney series. Both these titles justify their price due to the depth and extent of programming in the games, not just their boxes.

PD products however are also improving their products, one factor here being the availability of AMOS which allows non-arcade titles to be programmed by almost anyone to an acceptable quality and depth. As the demand for educational products grows, educational software houses are recognising that many of the full-price products on the market are simply not worth what is being charged, and that increased sales at lower prices both satisfy the customer more and at the same time satisfy the need for profits. This is the basis of the middle range.

For now, though, PD is worthwhile in two ways – as a taster to see what kind of program appeals to a particular child and to increase the range the child has to choose from. Many PD educational titles are produced by hobbyist programmers using AMOS. Teachers and parents programming in their spare time have excellent opportunities to involve children in the creative process, something larger software houses cannot always do.

Don't expect great depth or fancy graphics from PD titles and you won't be disappointed. What you will find, though, is a wealth of educationally valuable games out there for a few meagre pounds – and they may be more specified to your needs. This is a highly recommended route to take either on its own or in conjunction with the purchase of one or two full-price packages. After all, as with school books, you can never have too many education packages, as variety is the key to absorbing the information.

EDUCATION V GAMES

Should educational programs be like video games? Until recently, almost all educational programs for home use resembled those in schools: simple drilling exercises with no frills and generally little in the way of graphics. The educational aspect was the be all and end all, and was beside the programmer who tried to jazz things up a little for the kids. Now more and more programs are being released where the educational aspects are hidden away behind an arcade game.

Does it matter? When considering programs aimed for home use, yes it does. Children have had enough of 'boring school' when they come home. The last thing they want is to be plunked in front of a screen full of more work. If they want to use the computer at all they would rather have the latest shoot 'em up than a list of sums or spellings. Designers and programmers are beginning to recognise this with the result that the front end of educational games are beginning to resemble the latest chart-toppers, and this in turn is encouraging children to practice their basic skills without even realising it. At the same time, the power of machines like the Amiga means that mainstream games are beginning to include a great deal of strategy instead of the mindless beat-'em-ups of the past few years. Games like *Populous*, *Captiva*, and *Dungeon Master* have become classics in part due to their hidden educational aspects – calculation, strategy and logic problems rather than the usual reflex actions.

Is academic software boring? Some of the older games are, but newer ones need not be. However some children do suffer from distraction and those with short attention spans are often better off with a very plain, simple program than one which flashes fancy animation at them while waiting for an answer. In the long run, each child is different but none will persevere with a program that doesn't interest them. Choose wisely, perhaps having had a taster through the PD market, or one of the group packages such as a starting point, and you will soon find what interests your child.

The most academically sound program in the world is useless if your child doesn't enjoy it!

DOS AND DON'TS

Buying advice for parents

DO

- 1 Choose programs that children will enjoy as well as learn from. This is playtime, not home work.
- 2 Try the program with your child in the shop if possible.
- 3 Take recommended ages with a pinch of salt. Those suggested by publishers can be wildly inaccurate.
- 4 Look for programs which can be backed up. Disks and children are not a happy combination.
- 5 Aim for a program the child can operate independently. This means:
Blanking for mouse and keyboard control options for younger children.

DON'T

- 1 Don't worry if your child gets me bogged with a program aimed at a younger age group. It will still be having useful practice.
- 2 Don't ignore arcade games – many have useful educational elements like mapping, trying objects and memory games – add a large physical co-ordination and reflex formation.
- 3 Most educational programs cover at least some elements of the National Curriculum, but don't assume theory will revolutionise all.
- 4 Don't assume any program will teach. Some will but they are few and far between. Most offer only practice in skills already acquired.
- 5 Don't assume your child can be hit with. Don't skip over on screen instructions beyond the

SOFTWARE ROUND-UP

HENRIETTA'S BOOK OF SPELLS

Age: 7 - 14
Price: £25.99
Publisher: Lander Software
Address: 74 Victoria Crescent Road, Glasgow, G12 5JN

IN BRIEF: Hopeless Henry has been turned into a frog by the nasty witch, so the player must help Henry's wife, Henrietta, free him from this horrible fate. This involves solving a variety of word and letter puzzles in the spooky castle. These are very simple in execution, but prove to be immense fun, and bridge the gap between learning and entertainment perfectly. Probably the best spelling game around at the moment. Graphically, it's excellent, too.



This is Hal, Henrietta's American cousin. His mission is to rescue Morgana the Mermaid's wand from Professor Frenz.....



..... who doesn't seem to be the nicest of customers when Hal falls into his clutches.....

VERDICT	
DOCUMENTATION	79%
EASE OF USE	65%
THOROUGHNESS	83%
LIKELIHOOD TO STIMULATE	69%
LIKELIHOOD TO INFORM	81%
ORIGINALITY	57%
COMPATIBILITY WITH N. CURRICULUM	93%
VALUE FOR MONEY	90%
OVERALL	80%

SPELL!

Age: 5 - 15
Price: £25.99
Publisher: Europress Software
Address: Europa House, Adlington Park, Macclesfield, SK10 4NP

IN BRIEF: Designed to cover a wide range of spelling problems encountered by both children and adults, this package offers plenty of flexibility in its five different games. A Set of word lists (5000 words in all) cover different types of difficulties such as vowel sounds, word families and irregular spellings. Overall, though, the package suffers from terrible screen design - which can make it hard on the eyes - and consequently short-lived fun.

VERDICT	
DOCUMENTATION	60%
EASE OF USE	71%
THOROUGHNESS	85%
LIKELIHOOD TO STIMULATE	27%
LIKELIHOOD TO INFORM	34%
ORIGINALITY	23%
COMPATIBILITY WITH N. CURRICULUM	76%
VALUE FOR MONEY	55%
OVERALL	52%

SPELLBOUND!

Age: 7 - Adult
Price: 29.95
Publisher: Lander Software
Address: 74 Victoria Crescent Road, Glasgow, G12 5JN

IN BRIEF: A useful series of programs for beginner readers using the 'look, cover and spell' technique as practised in many schools. Even young children can cope with a little parental intervention, and after a while they'll be strolling through its many scenes. A little weedy in places and often finicky to use, this is worth persevering with.

VERDICT	
DOCUMENTATION	82%
EASE OF USE	43%
THOROUGHNESS	79%
LIKELIHOOD TO STIMULATE	89%
LIKELIHOOD TO INFORM	81%
ORIGINALITY	76%
COMPATIBILITY WITH N. CURRICULUM	81%
VALUE FOR MONEY	68%
OVERALL	75%

THINGS TO DO WITH WORDS

Age: 5 - 12
Price: £11.99
Publisher: Soft Stuff
Address: 19 Quarry Hill Road, Tonbridge, Kent, TN9 2RN

IN BRIEF: This is a collection of three word games which encourage spelling in quite a fun way. Anagrams, Jumbled Sentences and Word Hunt (make as many words as possible from the letters of another) are all simple to play, with little distraction. There are no frills, but this is a solid workable package.



This friendly character is a bookworm, as you will see on various screens during the game where his progress leaves neat round burrows through various volumes.



Here is one of the anagram screens, with a selection of possible answers shown to help the child choose.

VERDICT	
DOCUMENTATION	75%
EASE OF USE	84%
THOROUGHNESS	75%
LIKELIHOOD TO STIMULATE	70%
LIKELIHOOD TO INFORM	79%
ORIGINALITY	35%
COMPATIBILITY WITH N. CURRICULUM	47%
VALUE FOR MONEY	80%
OVERALL	62%

JUNIOR TYPIST

Age: 4 - 10
Price: £16.95
Publisher: School Software Ltd
Address: Tail Business Centre, Dominic St, Limerick, Ireland.

IN BRIEF: Aimed at youngsters, but also eminently suitable for adults, this program offers tutorial, game and spelling sections. The game consists of various words dropping from the top of the screen at different speeds, while the budding typist has to type them in before they reach the ground. Perfect for family tuition, it'll help refine keyboard and language skills.

VERDICT	
DOCUMENTATION	21%
EASE OF USE	67%
THOROUGHNESS	72%
LIKELIHOOD TO STIMULATE	86%
LIKELIHOOD TO INFORM	83%
ORIGINALITY	78%
COMPATIBILITY WITH N. CURRICULUM	68%
VALUE FOR MONEY	84%
OVERALL	62%

SCHOOL

A B C D



All the letters of the alphabet are hiding in disguise from Donald. Press the correct key to catch them. Make the sticky-out-tongue!

F G



And here's an 'F' trying to come clean. Press a key and Donald will put salt in its dirty socks.

DONALD'S ALPHABET CHASE

Age: 2 - 5
Price:
Publisher: Disney Software
Address:

IN BRIEF: Everyone loves the Disney characters and this game is designed to make use of Donald Duck to help toddlers become familiar with letters in a fun way. The letters of the alphabet are hidden in Donald's house and the child must spot them and press the corresponding key so that Donald can catch them. Not bad, but supervision is recommended.

VERDICT

DOCUMENTATION	65%
EASE OF USE	76%
THOROUGHNESS	68%
LIKELIHOOD TO STIMULATE	93%
LIKELIHOOD TO INFORM	38%
ORIGINALITY	88%
COMPATIBILITY WITH N. CURRICULUM	30%
VALUE FOR MONEY	66%

OVERALL 65%

BETTER SPELLING

Age: 8 - 14
Price: £22.95
Publisher: School Software Ltd
Address: Tall Business Centre, Dominic St, Limerick, Ireland.

IN BRIEF: Only two activities are available in this program, spelling using the 'look, cover, see' method and anagrams, but the presentation is delightful and a positive draw for children. The main screen is laid out as a blackboard, complete with chalk and board rubber. As a question is answered a spinning tick or cross appears. After several correct answers, a bonus question appears giving a good incentive. The anagrams go down particularly well.

VERDICT

DOCUMENTATION	44%
EASE OF USE	83%
THOROUGHNESS	69%
LIKELIHOOD TO STIMULATE	85%
LIKELIHOOD TO INFORM	77%
ORIGINALITY	60%
COMPATIBILITY WITH N. CURRICULUM	71%
VALUE FOR MONEY	68%

OVERALL 65%

LEARN TO READ WITH PROF

Age: 4 - 8
Price:
Publisher: Prisma Software
Address: 28 St James Avenue, Upton Heath, Chester, Cheshire, CH2 1NB

IN BRIEF: This series of programs is designed to take non-readers through from beginning to recognise words to constructing sentences. Although colourful animations play a part the emphasis is on simple controls and drilling of the basics. Four separate but interlinked packages are available: 'Prof Plays a New Game', 'Prof Looks at Words', 'Prof Makes Sentences' and 'Prof Hunts for Words'. It's extremely thorough and sticks to the National Curriculum, but it suffers from a rather dodgy manual.

VERDICT

DOCUMENTATION	56%
EASE OF USE	67%
THOROUGHNESS	90%
LIKELIHOOD TO STIMULATE	50%
LIKELIHOOD TO INFORM	76%
ORIGINALITY	75%
COMPATIBILITY WITH N. CURRICULUM	93%
VALUE FOR MONEY	88%

OVERALL 67%

LET'S SPELL

Age: 4 - 9
Price: £11.99 (each pack)
Publisher: Soft Stuff
Address: 18 Quarry Hill Road, Tonbridge, Kent, TN9 2RN

IN BRIEF: At the Shops, 'Our end About' and 'At Home' make up the Let's Spell series where the child clicks on an item of scenery then spells it using an on-screen alphabet. French language versions are also available, complete with accents. An excellent all-rounder, which initially hooks the user with its graphics, and keeps them there with its content.

VERDICT

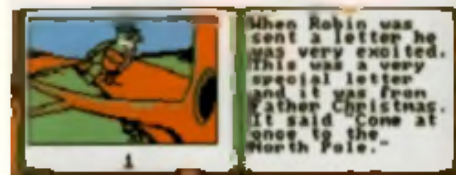
DOCUMENTATION	70%
EASE OF USE	91%
THOROUGHNESS	75%
LIKELIHOOD TO STIMULATE	63%
LIKELIHOOD TO INFORM	67%
ORIGINALITY	83%
COMPATIBILITY WITH N. CURRICULUM	58%
VALUE FOR MONEY	85%

OVERALL 70%

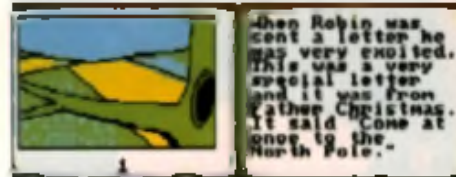
MAGIC STORY BOOK

Age: 5 - 14
Price: £29.95
Publisher: Soft Stuff
Address: 19 Quarry Hill Road, Tonbridge, Kent, TN9 2RN

IN BRIEF: As a change from straight spelling games, this program allows any child, whether a reader or not, to create their own on screen picture book. It's extremely easy to get to grips with, and the story elements can be used from those provided on disk or words typed in and animated sequences can be added at a later stage. An excellent package, but not consistent enough.



Here a double page spread is partially complete. All that needs doing is to paste in the picture elements.



And now it's time to add some sound effects from the selection above, together with play duration times.

VERDICT

DOCUMENTATION	91%
EASE OF USE	86%
THOROUGHNESS	79%
LIKELIHOOD TO STIMULATE	90%
LIKELIHOOD TO INFORM	83%
ORIGINALITY	78%
COMPATIBILITY WITH N. CURRICULUM	82%
VALUE FOR MONEY	92%

OVERALL 87%

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- APD01 - Fusion Family Indivision
- APD113 - Family History Database
- APD120 - Spanish Tutor - Pretty good!
- APD257 - Camera Labeler - For the info!

Slideshows & Pics

- P112- Nani Slideshow - Both 1 & 2 here
- P24- Roger Thom - Excellent slideshow
- P32- Agron 6 - From Tobias Richter
- P33- Agron 8 - More from Tobias Richter
- P40- Mac's Art - Very easily done
- P41- Nemesis Prototype - From Hamish
- P48- Pygmalion slideshow - Rather brilliant
- P50- Nemesis - More from this group
- P623 Channel 4 & Sixties - Very good
- P65- Agron 12 - Fantastic quality
- P66- Fractal Future Vision - Very good
- P67- Agron 11 - Incredible numbers
- P68- Mac's Art - The next chapter
- P700- Laurel & Hardy - Brilliant for fun
- P83- Invisible world - Very things
- P85- RoboCop - By Hamish, Unbelievable!!
- P89- Art for Arts Sake - By Hamish - Brilliant

Animations (most 1mb)

- A10- Moon Animation - By Eric Schwartz
- A10- Babylon - This is brilliant (by E.S.)
- A11- Rings in Space - Brilliant
- A12- Rings - The most beautiful animation
- A13- Smokey II - Excellent little animation
- A14- Star Trek - First Matterwave - good
- A15- Agron 26 - Dry dock
- A16- Agron 7 - Incredible F13 fighter
- A19- Fractal - Beautiful space scene
- A20- Walk - By Eric Schwartz - Very good
- A21- Agron 10 - Millionth Moment
- A22- Agron 11 - Very long sequence
- A23- Agron 12 - By the digital art gang
- A24- Discovery - Beautiful - Very good
- A25- Car - Lotus & Unicycle - Brilliant
- A26- Agron 22 - Includes approach 4 - Wow
- A27- Agron 24 - Back to New Hollywood
- A28- K-Ming - Reason brilliant sequence
- A29- Light Cycle - From Tron and Return
- A30- Anti-Lunatic - J.M.E.C.
- A100/103/4/9 - The Walk - Excellent!
- A107/110 - THE LANDING - 4 MB
- A112- Jupiter II - Another historical scene
- A115- Agron 27 - Back and others
- A116- Agron 28 - Disconcert, Beautiful
- A117- Agron 29 - Millennium Fabric
- A128- Star Trek - By Eric Schwartz
- A126- Real 3D Anim - Real Particle
- A127- Real 3D Anim - Top and bottom

Music

- M01- Sound samples - includes perfect and

- M04- Vanguin - Brilliant music & graphics
- M08- Jean Michel Jarre - With good pics
- M10- Amigalove - By Rod Baxter - Brilliant
- M19- 4 Units 1 - Mr Baxter strikes again!
- M20- 4 Units 2 - More of his formidable wit
- M34- APDM 11 - Sound utilities
- M38- APDM 28 - MIDI UTILITIES
- M50/54/5 - Modules - Need I say more?
- M50/56 - Metal Modules - Good
- M61/20 - Sound samples for STracker
- M115 - Superior Music Utility - By the score
- M131 - Deluxe Music Data - Needs DM
- M145 - MIDI Programmer
- M152 - MIDI Programmer - More
- M165 - MIDI V2.2 - Fantastic music editor
- M172 - Audiomagic V2.1 - Brilliant utilities
- M190 - Do The Business Re-Mix II
- M196 - Powerhouse Sound Utilities
- M198/9 - Vivacity - By Rob Baxter
- M210/21 - House Samples
- M209/9 - RSI Modules - Disks
- M216 - Drums & Pipes - Brilliant
- M223 - RSI Modules - Disk 2
- M225 - Audiomagic V2.2 - More utilities
- M227 - Pygmalion Samples - Sound samples
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- M214 - Delta Music Editor - Very good

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- LPD5 - Jungle Banger - Impish adventures
- LPD6 - Muck & Phly - 1 - Excellent game
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- LPD23 - Phly 2 - Fantastic quality
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

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CAPTAIN DIAMOND'S 500 EXTRAS PAGE

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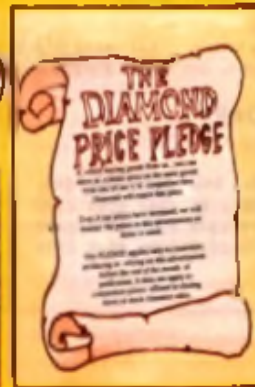
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all Mk II Monitors come with F19 Promotion

P/X = part exchange Amiga 500 for Amiga 1500

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The NEW
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25MHz processor, 100 Mb hard disk,
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Software with the machine comprises Deluxe Paint III, The Works, Home Accounts, 3 Games (Puzznic, Taki and Elf), and a book entitled 'Get The Most Out Of Your AMIGA'

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33MHz 68030 CPU
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4Mb 32-bit RAM installed
Expands to 16Mb. SCSI HD on board controller

This low 68030 accelerator memory upgrade, SCSI device interface board delivers exceptional value and performance without a high price. It can take 16 Mb 32bit RAM (related along with 68822 maths coprocessor). Runs approximately 11.5 times faster than the standard AMIGA 1500/2000.

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 50MHz 68030 CPU
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The Works, Home Accounts
+ 3 Games - Puzznic, Taki, Elf.
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AMIGA 1500 With Workbench 2.04

Software with the machine comprises Deluxe Paint III, The Works, Home Accounts, 3 Games (Puzznic, Taki and Elf), and a book entitled 'Get The Most Out Of Your AMIGA'

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CAPTAIN DIAMOND'S EXTRAS PAGE

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DID YOU GET A SHOCK LAST CHRISTMAS



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Last Christmas nearly 20,000 fake Philips 8833 MKII monitors were imported into this country by some unscrupulous retailers looking to make a quick buck out of you, the British public.

Be warned these monitors were electrically unsafe and do not comply with British safety standards.

If your regular supplier lobbed you off with inferior goods go back and demand a refund. Note, product codes on the rear of all genuine UK monitors ended in either 05G or 55G, if yours did not, then you haven't got the real Mc-Coy. 10G was manufactured for the Dutch market and 20G was designed for the USA. Neither are safe working on a British power supply. Get it checked before it's too late!!!

DIAMOND ONLY EVER SUPPLY GENUINE UK STOCK

British Standard Philips 8833MKII Monitor with F19

Promotion only £229 inc Vat at Diamond

NEXT MONTH

If you thought the new-look CU Amiga was a good read, wait until you see next month's issue! On sale May 26th, it's bursting with amazing features on all things Amiga. For starters, all our usual in-depth reviews and product tests will be there, as well as new Buyer's Guides on a whole range of products, ranging from modems and joysticks to memory expansions and top movie licenses. There's a report from the World Of Commodore Show in New York detailing all the latest developments and technical advances for the Amiga, and we'll also be presenting more of our wonderful Blue Pages tutorials, featuring walk-through guides to popular PD and full-price utilities. It's all in next month's CU Amiga - you'd be mad to miss it...

A TON OF FUN

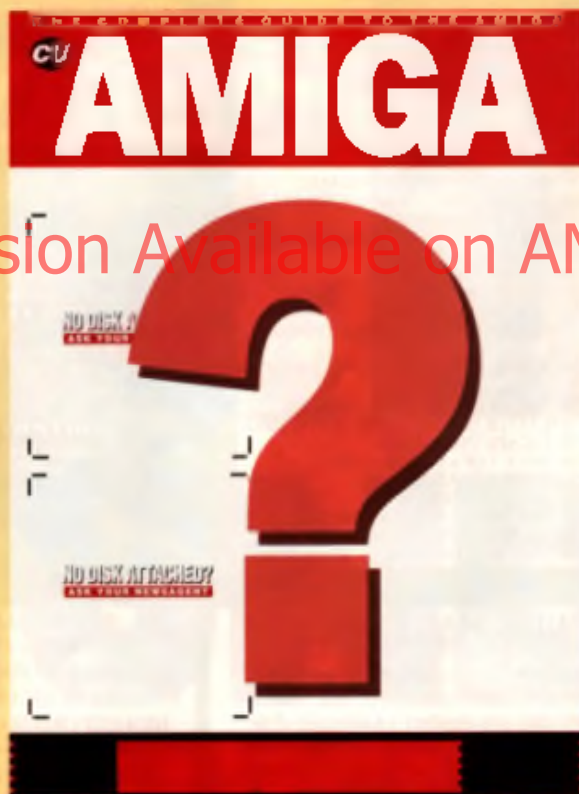
Yes, that's right, we're continuing our policy of giving you the best-value coverdisks on any Amiga mag with a massive £120 giveaway of full-price programs. Not only that, but we'll also have two of the hottest game demos around as well as a first look at Gremlin's *Zool* - the 'Space Ninja' they hope will be the Amiga's equivalent to *Sonic The Hedgehog*.

GAMES GALORE

As usual, you'll read the first reviews in CU Amiga and next month's going to be no exception with exclusive examinations of Lucasfilm's *Monkey Island 2*, Readysoft's *Guy Spy*, and Rage's *Striker*, a 3D soccer game unlike any you have seen or played before...

SHOWTIME

Nick Veltch reports from the World of Commodore Show in New York. One of the biggest all-Amiga shows in the world, all the latest machines will be on display along with some heavy duty hardware. Our 5-page feature details all the latest advances as well as showcasing some of the products you can expect to see appearing later in the year.



DO-IT-YOURSELF

We kick off our DIY column with details of how to make a joystick/mouse converter which can switch between the two at the click of a button. In coming months we'll be taking a look at inserting accelerator cards, repairing joysticks, aligning drive heads and general Amiga repairs.

GET SERIOUS

As usual, our in-depth reviews of serious software continue to set the pace. Over 30-pages of product tests mean we give the most complete coverage of any Amiga magazine. Items for review next issue include *Image Master*, a 24-bit paint package, and *V-LAB* - a real-time video

digitiser. Also on test will be the GVP Mk.2, a 24-bit card, and the new Power Scanner.

GOING PUBLIC

Bigger and better than the rest, CU Amiga's PD Scene and PD Utilities columns cover the entire spectrum of the Public Domain and give the most comprehensive buyer's guide information of any magazine. Next issue also sees the start of our special 'Amazing Worlds' feature which focuses on top demo groups from around the world.

NEXT ISSUE
on sale
May 26

17 Bit Software

Quality public domain software for the Amiga

DISK OF THE MONTH PROTRACKER 2.0 COMPLETE WITH DOCUMENTATION AND MODULES. **REN SAYS:** "Before protracker 2.0 my life was nothing... **REN SAYS:** "Nothing as good as my life" Only £1.95. **MR SUN SAYS:** "Yeh!"

PROJECT X The latest arcade smash from Team 17 available now only £17.99, with 21 PD games absolutely free. This game has received every accolade known to man, and is the ultimate blast for your Amiga on the market today. Blister those fingers NOW!!!! **Mr Sun 100% Arcade Action!!!**

THE * MEANS NOT + COMPATIBLE

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 - 1 PD20 SPRITE BANK EDITOR V2.0
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 - 1774 LSD RPG AND ADVENTURE CHEATS
 - 1775 EDWARD, STRAIGHT FROM THE AUTHOR THIS TEXT EDITOR IS MEGA!
 - 1776 LEMMINGS ANIM (1 MEG)
 - 1777 VIKING SAGA, 1 MEG ANIMATION
 - 1778 REAL THINGS HORSES (1 MEG ANIM)
 - 1779 BRIAN BADLANDS COMIC ART
 - 1748 YUM YUM (GAME)
 - 1747 DEMOLITION MISSION (GAME)
 - 1746 GENESIS MEGA DEMO (GOOD STAFF)
 - 1745 MAD MIXERS DEMO
 - 1744 CRISPE SHOW SLIDES 1 (GREAT DISK)
 - 1743 INTRO MAKER
 - 1742 WASTELANDS GAME
 - 1741 SURVIVOR (GAME)
 - 1740 NOISEPLAYER 1.0
 - 1739 REPRKILLERS 2.2 (GREAT VIRUS D4SK)
 - 1738 A+B FRACTAL MOUNTAIN SLIDESHOW ON 2 DISKS GREAT
 - 1737 TOO MUCH 1 D 1 MEG ANIM
 - 1736 EASTER ISLAND ANIMATION (1 MEG)
 - 1734 ESCAPE V2.0 (GAME)
 - 1734 ISSUE 3 OF + OWNERS UTILS
 - 1733 ISSUE 2 OF ABOVE
 - 1732 QUARIX GREAT GAME
 - 1731 NAPALM DEATH SLIDESHOW
 - 1730 ATRILINE SAFETY COMBO SKETCH
 - 1729 A + B NOT THE NINE O'CLOCK NEWS

- ### LATEST PD
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 - 1722 DIPLOMACY GOOD STRATEGY GAME
 - 1721 FILE LOADER AND VIKER, UTILS
 - 1720 SUPERDOPPER, SYS INPT 2.15
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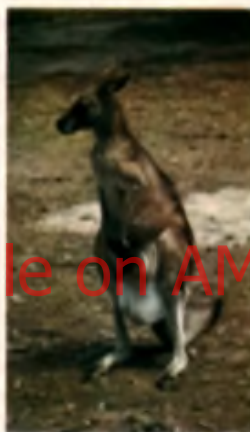
Most of *CU Amiga's* Australian readers don't stand a Dingo's chance of winning our comps, as it takes months for their entries to reach us. However, to make amends with our loyal Aussie readers, we're offering one of them the chance to win a wonderful CDTV unit - guaranteed to work with their Antipodean Amigas. And for one runner-up, there's a bundle of hearty games, whilst another ten will win one-year subscriptions to the amazing *CU Amiga*.

What do our down under followers have to do to win this superb device? It's easy. Listed elsewhere on the page are five multiple-choice questions awaiting your attention. They're all related to famous Aussies who have made it in Britain, including members of that well-known Oz export, *Neighbours*. Still, enough of this chit-chat - we're off to watch *Prisoner Cell Block H* - here are the all-important questions...

WIN A CDTV!

1 Name this famous Oz artist, seen to the right promoting Commodore's decrepit C64. Is it:

- A. Kikky The Koala
- B. Rolf Harris
- C. Paul Robinson
- D. Paul Keating



2 What was Kylie Minogue's first hit single called? Was it:

- A. I Should Be So Lucky
- B. The Locomotion
- C. Any Dream Will Do
- D. Paul Keating

3 Talking of *Neighbours* stars, who went on to star in Andrew Lloyd-Webber's 'Joseph And His Amazing Technicolour Dreamcoat'? Was it:

- A. Ian Smith
- B. The Twins
- C. Jason Donovan
- D. Paul Keating

4 Which one of the following isn't a popular Aussie soap?

- A. Home And Away
- B. The Young Doctors
- C. The Flying Doctors
- D. Paul Keating

5 Name the incredibly talented Kangaroo who starred in its own series:

- A. Drippy
- B. Dippy
- C. Skippy
- D. Paul Keating

DOWN UNDER COMPETITION

When you've answered all five of these incredibly hard questions, simply pop them on the back of a postcard, and address it to:
Aussie Comps, *CU Amiga*, Priory Court, 30-32 Farnegdon Lane, Farnegdon, London, EC1 3AJ, England.

The comps close on September the 30th 1992, so there's plenty of time to tie that Kangaroo down, Sport, and get those entries in. Any received after will be blessed.

RULES:

NO EMPLOYEES OF EMAP IMAGE OR THEIR FAMILIES CAN ENTER, AND NEITHER CAN ANYONE WHO DOESN'T LIVE IN AUSTRALIA. THAT'S IT, REALLY..

6 Finally, there's a tie-breaker to help us determine the winner. Simply read the following phrase and complete it in no more than ten words.

I love the Queen because...

when it comes to the crunch

Disk space is always a problem, Mat Broomfield doubles up as he

explores
the
avenues

available for the bur-
dened floppy user...

THE SQUEEZE

No matter how much data you squeeze onto a disk, it always seems that there's never quite enough space. A number of solutions have emerged, ranging from data compression and archiving systems, to higher capacity disks and drives. It's the former two methods that are the subject of this article.

Data compression can be split into two basic categories: data specific systems, such as the graphics-only JPEG, and generic ones which will work with any type of data. Although data specific systems yield the most impressive space savings, generic compression routines are far more practical in everyday use thanks to their versatility.

Generic compression systems can be further divided into two categories: single or multi-file. **Powerpacker** is probably the best known of the single-file compression programs (see panel 1). For now, I want to look at multi-file systems, which are more commonly referred to as archivers.

ARCHIVE IT

An archiver can be used to process the entire contents of a disk - or disks - and convert them into a compressed format which still retains all of the directory and file information, yet which is stored as a single block of data. Individual files and directories can then be extracted from this archived data block at the user's leisure.

There are many archivers available, most of which can be found in the Public Domain. The most popular are **LHArc**, **Lha**, **Zoo** and **PKZip**, all of which produce more or less the same and

result. The two most important features of any archiver, are the speed at which it compresses and decompresses data, and the amount of compression it can achieve. Higher compression rates mean longer compression times, so a moderate balance of the two is usually chosen.

YOU'RE HISTORY

The original archiver was created as a result of a compression formula called the Huffman algorithm. This was used by Japanese programmer, Haruyasu Yoshizaki, to write the first MSDOS archiver for use on PCs and mainframes. Since then, the original algorithm has undergone several refinements, but still stands as the basis for all commonly-used archivers.

The most popular use for archivers is on bulletin boards, where modem owners can ring up and receive full programs via the telephone lines. Each second of download time costs valuable money, so it is important to reduce the files to their smallest size. Despite their widespread use, though, there's still no single standard for archivers, but users of certain bulletin boards or distribution networks tend to favour particular

types. For example, the Fred Fish Public Domain disks generally use **LHArc** format, as do many CIX bulletin board users. Because they were originally used primarily by serious users, most archivers aren't intuition-driven and therefore don't have user-friendly menus or mouse-operated gadgets.

A SAMPLE SCRIPT

Most archivers are script-driven, and require instructions to be issued via CLI or Shell. A typical instruction may look like this: **LHArc -x a archive-name DF1.txt * .doc**

The instruction comprises five main elements: switches, command, archive, filename and pattern.

Although I used '-x', there are a number of possible switches. Their use is optional, but they can clarify the way the archive should proceed - for example whether items within directories should be included or not. (The command 'a' in this case), tells the archiver what to do with the archive (ie whether to add or remove files, or perform some other operation). The archive simply indicates the name of the archive file to be read from or written to. If the user is adding files to an archive, but one doesn't exist yet, one will be created with the name

POWERPACKING Powerpacker is the best known file compressor available, and as is often the case, it started life as a programmer's tool. After undergoing a series of revisions and upgrades, it was released commercially and is now available as version 94. It can compress data files to executable programs, and has been known to achieve compression rates of over 80%, especially when used on GIF screens.

Powerpacker is now accompanied by a suite of programs designed to manipulate Powerpacked files. **PPfiles** is used for reading and writing **PPfiles** like storage screens. **PPfiles** will reply to messages. Until recently it could only be used to compress **bitmaps**, but the latest version of the program has added a scripting ability that allows the user to automatically compress or decompress all or some of the files on a disk or hard drive. However, thanks to its ease of use generally, it complements version 94. It's getting this much a commodity - what most should you possibly need!



LHArc is relatively simple to use, but the upgraded version, LHA, has enough options to wrap the most technical technique in busy!

LHArc is the intuition-based version of LHArc, which is one of the most popular archivers available.

Open tabs you can your archives to add to or list an archive file. Its program buttons are ideal for simplifying complicated functions.

FEATURES COMPARISON

Because archive users are constantly looking for the 'ultimate' program, this table shows the average results of multiple compression and decompression of 2Mb of text, graphics and other data formats stored in multiple files, using multiple switches.

	TIME (S)	COMPRESSED SIZE	SAVING	COMPRESSION RATIO
LHA V1.10	64	707135	64.5%	2.8:1
LHARC V1.30	120	775914	61.0%	2.6:1
PKAZIP V1.02	124	737767	63.0%	2.7:1
ZOO V2.1	176	707476	64.5%	2.8:1

It comes as no great surprise to see that LHA comes first in every test as it's the most recently-released package. But if you look at the results for Zoo, you'll notice the classic trade off: great compression rate, lousy speed!

given in this section. Filename is used to specify the file to be archived, however, if the name of a directory is given (DF1:c or DHD deva for example), the entire directory will be archived. Pattern, the final element of the instruction, can be used to filter out unwanted files. In this case, I've told the archiver only to access files that end in the characters 'doc'.

There are hundreds of ways that these elements can be combined, giving endless archiving permutations, and virtually absolute control over the finished results. The manual for LHA alone covers nearly fifty pages, so you'll appreciate it if I don't explain every combination! Mind you, the results it offers are well worth the effort, and most users probably won't need to read beyond page ten in any case.

CONCLUSION

To summarise, archivers can make your life easier by storing and compressing files in a single large block of code - an archive. Additional files can be added to this at a later date, or removed if they're no longer required. The date stamping option allows the user to automatically create archives consisting of files created or modified after a certain date, making it an ideal way of backing up data on a hard drive.

There are dozens of cheap archivers available, but the best known is LHARC, although LHARC and PKAZIP are both intuition driven, and hence more user-friendly. If you want serious compression, remember that it comes at the cost of speed - but it could be worth that extra time. To summarise, archivers are very simple to use, can save you loads of disk space - not to mention phone bills - and are an essential utility for any serious user. Why not buy one today?

ADDRESS BOOK

Most archivers are Public Domain and can be bought from any PC library, or downloaded from a bulletin board. For more information, contact long held of our contact: 17 St Andrew, 1st Floor Office, 28 Market St, Stamford, West Yorkshire, WF1 1DH. Tel: 0824 36882

JARGON BOX

- **Archive** - File containing one or more compressed files
- **Archiver** - Program used to create an archive
- **Bulletin Board** - An electronic 'meeting place' where modem owners can contact using their computer.
- **CIX** - A very popular bulletin board.
- **Compression** - The technique of reducing information in size whilst retaining its exact content.
- **Compression Ratio** - The amount by which a file is reduced in size after compression. A ratio of 2:1 means that it has been halved.
- **Decompression** - The process of restoring a compressed file to its original size and format.
- **Huffman's algorithm** - The original formula used as the basis for most archiving systems.
- **JPEG** - Joint Photographic Expertise Group, a special compression technique for pictures that results in savings up to 97%!
- **LHA** - The newest archiver which achieves high rates of compression and works very quickly.
- **LHARC** - The most popular and best known archiver.
- **LHARCA** - A user-friendly version of LHARC using windows and menus.
- **Modem** - An interface that lets computer owners transmit and receive data via a telephone line.
- **MEDOS** - Microsoft Disk Operating System: the disk language used by business machines and PCs.
- **PKAZIP** - Possibly the most user-friendly archiver of all.
- **Script** - A command or sequence of commands.
- **Zoo** - An older archiver that gives excellent compression rates, but takes a long time to do it.

THE BIG ONE

Despite their incredible power and flexibility, most archivers come unstuck when you want to transfer a large file from hard disk to floppy. If the compressed file comes to over 800k, most archivers are unable to split it so that it can be stored on several disks. There is however, an American program which can do exactly that.

Quarterback Tools is an invaluable utility which compresses even the largest of files, automatically requesting new floppy disks as it requires them. It achieves the highest rate of compression possible, but to do this it creates disks which cannot be read by the standard Amiga DDB. Most of the time this isn't a problem, but sometimes it can be inconvenient - especially if you want to copy a single compressed file to another disk.

Quarterback Tools costs £52.13 plus VAT and can be bought from HB Marketing, Concorde Building, Unit 3, Payls 14, Colnbrook, Bucks. SL3 0LX.

PowerPacker PROFESSIONAL

Version 3.0a
 Free Copy : 1946952 File Name : Shellz
 Lumped : 1934952 File Length : 11524
 Free Test : 1628648 OverScanned : 23889
 Lumped : 1474712

Scanning file "000:Shellz"
 Loading crunched command file...
 Decrunching command file...
 Done.
 Decrunched length : 23889 bytes.



Powerpacker is one of the newest compression programs, and has undergone several revisions and tweaks.

SED is an excellent disk utility, which supports five popular archivers and also allows you to restore files from an archive.

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III ONLY AMIGA GUIDE WORTH READING. . . .

blue pages

contents...

The Blues are back with a distinctly new look. We've had a major rethink of these pages over the last couple of months and have radically revamped them to appeal to both the hardcore enthusiast and gamer alike.

So what's new?

For starters, we've introduced a number of new columns. This month sees the start of regular monthly features on DTP, Programming, Education and Comms, and there'll be several others beginning next month, too. Don't worry if you're new to the Amiga, as each column will start off with the basics before moving on to more involved matters. Buyer's Guides, walk-through guides and software charts round off the package, so read and enjoy. . .

172 JOYSTICK BUYERS GUIDE Stuck for a really thoroughbred stick that doesn't go wonky after less than a week of waggling? Then read our comprehensive Buyer's Guide where we've put fifteen top sticks through their paces to find which ones make the grade.

176 BACKCHAT CU Amiga's letters pages have often been noted for allowing our readers to let off steam, and this month is no exception. Why not join in the arguments already raging or create some controversy of your own?

178 STEP-BY-STEP This issue heralds the start of Step-by-Step. Here, we'll be printing user guides to some of the most popular PD utilities which often come without proper documentation. If you're stumped on how to get the most out of a particular PD program, drop us a line and we'll attempt to explain all. To begin with, we take a look at SID, the popular disk organising utility.

180 HARD DRIVIN' If you've got a Hard Drive but don't know what to stick on it, here's a mini-Buyer's Guide to the best of HD-installable games for your machine. If it isn't here, it's not worth the bother.

182 QUESTIONS AND ANSWERS If the Amiga was a specialist subject on Mastermind, Matt Broomfield would be laughing. As it is, he's here each month to answer your questions and solve your problems.

187 DOCTORIN' THE DISK Our three part look at the innermost workings of floppy disks reaches its conclusion, with Nick Veitch explaining how to repair a disk once it's been damaged.

188 PROGRAMMING If you don't know ARexx from Andrea, then Nick Veitch is here to set you straight with the first in a series of features on the Amiga's most powerful programming language.

191 DTP It's that man Nick Veitch again, this time giving you the benefit of his in-depth knowledge of all-things DTP. If you've ever wanted to start your own magazine or design your own business cards, Nick's here to chart the way.

194 COMMS Dave Burris asks 'Who ya gonna call?' in the first instalment of his regular Comms column. This month, you'll find a beginner's guide to setting up your Modem and communicating with the rest of the Amiga fraternity via the telephone lines.

196 INSIDE INFORMATION If games are your thing, read the only column that matters. Each month Rik Haynes looks at the most exciting technical advances in games entertainment and casts his mind back to bygone times when men were real men, women were real women, and 16-bit games were, erm, not very good actually. . .

199 SOFTWARE CHARTS There back! Yep, read the definitive software charts, as we list the top twenty movers and shakers as well as the best budget buys and what the CU AMIGA team are currently playing.

200 EDUCATION An area often neglected by other magazine, Mike Gerrard is on hand to begin the start of another regular column. This month, Mike takes a look at the uses to which the Amiga is being put in schools and colleges up and down the country.

202 POINTS OF VIEW Points of View also returns, which gives industry figures an excuse for a good rant about anything they feel like getting off their chest. This time LOGIN's European Editor, Rik Haynes vents his spleen over the sorry state of games development. He's not going to make many friends, that's for sure. . .

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sticky moments



PART 1

There's no such thing as the perfect joystick, but some come closer than others. In the first of a two-part feature, CU put a selection of the finest joysticks through their paces.



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Buying a joystick is easy. Buying one that doesn't fall apart or stop working within a week is another matter entirely. Faced with an endless array of rubber-necked wonders, each with its own ergonomic design and outrageous claims of longevity, it's a thankless and costly task choosing which one to pit against the likes of *Project X*, *Speedball II* or *Rainbow Islands*.

If you're fed up forking out a small fortune each month to replace faulty joysticks, then fear no more! CU's crack team of wagglers have been busy over the last two months putting some of the finest joystick that money can buy through arduous routines and subjecting them to literally hours and hours of solid play. The result of all this waggling? Probably the most comprehensive joystick reviews ever! To make things easy, we've given each joystick an overall score as well as marks for innovation, durability, ease-of-use, comfort factor, and responsiveness.

1 SURESHOT STANDARD

Street Price: £10.99

The handle's microswitches give an excellent response and, coupled with the stick's self-centrizing system, steel shaft and pistol grip, can't be faulted. It's double-eight figure fits the hand well and the thing even looks the business thanks to a transparent plastic casing.

On the down side, the leaf spring firebutton gives little tactile feedback and is awkward to press for any length of time. Cord length, at just over five feet is a bit on the small side, and the lack of an auto-fire facility is a distinct drawback. It's essentially a hand-held device as there's a lack of suction cups underneath the base of the machine. Instead, the stick is graced with supposedly non-slip rubber pads which slip and slide about a tabletop like Torvill and Dean in their heyday.

VERDICT: Looks the business, but fails to meet expectations.

INNOVATION	81%
DURABILITY	72%
EASE-OF-USE	77%
COMFORT FACTOR	80%
RESPONSIVENESS	72%

OVERALL 75%

2 THE BUG

Street Price: £14.99

The Bug certainly lives up to its namesake: it's incredibly tiny and would be an ideal starter stick for a young child. Suitable for either left or right-handed players, the device comes with a five-foot cable and two firebuttons placed at the front of its compact body. These are activated by the player's thumb with the stick's shaft conveniently located towards the centre of the device. The main failing of the stick is its abysmally short shaft which allows little or no grip and, therefore, a subsequent loss of control. If only manufacturers would realise that a knobby end and long stick are essential ingredients in a successful joystick and not sacrifice such aspects for gimmickry such as this.

VERDICT: Looks cute, but plays like a brick.

INNOVATION	40%
DURABILITY	60%
EASE-OF-USE	30%
COMFORT FACTOR	70%
RESPONSIVENESS	59%

OVERALL 52%

3 TORTOISE

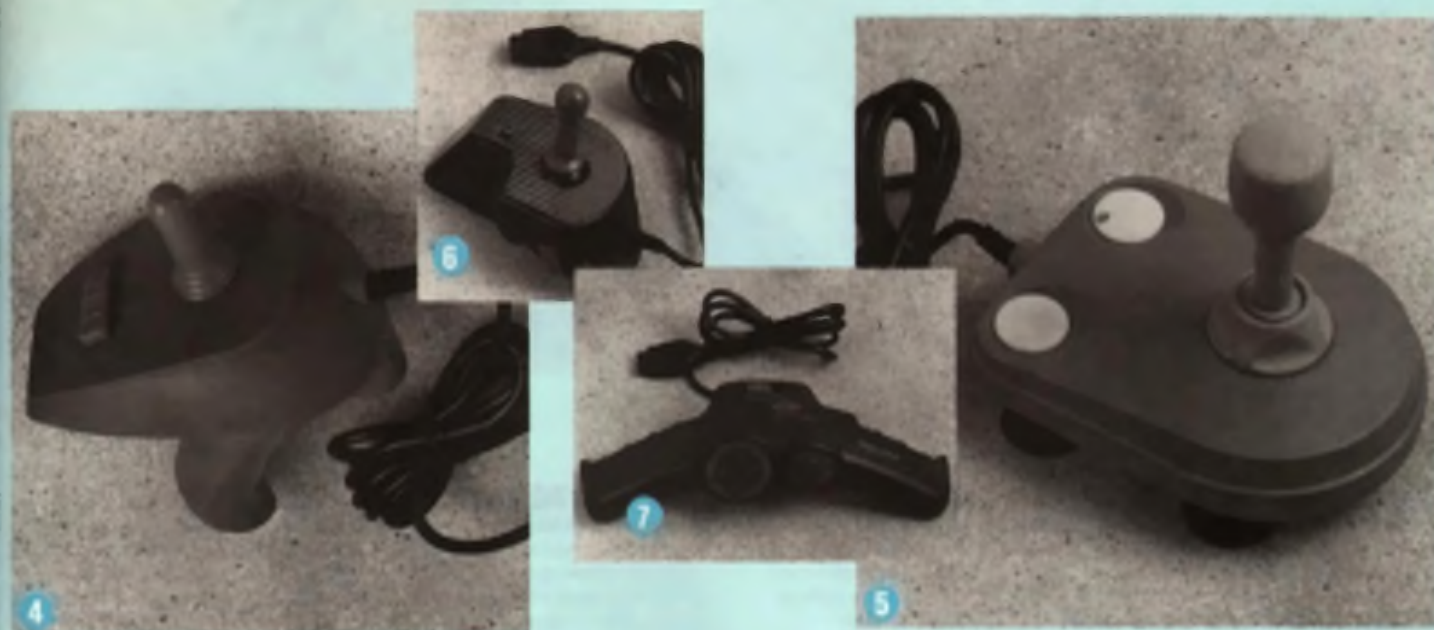
Street Price: £19.99

This looks and plays like a joke. Obviously aimed at the preteen age-group, the Tortoise consists of two units: a heavy duty stabilising body and an 'ergonomically' shaped control 'shell'. The hand is supposed to sit smoothly over the shell at the top of which are three fire buttons to stab at. Movement is engineered by rocking the shell from side-to-side and top to bottom, but this proves a cumbersome and ineffective control system which soon becomes tiresome. Also, it's doubtful that small hands will get the most out of this device as they would probably fall short of the firebuttons due to the bulky nature of the shell.

VERDICT: One to avoid!

INNOVATION	90%
DURABILITY	10%
EASE-OF-USE	10%
COMFORT FACTOR	10%
RESPONSIVENESS	10%

OVERALL 11%



4 NAVIGATOR

Konix Price: £15.32
Despite its weird design, The Navigator fits the shape of the hand almost perfectly and gives a pistol-like grip. With the firebutton positioned conveniently close to the user's trigger finger, rapid firepower is yours for the taking. Fully-functioning microswitches also mean you can hear and feel every click and movement you make.

My only real criticism, and it's a biggie, is the swirl shaft. It's just too tiny and doesn't allow the user to get a good grasp of it during play. Consequently, precise movement isn't really on. Moreover, although the shaft is made of metal, the model under test broke down after only three hours of use. Not a very good recommendation, I'm sure you'll agree.

Cable length is a very good five-and-a-half foot and the autofire mechanism kicks in when the firebutton is held down, ensuring a constant stream of bullets during play.

VERDICT: Strong on ergonomics, weak on playability.

INNOVATION	88%
DURABILITY	45%
EASE-OF-USE	63%
COMFORT FACTOR	88%
RESPONSIVENESS	62%

OVERALL 68%

6 CRUISER

Powerplay Price: £10.99
The Cruiser has long been a favourite of mine. These days, the stick has metamorphosed from its sleek matt black beginnings into a multi-coloured machine which boldly mixes pinks, blues and greens in a tasteful display of overstatement.

The basic stick is still very much intact, though, and offers an easy-to-grasp handle coupled with solid construction and a special twist lock at its base which offers three different resistances: loose, medium and stiff. This is probably the stick's best feature, allowing you to alter the resistance to suit the type of game you're playing. For instance, if you fancy a game of Speedball 2, a stiff setting will allow you to turn your players on the spot, while flight sims are best played with the joystick set to a loose setting, allowing for gradual movement rather than short, staccato bursts.

The lead is an acceptable five footer and the base of the machine fits snugly in the palm of the hand. There are also four suction cups at the base of the stick to help affix it to your table-top if you should so require. Two microswitch fire-buttons and directional control provide the icing on the cake.

VERDICT: Overall, a brilliant stick, which stands up well to some serious waggling.

INNOVATION	70%
DURABILITY	87%
EASE-OF-USE	87%
COMFORT FACTOR	78%
RESPONSIVENESS	82%

OVERALL 85%

5 SPEED KING

Konix Price: £12.25/11.25
Superficially, this looks cheap and shabby. Even its markings are the result of transfers overlaid on to the moulded plastic of the main body. Aesthetically, it's a non-starter, but once you've summoned the courage to remove the L-shaped contraption from its box, it fits rather nicely in the palm of the hand with the thumb occupying a special groove and the index and middle fingers centred around the firebutton.

During use, the stick gave a very good tactile response and the microswitches worked well. From my initial misgiving, the Speed King quickly became one of my favourite sticks and proved adaptable to any type of game, whether it be a platform jumper or an aircraft sim. At six-foot, the lead was one of the longest we had in for test. Models are available with or without the autofire feature.

VERDICT: Looks aren't everything. Definitely worth a test.

INNOVATION	70%
DURABILITY	85%
EASE-OF-USE	80%
COMFORT FACTOR	90%
RESPONSIVENESS	80%

OVERALL 82%

7 CONTROLLER

Quickshot Price: £9.99
Quickshot proudly boast that they've sold more than 20,000,000 joysticks worldwide. Over the years, they've built up a reputation for sturdily-built sticks, each with its own 12 month guarantee, and they've an incredible range of models to suit most tastes and pockets.

Having said that, they've just tarnished their reputation by releasing a completely ridiculous stick. It's both clumsy to use and awkward to hold—the idea of death in joystick terms. It's a double handlebar grip is too small for an average-sized hand, especially when both thumbs are needed to operate the joystick and firebutton positioned towards the centre of the stick. There is a second firebutton, positioned on the underside of the stick and operated by the index finger, but it's in such an awkward position that you'll soon tire of punching the pad.

Due to the lack of microswitches, you don't get such a tactile feedback while the stick's in use, and the four-foot cable length is a bit on the short side. The joystick is also a pain—I've never got used to them, even though I own a Famicom, and much prefer the more traditional joystick control method.

VERDICT: It's solid construction is about the only nice thing that can be said about the Controller.

INNOVATION	80%
DURABILITY	88%
EASE-OF-USE	45%
COMFORT FACTOR	34%
RESPONSIVENESS	46%

OVERALL 37%

Hi Quality Version Available on AMIGALAND.COM

sticky moments



9 PROF 9000 DE LUXE

Euromax Price: £34.95

The first thing that's noticeable is the springy feel of the stick. It has just the right amount of travel for a good bash at virtually any fast-paced arcade game and the fire-button perched on top of the shaft is in easy reach of the thumb. There are also two buttons on the base of the machine, and the left one of these alters the rate of autofire by turning it clockwise or anticlockwise. Strangely, though, the base and stick buttons cannot operate at the same time.

The long thin shaft means you can easily wrap all four fingers around it, but the cord length is a real bit too long. The shaft's microswitches give a positive feedback to movement, but the leaf spring fire buttons once again prove a disadvantage in measuring performance. It's especially noticeable on shoot 'em ups where you need to constantly monitor your firing rate - with a leaf spring this is almost impossible.

VERDICT: Smart and stylish stick with plenty of manoeuvrability.

INNOVATION	78%
DURABILITY	88%
EASE-OF-USE	89%
COMFORT FACTOR	81%
RESPONSIVENESS	88%

OVERALL 85%

8 ZOOMER

Euromax Price: £80.95

The Zoomer is a specialised stick aimed at flight and driving games. Its yoke resembles a steering wheel with both top and bottom bits cut away. It's not small, as its 30cm tall by about the same length wide. Fine buttons are located on top of each arm and there's an auto-fire knob on the base of the machine. Four suckers keep everything stable and the cable is a good six-foot long.

I found that the Zoomer greatly enhances the realism of flight simulators and driving games. The handle itself has appreciable sideways motion but the vertical axis is considerably less mobile. Because the up/down and left/right movements are so different to each other, it overcomes the problem of sensitive joysticks which dive when they should be turning and turn when you want them to climb.

It's not really suitable for the likes of *R-Type* and *Speedball*, but load up *Flight of the Intruder* or *F15* and you'll have a ball. It definitely adds a new dimension when playing these type of games.

VERDICT: Costly, but essential for flight and bike sims.

INNOVATION	98%
DURABILITY	89%
EASE-OF-USE	89%
COMFORT FACTOR	89%
RESPONSIVENESS	93%

OVERALL 92%

10 SWITCH JOYSTICK

Gravis Price: £39.99

A little too big to hold in the hand, this table-top joystick certainly offers a multitude of features. The first thing to notice is the foam-padded pistol grip with built-in firebutton. As well as feeling incredibly comfortable, it also offers a firm grip and moulds itself to your hand.

The stick comes with a very sophisticated tension adjustment system. This allows the user to set the amount of tension or resistance provided by the joystick handle. Ten settings, which range from loose to stiff, ensure that there will be a nice crisp setting with suits your playing style. In addition, the tension adjuster also reduces the travel distance or throw of the stick, making it ideal for flight sims and arcade games alike. Restricted movement allows for faster reactions such as those needed in arcade-orientated games, while the softer settings provide smoother movements suitable for flight simulators and driving games.

Trigger points are automatically set depending on the tension adjustment. When the stick is set at a loose setting, a greater amount of handle deflection is needed before a response is triggered in the game. It's also possible to manually adjust these trigger points for even more controllability. There are also three fire buttons, two located on the base of the unit and one perched on top of the handle. Button selectors at the side of the machine allow the user to independently select each fire button's function, ranging from normal fire and auto fire capabilities to forward and backward movements.

All these features add up to one hell of a joystick. A six-foot lead, solid construction, and a pleasing design help add further to the stick's appeal. Although quite costly, this is worth the investment.

VERDICT: A superior stick with more options than the Stick Market.

INNOVATION	95%
DURABILITY	88%
EASE-OF-USE	85%
COMFORT	85%
RESPONSIVENESS	90%

OVERALL 92%

11 STING-RAY

Logic 3 Price: £13.99

When the Sting-Ray joystick was first released, it caused quite a stir, due in no small part to its absurd styling which makes it look like one of those rayguns that Flash Gordon used to brandy about in those crumbly black and white early-morning sci-fi serials. Despite such unfortunate comparisons, or perhaps because of them, the Sting-Ray has gone on to become quite a popular joystick.

It fits the hand in a similar fashion to a revolver with the handle reading in the palm of the hand and the index-finger ideally placed over the firebutton. On top of the 'barrel' is the joystick's shaft, topped off with a knobbly piece of plastic for the grip. Overall, its design is akin to Konix's Navigator, but the knobbly end to the shaft makes it an altogether more controllable affair. An auto-fire button is also perched atop the machine together with two thruster buttons fixed to each lin. When pressed, these are reputedly meant to make you speed up, but they're placed in such a ridiculous position that it's doubtful whether you'll ever call them into play. A six-foot cable rounds off the package.

VERDICT: Once you've become accustomed to the design, it really is a nice stick. Expect ridicule from friends.

INNOVATION	85%
DURABILITY	73%
EASE-OF-USE	78%
COMFORT FACTOR	80%
RESPONSIVENESS	76%

OVERALL 79%



Hi Quality Version Available on AMIGALAND.COM



15 SIGMA-RAY

Logic 3 Price: £14.99
This one has the best grip of all the joysticks we tested. The pistol grip fits the contours of the hand beautifully, with both fire buttons within easy reach. There's also a couple more placed at the base of the stick, just for good measure, as well as an auto-fire switch and single-shot option button. Style-wise, this is the pick of the bunch, and in play the stick also excels, proving to have just the right amount of tension for flight sims although not quite so hot for arcade-orientated games.

In-built microswitches ensure a positive feedback and the suction cups allow for table-top play as well as hand-held action. Cord length is a minuscule four feet, but the overall layout of the stick more than compensates for such shortcomings.

VERDICT: Nice looks, solid construction, good value.

INNOVATION	85%
DURABILITY	89%
EASE-OF-USE	85%
COMFORT FACTOR	92%
RESPONSIVENESS	82%
OVERALL	89%



13 THE ULTIMATE

Euromax Price: £34.95
When we reviewed this in October last year, Dave Kelsey reportedly raved about the machine's 'superb styling and rugged construction'. I can only assume he was the victim of some hallucinogenic drug, as my thoughts couldn't be more different. Obviously not a hand-held model, this table-top device is incredibly ugly and cumbersome. Admittedly, its spherical hand-grip proves to be a worthy feature when compared to some of the other sticks we've reviewed this month, but its unresponsive fire buttons give the machine a decidedly dull feel.

Perhaps its best feature is a variable-speed autofire button which can spit out a super-fast hail of shots at its top speed. Unfortunately, the machine also has its fair share of minus points and the unresponsive helm makes arcade games a positive chore. Although it has a whopping six-and-a-half foot lead (mistakenly put at 10 foot on the packaging!), the rest of the machine doesn't live up to expectations. I found it slow to respond to tugs on the joystick shaft and rather too bulky for its own good.

VERDICT: If you want a table-top joystick, look elsewhere.

INNOVATION	50%
DURABILITY	70%
EASE-OF-USE	70%
COMFORT FACTOR	62%
RESPONSIVENESS	55%
OVERALL	57%

14 SUPERPRO ZIP STIK

Sonmax Price: £14.99/13.99
This is the stick I've been using for the last year and it's still going strong. Two fire buttons placed at either side of the unit mean that both right and left-handed players can use it, and the solid construction means the stick can put up with as much wiggling as you can possibly throw at it. Even Ocean's aging *Daley Thompson's Decathlon* would prove no problem to a stick of this stature.

The stick's long shaft and knobby top prove invaluable in overall control and helps afford a nice, comfortable grip. Micro-switched throughout every top button in a nice, tight response and an auto-fire feature provides rapid bursts or a continuous stream of bullets. From *Speedball II* to *R-Type*, from *Project X* to the *Addams Family*, the Zip Stik handled all-comers.

About the only criticism that can be levied at the stick is its paltry lead of just over five feet. But that's nipping - play and enjoy.

VERDICT: An essential purchase. The undisputed King of the sticks.

INNOVATION	79%
DURABILITY	91%
EASE-OF-USE	92%
COMFORT FACTOR	92%
RESPONSIVENESS	96%
OVERALL	95%

11 THE ARCADE

Euromax Price: £19.95
Another firm favourite in the CU office. The Arcade has proved remarkably resilient to more than a year's worth of constant use. The fact that it has survived such duress is a testament to its sturdy construction and solid design.

What you get for your money is a pretty basic stick with one fire button and a long shaft with ball-handle. It might not be much to look at, but it plays superbly well and, if it wasn't for the leaf spring fire button, would be one of the best sticks available. The lack of options comes as a welcome relief as it seems to be the fashion these days to incorporate as many unnecessary gimmicks as possible merely to artificially bump up the price.

The back-to-base approach is to be widely applauded and the matt black appearance of the machine, together with its triangle design, gives it a certain style all its own.

VERDICT: Tough, resilient and very manoeuvrable.

INNOVATION	60%
DURABILITY	89%
EASE-OF-USE	89%
COMFORT FACTOR	84%
RESPONSIVENESS	87%
OVERALL	86%



NEXT MONTH

In the second half of this feature, we'll be reviewing yet another 15 sticks that have had to endure a tour of duty in the CU office. We'll also be announcing the winner of the CU AMIGA Joystick of the Year award. So join us next month for another spot of wiggling.

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BACKCHAT

COMMODORE KICKED

Am I the only person who hasn't fallen for Commodore's plentiful hyperbole? All that crap about the success of the CDTV and non-existent compatibility problems of the A500+ - who are they trying to kid! The CDTV has got to be the biggest pile of rubbish I've seen. I'm fortunate enough to work in a computer shop and, as a result, get to see all the latest software and hardware releases in detail - and if ever a piece of kit was to be labelled a Dodo, it's the CDTV. OK, so the software is to blame as none of it is really up to the potential of the machine, but even so the unit is overpriced and pretty much redundant. The idea of the CD medium is an excellent one, but as Commodore don't seem that worried that the software currently available is tripe, it will be their own fault when it burns to zero up. And when they finally get the 500+ done out, will do they really think that all of a sudden everyone will support it? I don't think so...

As for the 500+ faeco, this seems rather similar to the future that surrounded the release of the 128K Spectrum a few years back. 'Complete compatibility', the Sinclair

said shouted 'Rubbish' claimed poor old Joe Public. I bet Commodore laughed their socks off when this happened - but it's funny how they are keen to play down the current incompatibility. Apparently, there are a mere tens games which won't run on the new machine - yeah, only because they've all been updated for the machine's launch. But, even so, there's dozens of games which still won't work in the Amiga. Commodore have an excellent machine - and there's more than enough people out there willing to support it. All I ask is that they bear the public in mind more often - after all, we put them where they are today...

Name and Address Supplied

INCENSED LICENCE...

In reply to Milton Andrew letter regarding improvement in game licensing - what complete rubbish! The computer game arena has now got to the stage where the lack of imagination in design teams means that film or TV adaptations fall into two distinct groups. I'm not talking about good and bad, but cutesy or multi-level. If Ocean, U.S. Gold or whoever aren't ripping off RoboCop in a totally unrelated game, they simply

take a few scenes and turn the game into a puzzler, a blaster, and a platform game. Who knows what will happen when The Waitone is turned out for licence. I can imagine the advert now: See Jim-Bob leap through the air, squashing the developers who want to pull down Pa's workshop with his backside. Gasp as Mary-Ellen drives her push bike up a vertically-scrolling stage so that she can buy some flowers for her Mom. Work out the tricky puzzle surrounding why every episode is the same... Don't laugh, it could happen! Why not, after all *The Godfather* turned into a bland shoot 'em up and *The Addams Family* seem to be Mario's long-lost cousins from what I've seen.

Only one licence has tried anything new, and that is Ocean's *RoboCop III* - it even beat the film with its release date! Unless something happens soon, people like Dan Sinyard, and the two Samms (Merrill and Keen), will be writing 'not another cutesybitty licence', and the day that happens is the day I sell my Amiga and buy a Megadrive before it turns into one.

Jackie Mimms, London

It's this kind of letter that makes Backchat worthwhile. I can see a

little development team's eye lighting up right now at the thought of your proposals for The Waitone game. Still, don't be too harsh on the cutesy games as they are still very playable, regardless of how well they tie in - although I suppose, on reflection, that does make the over-priced licence a little redundant. However, on the side of Ocean, U.S. Gold and so, they are trying to add variety, as witnessed in *Robo III*. And Gramin's *Pian 9* has also taken a different route, so don't sell up just yet...

IMPORT-ANT?

I've noticed in recent issues of CU that a lot of your reviews are of imported utilities. The most recent example of this was your Turning Japanese review. OK, so we can order these from the overseas companies, but it's a costly and time-consuming business. Is it possible to organise ways for us to get hold of the packages more easily? If not, how about reviewing them when they are officially available? Ian Glynn, Southampton

Most of the imports we review are already available in Britain. If there's anything you're interested in, then ring around the assorted mail order people or visit your local software emporium and ask them to order it for you.

SOUND INDEED

Many thanks for the April issue's music feature. It contained everything I needed to know about this potential minefield. However, what I would have liked to have seen was a piece on famous pop people who use the Amiga for sound. I know the ST is used more because of its MIDI capabilities, but apparently the Amiga's flexibility is starting to win it more fans. So how about a list of such people? Gavin Vincent, Glasgow

We were going to incorporate such a list into the feature, but the truth of the matter is that very few musicians actually use the Amiga. Whilst the likes of Julia Fordham, The KLF, and Imagination (remember them?) use the ST, we could



FULL GAME PLEA

Who do decide that full-price games can't go on disk? I'm currently unemployed, and have been for eighteen months. Consequently, I can't afford to buy all that many games and what I buy, as much as I can (hoorah for Kixx and The Hit Squad), I particularly liked the trend of giving away free games on magazine cover disks. OK, so they weren't exactly World-shattering in terms of quality (need I mention *Human Killing Machine* and *Alien Movers*, but occasionally the odd gem turns up. However, someone somewhere has decreed that full-price games no longer have a place on a cover disk. Why? What harm were they doing? Everyone I know used to buy them for the games, and adding to the money, there now stands the full utilities appearing on the disks instead. This smashes double standards as it's simply banding rather than breaking their laws. So, is there any chance of a full game on your disk again? I certainly hope so.

Neil Benson, Surrey

Personally, we are against full-price games AND utilities on the disk. Yes, we know that *Sculpt 4D Junior* and *Powerpacker 3* are gracing this month's disk, but the main reason they are there is to compete with the other magazines which are giving away utilities. We have to do this in order to compete, but we feel that giving away a full piece of software cheapens its worth slightly - after all, someone slogged their guts out to release it in the first place, and then it's given away. Another thing is: just how many of the given packages are actually useful to you? After all, there are only so many who will use a sampler or word processor, and what about the rest? As long as the daft competition and rivalry between magazines and their disk content continues, then CU will be obliged to compete - either that or look like an unworthy rival. We are by no means an inferior magazine and our sales prove this, but because someone got it into their head that they ought to give away a utility or game to bolster their sales, editorial content is no longer seen as the ultimate sales point. A pity really...

GOT SOMETHIN' TO SAY? CU AMIGA is the country's fastest-growing magazine, and therefore the premier forum to air your views on anything connected with the Amiga scene. Your comments can make a difference so don't be indifferent, drop us a line today.

only come up with Snap using the Amiga. In addition, Snap's usage of the machine is very blatant, and we only have Demomore's sword to go on.

WHAT A PIG...

I've seen it all now I was flicking through my April copy of CU having read the bulk of it, and came across your blue pages section. In my search for Q&A I stumbled across an ad page and was horrified by what I saw. Next to the usual classified ads and 0830 computer-related phone lines in Sell Out, there's a picture of a woman sitting on a Pig's lap with the title 'Confession Line' above it. Quite what relevance these have to anything to do with computers is beyond me. Do you really think that the kids who buy your magazine should be encouraged to ring up and find out the story behind the sketch? Come on guys, give us a break and drop these childish lies. They don't exactly bolster your 'adult' image do they?

James Connel, Dudley

Hehheh, we can't seem to get Steve Keen off the phone to them...

RPG BIAS?

There seems to be more and more RPGs appearing in your magazine these days. At one point, adventure fans were lucky if they got a page dedicated to their favourite genre, but these days they seem to be out-weighting arcade games. I'm not complaining, but it seems that too many arcade games seem to be getting left out of your pages in favour of the RPGs. For instance, past issues have seen massive reviews of *Dark Crypt*, *Castles*, *Eye Of The Beholder*, *Sherlocklands*, and *Monkey Island*, whilst you seem to forget the likes of *Bonanza Brothers*, *Big Run*, and *Darkman*. After all, if you had told me just how bad *Darkman* and *Big Run* were, I would never have bought them.

So what's the reason for this new adventure lull, then? Are you abandoning us arcade fans as you get more and more technical? I hope not,

as your reviews are easily the one I agree with the most. So come on, give us some more arcade exclusives.

Peter Glain, Wigan

It's not a conscious decision, but we do feel that as we are limited on space, we have to be selective in what we review - after all, there is only so much we can write in a month! The reason we ignored *Bonanza* and *Darkman* is that we felt they didn't warrant mentioning (although most magazines seem to think that *Bonanza* is the best thing since Frull'n'Fibre - strange chaps...). As a rule - but obviously this isn't always the case - if we don't cover a game, it's not worth covering. However, if you're still interested in a title we may have missed, then go to the shop and try it before you buy it - it's saves a lot of heartache and money.

BASIC MATHEMATICS

What on Earth was the *Mathvision* review about! Now I'm no expert on fractals and Mandelbrot's (or whatever they're called), but it strikes me that they serve no other purpose than to look weird. I've been through your *Mathvision* review at least four times now, and still can't work out what Earthly use it has. Also, just how practical is a package which the reviewer freely admits can take hours to display a picture? If you ask me, *Mathvision* is a complete waste of time, and it didn't deserve the three pages you gave it. Especially, when two hard drives were crammed into single page later in the issue. In future, I'd much rather you left the fractal stuff to the acid-headed Hippies who appreciate it - preferably in another mag...

John Bassett, Lincoln

Billmy, keep your hair on! We try to cater for all tastes in CU, and as fractals are starting to take off in a big way it's obvious that we have a responsibility to cover any new advances - that way we can criticise them if they are indeed useless and unwieldy. This was the case with the *Mathvision*

review. Yes, it does look good, but, as we said many times, what good is it? I'm sure fractal fans will argue with us, and if that's the case, they know the address...

SCREEN OF THE MONTH! PAH!

I've been reading CU for over two years, and it has grown as I have from a games-only mag to an all-round interest in the Amiga. However, whilst everything about the mag interests me (although I'm left a bit bemused by some areas), there is one area that really lets your magazine down - The Screen Of The Month. Who picks these? Steve Wonder, by the looks of things. Admittedly, April's piccy of the Fish was good, but some of the pictures have been no better than a seven-year-old's first attempt at using crayons. There was one in particular which stuck in the mind: it was a picture of a tree drawn in grey, with a grey backdrop, and numerous other shades of grey. Why did this win? Was it the only entry you received? Anyways, whoever it is that selects them, shooting a lode good for 'em. Dear Melissa, Gilmorgan

If I were you Dean, I'd sue them. Your charm school, that is...

SHOWING OUT

I read with interest the letter from the guy who said 'get down to a computer show if you want to get loads of kit cheap.' Yeah, that's all very well, but why is it whenever I go to a computer show I spend hours queuing (normally in the rain), and, by the time, I get into the hall or arena, it's packed to the gills with literally thousands of equally fed up people. There's virtually no way of getting to the assorted stands or stopping to have a look at what bargains are on offer, and if I do much as pause to tie my lace up, I'm either trampled to death or swept along like a drowning bit-part actor in *Baywatch* (I just wish there was someone blonde there to rescue me!). So what's the solution? Is there a way I can get past the massing crowds and get my freshly acquired copy of *RoboCop III* home in one piece? If not, it would make me feel better to know that I may see you lot in the queue, too! Michael Gingold, Canterbury

Nope, you've got absolutely no chance of seeing us in the crowd as we're fortunate enough to be given Exhibitor passes. If you desire one of these much sought-after goodies, just book a stand and you're away! But seriously, if the queues are your main problem, most

shows can supply tickets in advance which save you from the dreaded queues. You're still going to get heated and bumped inside, but if you have a ticket AND turn up as soon as the show opens, you'll get an hour or so before the real queues in. There are always ads for forthcoming shows, and ticket details are shown at the bottom, so simply send a cheque and - voila! you're away...

A PIRATE RANTS

Once again, you're another mag that preaches on and on about how naughty we pirates are. 'Tut, tut, alas their wiles, what naughty people!' - you magazines really make me sick. The reason I pirate games is simply because I can. I'm not going to pay thirty quid for, say, *Populous II* if I have to do it get a mate to run me off a copy - I've got better things to do with my money. I don't even agree with the so-called hackers who say we only do it because games are so dear, if they were cheaper I'd buy more. Rubbish, my collection has nearly every game available on the Amiga in it - budget releases included. After all, even if I save seven or eight quid, it's still more for me. I had *RoboCop III* before it was in the shops, I had *Rainbow Islands* before Ocean got it from Microprose. You name it, I've got it.

The argument that people like Ocean and Microprose will go under because of people like me is complete crap. I started with an Atari 800XL and all my games were copied then - Microprose ones included. And when I updated to the ST, I carried on copying. What I'm saying is that piracy obviously doesn't harm these companies as they would have gone under by now. I'm sure you won't agree and will rave on about what a bad lad I am, but that will stop piracy about as much as Ocean's *RoboCop III* dangle!

A. Nonymous, No Fixed Abode

A. Nonymous - A. P!r!t!k, more like! You're about original as you are clever. You state that you've been copying games since you've owned an Atari. What are you after a medal? The main reason the Atari 8-bits failed was because of the lack of software available for them - why? Because people copied it all the time. So now tell us that it doesn't damage the industry. By printing your letters we hope we've inflated your pathetic ego - and shown others what a parasite you are...

get organised

When it comes to directory utilities, SID is among the best available. Mat Broomfield guides you through its inner workings.

EASY DOES IT...

SID helps simplify and speed up the operation of frequently-used AmigaDOS commands such as Copy and Edit.

All but the simplest AmigaDOS routines must be operated from CLI or Shell. Not only does this involve typing, you also have to remember the format of the many commands. To combat this, SID uses an icon-driven display, with all the main commands accessible at the click of a mouse button.

MENU MASTER

Once the program has loaded, the screen is split into five distinct areas. The largest two display the directories of two drives, while the rest display details of menu bars, path fields, a command palette, and an extended selection of functions gracing the bottom area of the screen. The most important parts, though, are the directory windows and the command palette. These offer control of most of SID's functions, and does away with the finicky typing usually involved in such operations.

Using these options, SID can perform many useful functions. As well as moving files from disk to disk, it can be used to edit files or examine them. To get started, place a disk in the drive, and click on one of the command palette's device buttons. These allow the user to view the contents of any attached Amiga drives, including Hard Drives and the RAM Disk. On a single drive machine, though, it will be automatically configured to run from DFO.

PART 1

Beneath each of the directory windows, you'll notice that the device names are repeated. This means you can view the directories of two disks simultaneously.

On selecting your drive, after a few seconds loading, the current window will list the disk's contents, and a scroll bar will allow you to move up and down the list if there are lots of files. As the names appear, they are displayed in two different colours. Any name with a number following them, are the individual files, and the numbers denote their size, whilst shaded names are further directories, which must be opened before their contents can be viewed.

EDITED HIGHLIGHTS

On clicking on one of the listed files, its colours will be inverted so that it is contained within a lighter bar. The file is now selected and is ready for whatever operations you deem necessary. For instance, if it's a text file, clicking on the Read option will enable you to do just that, and, similarly, picture files can also be viewed.

Some functions (such as copy) can't be performed when only one directory is loaded, so another directory must be loaded with the secondary device button under the currently empty window. As the new directory loads, you'll notice the big arrow between the two device bars flips to point in the opposite direction. This is called the flow arrow, and shows the direction that information will travel when dual directory options are invoked. As only one directory window is active at a time, the flow arrow always points towards the most recently activated drive. To alter this, just click

anywhere within the other window using the right mouse button.

Once you have two directories listed, you are ready to use the Copy and Move functions. Simply highlight the files to be copied or moved, and click on the appropriate button in the command palette. Whenever you select a file, its window becomes current, and the copy and move commands will transfer data to the other directory.

SPIEDY GONZALEZ

There are a number of ways that you can speed up the process of calling a directory list. If you double-click on a directory name (within a directory window) SID will automatically replace the current listing with the contents of that directory. You can also quickly recall the previous listing by moving the cursor to the extreme edge of the current directory window, and clicking the left mouse button.

Above the flow arrow, you'll notice three buttons each containing smaller arrows, (< <> >). These let you copy the directory listings from one window, directly into the other. For example, if you click on the right-facing arrow (>),

the contents of the left-hand window will be copied to the other. The double arrow in the middle, simply swaps the contents of the two windows. Another way of calling up a directory, is by clicking inside the Path Field, and typing the name of the directory you want to view, (having made sure that you deleted anything that was already there).

As mentioned earlier, the numbers following a file name inform you of its size. However, you can find out other useful information, too - for instance, what kind of file they are or when they were created. To do this, put the cursor anywhere inside the extended function bar at the bottom of the screen and click the left mouse button. You'll see a fresh selection of six options, again duplicated for each window. Although the default option is Size, you can alter it by clicking on one of the other choices.

If you're multi-tasking SID with other programs, you'll be interested to know that it can be switched on and off without constantly reloading it. Simply click Shrink in the menu bar at the top of the screen, and it will be reduced to a tiny easily-ignored bar while you use your other programs. To reactivate it, click Expand to restore it to its normal size.

Next month we'll be looking at the configuration file and finding out how you can customise SID for your exact requirements.

ADDRESS BOOK

You can buy SID from any decent PD retailer. I got mine courtesy of PD Soft, Bryant Avenue, Southend-on-Sea, Essex, SS1 2YD. Price: £2.50 (including P&P).

COMMAND SUMMARY

All of the options in the command palette will only work with highlighted files within the CURRENTLY ACTIVATED WINDOW.

- PRINT** Prints the selected files. Only works with ASCII text files.
- EDIT** Loads the selected files into a text editor ready for editing.
- EDIT** Loads the selected files into a hex editor ready for hex editing.
- VIEW** Displays the selected FF screens. **HEAD** Displays the selected text files.
- VIEW** Displays the selected files in HEX and ASCII. **HEAR** Plays the selected FF samples.
- MAKE DIR** Calls up a responder allowing you to name a directory to be created in the active directory window.
- COMMENT** Lets you attach a comment to the selected files.
- RUN** Runs the selected files. If the files require an argument, click on the REQ button before selecting the option. **EXECUTE** Uses the AmigaDOS Execute command to execute the selected batch files.
- OTHER** -> Other button for you to program.
- COPY** Copies the selected files in the direction indicated by the flow arrow.
- MOVE** Copies a file from the active directory to the inactive one, then deletes it from the source.
- DUP** Duplicates a file in the active directory letting you specify the name of the duplicate.
- RENAME** Calls up a responder letting you rename the selected files.
- DELETE** Erases the selected files from the active device.
- INFO** Displays information about the device from which the active directory was loaded.
- PROTECT** Calls up a responder letting you change the protection status of the selected files.
- SET** Lets you specify which protection bits will be considered by AmigaDOS.
- INFO** Gives more detailed info about the selected files.
- ALL** Selects all files within the active directory window.
- NONE** Deselects all highlighted entries in the active directory window.
- PATTERN** Lets you enter a pattern to highlight entries in the active directory window. For example, if you enter FF.doc, all entries that end in .doc will be highlighted.
- BYTES** Displays the total size in bytes of all selected files, including directories and their contents.
- MEMORY** Displays information about available memory. **TIME** Displays the time.
- ARC** Archives all selected files using the archive format specified in the Flags menu.
- UNARC** Unarchives all selected files using the archive format specified in the Flags menu.
- LISTARC** Displays all files within the active archive.

SIDDING PRETTY

SID was written by friends-based Jim Martin, who it will work on both these basic occasions. It's undergoing a revision and I've tried to make that of any comment is needed. All in hand, size has part of the work as this, result of a program considered by many to be the best and most reliable directory utility available. Shareware or otherwise. A commercial release (Version 2.0) has just arrived, and will be offered to registered users first. So how do you register? The answer is a simple one: contact the Directory Distribution Co., Shareware is a wonderful idea that has been used by billions of people. If you like the product, send the fee requested by the company, and if you hate it, simply erase it and you've lost nothing.

VIRUS FREE PD Ltd.



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SUPER DUPER V2.1

Super Duper is easily the fastest disk duplicator available, it can copy a disk in as little as 36 seconds.

AMIGA FOX DTP

At last a PD desk top Publisher with all the features of a commercial title, WYSIWYG. It's Amiga Desk Top Publishing at it's best. But best of all, it only cost's £2.00.

DATA EASY V1.3

If you often a powerful, but not so difficult to use Database then you often this. It's extremely easy to use, as the name suggests.

FREE COPY V1.4

If you had up with having to type in gosh words in an old our favourite games, well no there's no need too. With this superb copier it will take out Password protection.

MESSY SID 2

Fed up with all the hassle of transferring PC files to the Amiga, well now you can do it with ease, Messy Sid 2 can upload as well as download Amiga or PC files back and forth from one machine to the other.

AUDIO ANIMATION STUDIO

With Audio Animation Studio you can have animation as well as synchronised sound FX and speech. Definitely a disk for the creative type.

LAND BUILDER V3.2

Land Builder can create amazing looking pictures of islands and sea etc, you just tell it what sort of view you want and hit GO.

NCOMM V1.921

If you've got a modem then you should have this disk, it not only contains the best PD communications package available but a whole host of additional archiving files as well.

D-COPY V2.0

This is the latest version of the excellent D-MOR copier, it's very fast and it couldn't be easier to use. Hundreds of features including Format, Nibble copy, Dos copy's and the option to verify your copy.

UNI COPY V1.0

A great new multi-tasking multiple drive copier, that can backup from 1 drive to upto 3 Destination disks, it features various copy modes including Nibble and Dos copy.

TITANICS CRUNCHER V1.2

Titanics have excelled themselves once more with this latest version of their brilliant and easy to use file cruncher. With most file compactors once you've crunched a piece of software and want to run it, you have to wait for it to decompact, but with this software your programs will decompact as they load.

SPECTRUM EMULATOR V1.2

Ever wanted to run all your old 48K Spectrum software on the Amiga? Well now you can with this superb Emulator disk. Not A500+.

PROFESSIONAL D-COPY V3.0

Fed up with trying to backup software with the Workbench? Well now there's no need to, because with this great utility you can backup software you've never copied before, it's even better than X-copy! Not A500+.

MED V3.2

The latest version of the best PD Music sequencer available. Fully compatible with the A500+, and it supports MIDI as well, easy to use, and instructions are easy to use.

TYPING TUTOR

If you want to improve your typing skills, then look no further than this, TYPING TUTOR will enhance your speed at the keyboard and allow you to greatly improve your knowledge of the keyboard layout.

SUPER LOCK V1.01

Super Lock allows you to lock either your Mouse or Keyboard, thus stopping any-one from using your machine. You can also stop other people from accessing your drive. By simply inputting a predetermined Password your system will be back to normal.

COMPUTING DIAGNOSTICS V9.1

If you're having minor problems with your Amiga then this disk is a god send. It will test your mouse, keyboard, sound chip, graphics chips, and also your disk drive, and give you on screen information on what's fine.

A64 PACKAGE V2.0

This is the latest version of the most powerful Commodore 64 emulator available for the Amiga. You can even load and save C64 games, and programs in base.

BOOTX V4.4

This is the latest and most powerful Virus detector/killer available, it can search out and kill over 220 different Viruses including file viruses and the Sockem Virus which attacks Disk Validators.

VIDEO DAT V1.2

If your Video collection is in a bit of a state and you can never find your favourite files then VIDEO DAT is what you often, it can catalogue hundreds of videos that can be found and sorted in any order.

DIRECTORY WORK V1.91

D's work is a great new CU replacement that allows you to copy/remove/delete etc any file without using CU, simply click on the file you wish to copy select a destination disk, and hit go. Essential for the beginner.

VIRUS CHECKER V6.00

If you want to be sure you don't introduce a virus onto any of your disks then get hold of a copy of this great Virus killer that will run in the back of your workbench, checking any disks there put in the drive as well as the memory. Version 6 can detect over 150 Viruses, inc file viruses.

TEXT ENGINE V3.0

Available now, the latest version of the best WordProcessor around. Features include Spell Check, Cut, Paste, Tabs, etc.....

WINDOWS BENCH V1.0

If your sick of the look of your Workbench 1.3, then get a hold of this super disk, it will transform your old workbench into something a bit more upto something a bit more upto date, not only that but it also contains a load of excellent utilities. Not A500+.

AMIBACK V1.8

AmiBack is a professional looking Hard Disk Backup system, that will transfer all your DATA from your Hard disk to numerous floppy disks.

RSI DEMO MAKER V2.0

A great new version of THE BEST Demo creator available. Features a host of new and enhanced options, including exploding fonts, and full Genlock support for Video Titling. NOT A500+.

FIX DISK V1.2

Disk in drive DFO - corrupt, read/write error on DF etc, etc if you've ever had this sort of message appear when you've inserted one of your disks into your drive, then you'll know how frustrated you can get when you can't get back all your valuable data. Well with Fix Disk your problems are over, it can repair your corrupt disks, and save any saveable information, a must for anyone.

A full catalogue disk is available for £1.00, but is sent FREE with all orders.

BADBOYZ LICENCEWARE

BAD001 X-SYSTEM is a superb platform game that's up your game.
BAD002 NORRIS has been highly praised for it's cute GFX and great play, it's a hard job controlling Normie about but a huge amount of fun.
BAD003 PHASE 2 is a great new horizontal shoot-em up featuring 3 layers of parallel scrolling and 5 in game tones.
BAD004 DARK THINGS, written by the author of Phase 2, and features the same high standard of graphics it scored. Highly recommended as one of the best licence-ware platform games available.
BAD005 TRON 2000. Is highly addictive Light Cycles clone, 2 Players only.

All the above titles are only £3.00 each

PLAY'n'RAVE

Do you wish you could produce bigger Modules in Sound Tracker? Well now you can. With Sound-tracker on a standard Amiga you can only produce Modules of around 350K, but with Play'n' Rave you can produce a TRAK upto 17meg long on a standard 512K Amiga. PLAY'n'RAVE does this by joining Modules together to in effect produce one big Module. Thus allowing long and varied tracks. PLAY'n'RAVE comes with a TRAK player so you can produce brilliant PD music disks that will play continuously for hours without a break.

PLAY'n'RAVE is currently only available from us for only £7.99 inc

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1 Single Disk	£3.00	2 - 5 PD Disks	£2.00
6 - 10 PD Disks	£1.75	11 - 20 PD Disks	£1.50
21 - 99 PD Disks	£1.25	100 + PD Disks	£1.00
Deja Vu Software	£3.50	+ = A500+ Compatible, - = Not A500+ Compatible. A note to all A500+ owners, some disks contain more than one program, and on a large compilation not all programs are guaranteed to be compatible.	
BAD BOYZ Licenceware	£3.00		
FISH Disks	£1.00		
Power Games	£2.99		
JMK Disks	69p each		
Postage In UK	FREE		

ORDERING DETAILS

Orders can be placed either through the post, with payments being made by Cheque, Postal Order, or Credit Card. Payable to VIRUS FREE PD. You can also phone or fax your order to us giving your credit card details etc. Our Phone lines are open 9:30am - 9:30pm Monday to Saturday. No Answer Phone. Most orders are despatched within 24 hours, by first class post. Postage is included on all UK orders. Overseas orders please add 24p per title ordered.

100% Amiga

hard drivin'

If you're one of the growing masses who have got a Hard Drive, you'll be wanting to fill it. CU takes a look at some of the better Hard Drive-installable games currently available.

With the arrival of the Amiga Plus and its 1Mb of memory, many companies are beginning to design their games expressly with expanded machines in mind. Better graphics and more realistic sound are just two of the advantages when taking on the extra 512k, which most companies are starting to regard as standard. You might think that adjusting the size and detail of games can only be a good thing, but with this increase in memory and quality comes a price.

Whilst some floppy users are content to struggle with and lengthy access times, an ever-increasing number are turning to hard drives to speed the gaming process up. However, due to software houses' fears of piracy, many refuse to make their products installable, leaving many angry purchasers with an expensive mistake on their hands. It's with these people in mind that we've put together this guide to just a few newsworthy, and not so newsworthy products, for you to cast your hardened eyes over. There's something here for everyone and, rest assured, all are hard drive compatible.

BIRDS OF PREY

Electronic Arts £34.95 Flight Simulation
One of the finest flight sims ever. Featuring dozens of planes, including the B-2 Stealth Bomber, Boeing 747 and the Hercules transport. Some of the more nippy planes are a little hard to control. However, all's not lost as a useful auto-pilot system can fly you to the game's many missions before you take over.

BLACK CRYPT

Electronic Arts £25.95 RPG
Huge levels, excellent graphics, atmospheric music and sound – at last, there's an adventure that rivals *Eye Of The Beholder* for the RPG crown. The animation leaves a little to be desired and there are only two save game positions, but apart from these bug bears you can't fault this game in any respect. Constant progression is assured due to the ideal level of difficulty that's been set. A great game that'll take up many a hard drive.

CADAVER

Imageworks £24.95 Arcade/Adventure
Pays homage to the outstanding isometric 3D games produced by Ultima in the 'Golden Age' of arcade/adventures. The Bitmap Brothers pack *Cadaver*'s five levels with quality puzzles and graphics. If only they'd added a bit more action, we would have seen a classic.

CRUISE FOR A CORPSE

Delphine/US Gold £25.95 Adventure
Gripping stuff from the Parisian software developer. An Agatha Christie-style murder mystery using the fantastic Cinematique system. Has been criticised for being a bit slow, but a hard drive goes a long way to restoring anyone's faith in this product. The clues that must be gathered by the French detective Raol, are quite difficult to discover at first. Once you get into the swing of things, though, progression is a lot swifter, and you can experience some of that famous French atmosphere with

some brilliantly-executed animation scenes to rival *Another World*. *Cruise* is full of flair, especially the black and white 'flash-back' sequences.

DEATHBRINGER

Empire £25.95 Arcade/Action/Em Up
Truly stunning graphics with over 38 levels of parallax scrolling. The 3D levels that make up *Deathbringer*'s world are superb to look at, with colourful and detailed backdrops and a whole array of monsters, including guardians who occupy up to three quarters of the screen. The game is badly let down by its limited control over the barbarian warrior. This proves to be more frustrating than the game is entertaining.

ELVIRA: MISTRESS OF THE DARK

Accolade £25.95 Graphic Adventure
An excellent adventure which utilises gory full-screen graphics and an original plot. The fabled female puts in a few appearances during the game, so adolescents and true red blooded men won't be disappointed. Much better than the sequel, simply because it's much more fun.

FLAMES OF FREEDOM

Microprose £34.95 Arcade/Strategy
Effectively *Mightwinter 2*. From the original game's author, Mike Singleton, *Flames Of Freedom* is a technically awesome 3D adventure, with 1,000 intelligent characters to meet, dozens of weapons and vehicles to use, and 1,000,000 square miles of terrain to explore. This is the nearest a computer game has come to a James

Bond Movie (depending on your opinion of the spy's adventures!). One of the best sequels ever.

4D BOXING

Mindscape £24.95 Sports Sim
The programmers have thrown everything they've got into *4D Boxing*'s impressive polygon graphics. The boxers look like those square-jawed computer removal men in *Die Straits' Money For Nothing* video. The fourth dimension is supposed to represent the realism obtained when playing the game, by the way. The simulation is very comprehensive and enhanced by the number of stats provided. Instant replays can be obtained from a number of angles, too. There are 40 boxers to fight, but a promising game is let down by the lack of visible damage you can see inflicted on your opponent. However, it's still the best recreation of the sport on the home computer to-date.

4D SPORTS DRIVING

Mindscape £25.95 Sports Sim
Immediately comparable to *Stunt Car Racer*, Mindscape's version is not quite as good. Race against the clock or one of six opponents who range in skills and tactics from Bernie Rubber to Skid Vicious. The racing conditions are just as diverse, as you can go off-road racing or spin the loops and jumps on tarmac. Certain sections will really test your skills as you have to top 100 mph whilst spinning 360 degrees through the air to clear a ramp. The courses have been gauged perfectly and there's a good balance between stunts and racing to make the game both interesting and a challenge. A replay facility lets you see the action again, and can be used to pick up tips. Rather than contesting with the aforementioned *Stunt Car Racer* for top billing, this is a welcome alternative.

GRAND PRIX

Microprose £34.95 Race Driving Sim
Hot racing action from Geoff Crammond, the author of the award-winning *Stunt Car Racer*. Realistic, fast-moving and excellent 3D graphics with up to 18 tracks for you to choose from.

HARE RAISING HAVOC

Infogrames £25.95 Animated Adventure
A hard drive is an absolute necessity to have if you want to play this game – it's probably the first hard drive-only game, and a very brave gamble. Once you've got into the game it's easy to see why. Cartoon graphics and digitised speech has been directly lifted from the film *Who Framed Roger Rabbit* and the back-

grounds look as though they've been crafted in Disney's Hollywood-based Animation Studio. There are hundreds of frames of animation and more objects to be found to interact with than inside an Anne Summers boutique!

LORD OF THE RINGS

Electronic Arts/Interplay £25.00 RPG
 A fabulous interpretation of J.R.R. Tolkien's master-work with point and click icon interface and a series of graphic and text screens to push the fantasy forward. Anyone who's found themselves immersed in the Tolkien fantasy world before, will find this the closest they've come to stepping into the little 'olka' shoes.

MEGATRAVELLER 1

Paragon/Empire £25.00 RPG
 An entertaining and totally absorbing adventure experience, based around the popular RPG book. The game contains a huge amount of puzzles, some of which will take you days to solve. However, be warned, *Megatraveller 1* is not for the foolish and definitely not for the beginner, so only battle-scarred RPG veterans need apply.

MIG 29 SUPER FULCRUM

Comark £29.99 Flight Sim
 Ex-British Airforce Force simulation team. Shows, created something for all you techie desk-top pilots. A first-rate package which comes complete with a 128-page colour booklet full of information and photographs of the respected Soviet fighter. However, *Fulcrum* still needs an injection of energy for its lacking gameplay. A few more missions wouldn't have gone amiss, either.

PIPEMANIA

Empire £24.99 Puzzle
 The crazy puzzle game that's seen dozens of imitations on the Public Domain circuit. The task is as simple as it is addictive. Water pressure is building up in the main pipe and is just about to blow. You have to build a series of tubes for the water to go through when it eventually bursts out of the tap. The different pieces of pipe drop in on you in random shapes so you have to think ahead and reserve sections you may need later. Great fun and leaves you thinking that you can always do better.

POPULOUS 2

Electronic Arts £25.99 God Sim
 Using the same game principle as its popular predecessor, *Populous*, the sequel surpassed everyone's expectations. Try to become more powerful than Zeus by defeating the opposing horde that would invade your continent. The more battles you win, the

more powers are bestowed on you. Choose to be the God of Storms or King of Fire, and invest in mastery of the winds or a combination of all the elements. An added feature is the sudden appearance of different creatures from Greek mythology who stride across the land causing havoc indiscriminately. Two versions are available and 1Mb owners will be treated to even better sound effects and graphics. Fabulous, you'll come back to it again and again, so get it on your hard drive now.

POWERMONGER

Electronic Arts £29.99 Strategy
Powermonger is one of Bullfrog's games that's been totally thrown in the shade by the hugely successful *Populous* series. Although often paired off with the giant *God em*, *Powermonger* is in fact nothing like its prestigious stable mate. You take the role of a ruthless warlord who must bribe the meek, spy on the sinister and destroy the destructible! This is a more realistic simulation than *Populous* and incorporates such effects as rivers, hills and settlements. All the people, battles and action are completely at your finger tips and can be rotated around and zoomed in on at will. Great fun and more demanding than the others.

ULTIMA 6

Empire £25.00 RPG
 Every game in the *Ultima* series is a masterpiece in its own right. The collection has sold over a million units worldwide and won more awards than Walt Disney. The basic core of the games revolves around the battle between good and evil and the latest addition to the family is no exception. By far the best *Ultima* game in existence and almost perfection in an RPG environment. Most other games pale in comparison. You'll need at least 1Mb to run it, and of course the fun is doubled by the use of your hard drive.

RAILROAD TYCOON

Microprose £29.99 Strategy
 Build yourself a railroad empire in North America or Europe during the heyday of locomotion. Each territory has its own economy, products and resources. Players must choose the right train engine and rolling stock for the job and keep the equipment up-to-date. The game has an exhausting amount of detail and depth.

SIM CITY

Infogrames £29.99 Strategy
 The game that started it all. *God Sams*, as games of this type have come to be known despite the fact that they're not all true to the name's description, can be found in most software shops these days in a vari-

ety of forms. However, the classic urban planning simulation, although looking slightly dated against the modern competition, still cuts the mustard and is also available bundled with *Populous* in a classic nostalgia pack. Take the destiny of the world's greatest cities in hand and build factories, airports, fight crime, pollution, collect taxes and balance the budget. Natural disasters also plague your lands so keep building if you want to survive.

THE GODFATHER

US Gold £30.99 Shoot 'Em Up
 A classic example of the misuse of a film license. Probably due to no fault of their own, US Gold's Mafia epic bears little resemblance to the *Brando/Pacino* masterpieces. Dogged by copyright problems, this average platform/*Operation Wolf*-type affair does its best to recreate old New York with some fantastic back-drops and digitised sounds. However, with the absence of any recognisable characters and the tough difficulty level, the game pulls on a pair of concrete moon boots from the beginning.

THE SECRET OF MONKEY ISLAND

US Gold/Lucasfilm Games £29.99 Graphic Adventure
 There's not much you can teach the *Geonix* Lucas team about creating top-quality interactive entertainment. This game is superb in every respect: gorgeous graphics, seductive sounds and heaps of humour. The swash-buckling pirate adventure has absolutely no typing involved and incorporates a terrific use of dialogue that's fun to read and refreshing to find. Once again 1Mb is required, but its memory extremely well spent.

WILLY BEAMISH

DynamiX £34.99 Graphic Adventure
Willy Beamish spains an incredible 12 disks and not being able to store it on a hard drive would make playing the thing nearly impossible. Believe us we tried, forget about mapping the game, we had enough trouble trying to keep track of all the floppies. *Willy* is a child of the Maculon variety - obnoxious and American. Bungling his way through his 'Wonder Years', *Willy's* only ambition is to take part in, and win, the national Nintari video game championships. By going through the game world and collecting objects you'll get the youngster closer to his goal. As you might have guessed, with this amount of disks the game is very graphic intensive and the smallest action takes an amazing amount of disk swapping and accessing. Even when running from the hard drive interruption of the game is as regular as to render it a prime case for suicide. The inner-

game play doesn't allow for any mistakes and often leads to dead-end situations. The animations are impressive, but excruciatingly slow, and only those with the patience of a saint will let this product out of their house without it leaving on the inside of a full up bin liner.

LEISURE SUIT LARRY 5

Sierra £34.99 Graphic Adventure
 The first of the *Larry* games went a modicum of mouse point and click control and tad input. Thankfully the programmers quickly did away with the type and the games have gone from strength to strength. The adventures of the sexual nerd are not to everyone's liking, but you can rest assured that most of the fun is carried out with several tongues thrust firmly into cavernous cheeks. With this, the latest in the series, *Larry* has really fallen on his feet, and whilst working for a mafia boss he is persuaded to host a new soft porn show where the host must locate the sleaziest old bolar in America and lead her into bed. With three possible candidates in mind *Larry* jets off immediately to find his women. Graphically and sonically, this is the best *Larry* adventure yet. There's nothing that any of the games will find new, except that it seems to be slightly easier than the others. The *Leisure Suit* has been remarkably improved upon and the game deserves to be in any adventurer's library.

HARD NEWS

Don't think we've left you floppy users out in the cold. If you haven't got a hard drive and don't have a clue which one to get our resident technical genius, Nick Veitch, has put together his list of the Top five drives that can place your machines. Now there's no excuse for sleeping!

TOP 5 HARD DRIVES

- 1 GVP 2 - Silica (52 Megabytes) £369
- 2 RicHard - Diamond (52 Megabytes) £349
- 3 A590 Plus - Commodore (40 Megabytes) £370
- 4 Data Flyer - Hard Cache (80 Megabytes) £370
- 5 IVS Trumpcard - Diamond (52 Megabytes) £370

Hi Quality Version Available on AMIGALAND.COM



Don't let your Amiga-related questions remain unanswered - especially when Mat Broomfield is here to help...

A PLEA FOR HELP

I'm going to start this month's Q&A by asking for your help. One of our most frequently asked questions is "How

do I set up my printer?" Obviously, we don't have access to diagrams and DIP switch settings for every printer available, but that's where you come in...

If you own a printer, and you've got it working perfectly (ie. printing graphics as well as text), I'd like you to send in the following information: the make and model of your printer; the emulation mode used; the DIP switch positions; the printer driver you use; where you got it from if it didn't come with Workbench; and anything else that other readers might find useful. I'm especially keen to hear from you if you own an unusual or obscure printer. The information will be compiled into a definitive printer database which will then be used to help other readers as the need arises. As if the knowledge that you're helping your fellow readers isn't enough, we'll be giving a free subscription to one of the people who writes in.

MAC EMULATOR

I purchased an Amiga 500 at Christmas with a view to doing some of my office work

at home. I was under the impression that it was easy to transfer files from one machine to

another, but for the life of me, I can't find a way to get files from my A500 to the Macintosh in work. Do you have any suggestions?
P. Greenley - Bradford

There are two solutions that spring to mind. The first one is to buy the *A-Max II* Macintosh emulator for your computer. It consists of a small interface which plugs into the external port, and into which you can plug a Mac drive. You'll need to buy the Mac ROM chips, system disks and drive separately. As the complete set-up comes to over £350, you might prefer to look at buying a Mac classic, which costs roughly £500.

Alternatively, transfer your files via a PC disk. All you need is a blank PC disk and any Amiga to PC copying utility. (*MessySID 2*, for instance). Copy the Amiga files onto the PC disk, and use the Mac's Apple File Exchange utility to transfer them. You can buy *A-Max II* for £169.99 from Entertainment International, Unit 4, Stannards North Trade Centre, Basildon, Essex. Tel: 0268 541128.

DELUXE PAINT TUTOR

I've been trying to learn to use *DPaint*, but I'm not having much luck. I heard that there was a tutorial video available, is this true, and if so, where can I get it from?
Mitch Morgan - Worthing, East Sussex



You're right, there is a video available, and it's called *The Deluxe Paint III Tutor*. It's nearly three hours long, and covers all the basics, from menu selections and brush creation to animation. It costs £29.95 and is available from Audition Computer Services, 35 Broad Street, Stamford, Lincs, PE9 1PJ. Tel: 0780 558338.

PRINTER DEVICES

I find it impossible to print any of my work from *DPaint III*. I have a monochrome Epson printer which works well with everything else, but when I try to output from *DPaint III* I receive the message 'Can't open printer device'. I only have an unexpanded Amiga, does that make any difference?

Secondly, can you tell me which is the best DTP or word processor which will let me print text and graphics on the same page? The results must look professional, but I don't have much money to spend.
Damen Butten - Spalding, Lincs.

To print an image, the disk from which you loaded *DPaint III* must contain three files: a printer driver, a printer device, and a system configuration file. The printer driver tells the computer which printer you own (Epson, Qume, etc.), and can be found in the *DEVSPRINTERS* directory. The printer device is used to ensure that only rele-

vant information is sent to the printer and it lives in the *DEV8* directory. The system configuration file tells the computer which printer driver to use, and is created when you set the preferences, and it also resides in the *DEV8* directory. If any of these files are missing, you won't be able to print.

The easiest way to get them onto your *DPaint III* disk is to copy them from a disk that you can already print from. Alternatively, if you boot from a disk that works (your Workbench disk for example), and load *DPaint III* from there, your art package will automatically use the preferences and printer configurations from the boot disk.

Most DTP or graphic word processor packages cost upwards of fifty pounds, and the best of these for pure DTP is *Professional Page* and *PageIt* or *Wordworth* for graphic word processing. However, *AmigaStar* is a PD offering which is reputed to be OK, and only costs a pound or so. You can get it from NBS (disk #U818) at 1 Chain Lane, Newport, IOW, PO30 5QA.

STOCK CONTROL

I'm using an A3000 in my office primarily for word processing and some limited databasing. As I own a garage, I was hoping that I could also use it to help with our accounts. I was looking for a package which automatically generates invoices for our parts suppliers. Do you know of any suitable packages, and, if so, who can I purchase a copy from?
Richard Venables - Tenterley

Yes, *System 3* will do what you want and more. It handles stock control, sales ledgers, cash flow and, of course, invoicing. It costs £59.99 and you can buy it

from Digital International Ltd, Black Horse House, Exmouth, EX8 1JL. Tel: 0835 270273.

2.0 UPGRADES

I'm a little confused by the differences between the new Amiga Plus and the older 1.3/1.2 machines. I understand that a new Kickstart ROM and Workbench is required, but other than that I'm in the dark. Can my old Amiga be upgraded to a Plus, or do I have to sell it and buy a new one? What's all this talk about internal and external RAM and last RAM? How important is it to own an Amiga Plus in terms of the new software that's coming out?
David Roberts - Treowen, Wales.

The new Amiga Plus features a number of major enhancements, including the ability to use up to 2Mb of chip RAM (for better sound and graphics handling), an improved DOS and Operating System, and scalable font support.

For games players, the 2.0 doesn't really make that much difference as most games are written to the specifications of the older machines. However, 'serious' users are generally very impressed with the new machine, and find it much better to use than the older Amigas.

The 2.0 upgrade kit won't make your A500 fully compatible with the Plus as it only includes the new Kickstart chip and Workbench disks. To take advantage of all the new features (especially the higher amount of Chip RAM), you'll also need to buy new EC8 Denise and Agnus chips, which cost £37.55 and £80.18 respectively.

You can buy the chips from CPC, 180-200 North Road, Preston, Lancashire. PR1 1YP. Tel: 0772 555034. You can buy the 2.0

upgrade kits from Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX. Tel: 081 308 1111.

HARD QUESTIONS

If I were to purchase a GVP hard drive, would it be necessary to upgrade my hard meg A500 first? Also, what upgrade would you recommend for the hard drive?



↓ Meadows - Queensland, Australia

No, you wouldn't have to upgrade your computer first. You can add up to 8Mb of memory on the GVP drive, and I would suggest that either 2-4Mb is a reasonable starting place. If you're only playing games, you're unlikely to need more than two, though. Remember, if you're going to upgrade to the full 8Mb, you must use 4Mb chips as you upgrade.

NOTEPAD VANISHING ACT

I recently bought an A500 Plus and a Commodore 1230 printer. After hours of trying to use the printer, I just can't get it to work. I copied the Epson X printer driver onto the Workbench disk from the Extras disk, but



can't get any further because there is no notepad in the utilities drawer, as there was with older Amigas.

I've been told that I may have to buy a word processing disk, is this true? Is there any way that I can use the printer with *DPaint III*, because it's got to be a lot cheaper than buying one? I've tried printing from it, but when I select 'Print' from the menu, all I get on the screen is 'Cannot open printer driver'. I have a copy of someone else's Workbench 1.3 disk, will that help?

M.Evyn - Goals, North Humberdale

There's no reason why you need Notepad to make your printer work. It's basically just a third-rate word processor and was probably omitted from the Amiga Plus versions because it was so dire.

You can create text files using the MEMace program found on your Workbench Extras disk. Once you've saved a file to disk, you can print it by opening a Shell or CLI window and typing: PRINT (filename) <return>. Substitute the name of your file where I've written (filename). This simply outputs your file to PRT; the printer device, but doesn't support text styling such as bold, underline, etc. For that, you will need a word processor, and whilst there are many good ones available, *Scribble* is my personal favourite, and can be bought for less than £30. Better still, CU gave away a free word processor called *Text Plus* on the December '81 coverdisk. As for printing from *DPaint*, refer to the reply I gave earlier (Printer Devices), to find out what's going wrong.

SPIRBY SHELL

I've recently purchased a 1.5Mb memory upgrade for my Amiga 500, and I was wondering if I can use this extra memory when using Shell. I was hoping to change the Workbench startup sequence so I can load the entire

C directory into RAM, and also tell the computer to look to the RAM disk for the C directory.

This would save time for things such as file transfers, because with only two drives, I'm forced to keep inserting the Workbench disk every time I try to copy from any other disks.

Graham Alltop - Rosscariff, western Ireland

Programmers often copy frequently-used commands to RAM to save time, and the new Amiga Plus even has some on ROM to make things quicker still. All you have to do is open a Shell or CLI window and type: COPY C RAM: <return> ASSIGN C: RAM: <return>

The computer will now automatically look to the RAM disk for all C commands.

ARCHIMEDES EMULATOR

At the moment I'm studying for my GCSEs and next September I hope to go to sixth form college to do an A-level in



Computer Science. Apparently, the college uses the Archimedes, and we'll be programming using C and Basic. At the moment, I own a 160 A500 and a second disk drive. Are there any Archimedes emulators available for the Amiga, preferably PD, or could I simply program on the Amiga and transfer the files straight over to Archimedes disks? Please help or I may have to do A-level Economics instead!

D.Ames - Farnborough - Kent

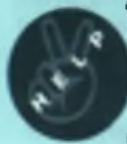
To the best of my knowledge, there are no Archimedes emulators available for the Amiga, nor are there ever likely to be, because the Archimedes works very differently to the Amiga, and features Reduced Instruction Set Chips (RISC) - it would be like trying to get an Amiga emulator for the Commodore 64!

Having said that, both C and Basic are fairly standardised languages, so there's no reason why you couldn't use your Amiga to work out programs for college, print them out, and adapt them to the specific requirements of the Archimedes. C source

code consists of a standard text file, and I'd be very surprised if you can't find a way of converting that directly to your college machines. Can anyone help?

NO SPEAKEE COMPUTERISH

I'm fourteen years-old and have tried programming in Basic, but now I'm thinking of giving up to try machine



code. The biggest problem with mastering a language is reading and understanding the books that are supposed to help you learn. They use a lot of words which they don't explain, making it very hard to understand. Can you recommend a book that would help me to understand machine code, and how to program games? Why do programmers use machine code instead of Basic, what's the difference? Richard (the Burness Given) - London

Many people have trouble understanding 'Teach Yourself' type books, and a number of publishers have produced books which are easier to understand. Machine code (assembler) is the hardest Amiga language to learn, so if you're having trouble with Basic perhaps you're not yet ready to try assembler. C could be a better bet.

Programmers use machine code instead of Basic, as it's more powerful and allows access to many features unavailable in Basic. Whereas Basic uses keywords and expressions which are in English (Let a=13, for example), at best machine code consists of pneumonics which are not very easy to understand (LD A 13).

If you're determined to learn machine code, you may be interested in the 'Abacus title' 'Amiga Machine Language', which

you can order from most high-street bookshop. If you change your mind and go for C, 'Mastering Amiga C' is one of the better titles, and can be ordered from Bruce Smith Books, PO Box 382, St Albans, Herts, AL2 3JD. Tel: 0923 894355.

STAR LC24-200 DRIVER

I'm currently using my A500 with a Star LC24-200 colour printer. I'm using the Epson G printer driver, and, whilst this gives me perfectly acceptable results, I wondered if the output could be improved if I used a LC24-200 driver, instead of an emulator.

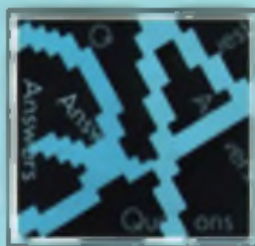
J.M.Jarvis - HMS Rocks, Gibraltar

I'm not sure if there is a specific LC24-200 driver available, I doubt it. However, if the printer can emulate the Epson 3 series, your output is unlikely to be improved anyway. The best way of improving the output of any dot matrix printer, especially a colour model, is by using an invaluable program called *Flexidump*, which is available from Core Electronics, 808 St Albans Road, Garston, Watford, Herts, WD2 8NL. *Flexidump* features optimised colour and monochrome printing, and uses improved drivers for all common dot matrix printers.

CLIPPED ART

I recently purchased a set of clip art disks from 17 Bit software, and although I can load them into *Kind Words* and *DPaint*, I have problems clipping them in order to create a usable single image. Also, when loading them into *DPaint*, the colour palette changes, presumably because the images are supposed to be





black and white, and are not intended for coloured output?
J.M.Jervis - HMS Roofs,
Gibraltar

Most clip art is saved in medium resolution brush format, and includes a single image ready to import directly into your DTP package. The 17 BH stuff includes screens containing lots of images, which need to be cut out as you require them. The easiest way is to simply load them using the PictureLoad option from *DPaint*, and cut out each image as you require it using the Pick-Up Brush icon. The new brush can then be saved via the brush menu, and can then be easily imported into your DTP package.

DPaint's palette automatically changes to that of the screen being loaded, (but not if it is loaded as a brush). As most clip art is black and white, your assumption about the palette colour change is correct. However, you can always increase the number of colours using the Screen Format option. If you want full-colour clip art, just colour in the stuff you've already got!

DARK MONITOR

I'm having a little trouble with a TV monitor I have bought. As my monitor was getting a bit old (and parts of it started falling off), I decided to buy a new one, and opted for a Goldstar model.

Luckily, the one I purchased had a Scan Input so I could connect both computer and aerial into it simultaneously. There's only one problem: the brightness, contrast and colour settings can't be altered when in computer mode. As many of my games are a bit on the dark side, I

often find that I literally can't see a thing. The shop didn't have an answer, nor did my local electronics store. Perhaps you can offer a solution?

Jason Fairley - Bemmel

I can offer two suggestions, although I can't guarantee that either will provide a solution. Most monitors and TVs that accept Scart input, allow the adjustment of the brightness and contrast of the picture, but not its colour. Recently I heard about a range of Mitsubishi TV/monitors which require a special type of Scart lead in order to register the full presence of the computer signal. These leads include a custom chip called a Jungle Chip, which apparently solves the problem. They cost about £18 and can be bought from Meadmore Ltd, 28 Ferriars Way, Netherton, Merseyside, L30 4XL. Tel: 051 521 2202. Alternatively, an American company The Memory Location, manufactures a special lead which increases the voltage (and consequently, the brightness) of the RGB signal. The lead is called The Video Creeper and costs £28.00 plus import tax and VAT, and can be ordered from 206 Washington Street, Wellesley, MA 02181, USA. Tel: 0101 617 237 8648.

WHAT CD ROM?

I was reading the January issue and I noticed a letter from Steve Franklin in which he said something about the A880 CD ROM. What is it, and what does it do?

Nick Marignani - Truro, Cornwall



The A880 CD ROM is the soon-to-be-released ROM drive for the

Amiga. It plays read-only CD ROM disks which can contain over 600Mb worth of data, and is essentially designed to turn an Amiga into a CDTV.

Incidentally, it's now been renamed the A570 so that people won't confuse it with Commodore's new out-of-date Amiga, the A600

(due to be released in May).

C WHAT!

While reading the January issue of CU, I came across a review of a PD utility called Sozabon C, a program for writing C programs as far as I can make out. In the review it says C is one of the most popular languages on the Amiga. Offering the power of



machine code, but only slightly harder to learn than Basic... I immediately assumed that C programs were those things that you find in the C directory on most DOS disks, so I decided to load one into a text editor, I loaded *MedPlayer*, a C program for loading and playing MED tunes. Expecting to see no more than a page of writing containing some variation on Basic, you can imagine my surprise to find three pages of ASCII gobbledegook! Now if that's what you call slightly harder to learn than Basic, then I must have learned a different version of Basic to everyone else! Is this what you have to write in order to create a C program, or is that just the compiled version that the Amiga reads, or have I just been completely misled? Kevin Whitaker - Crook, Cumbria

Yup, you've been completely misled! C programs have nothing to do with the stuff in the C directory. The programs are written using an ordinary text editor, and they use 'proper' words such as 'define', 'case', etc. This text file is then eventually compiled into pure machine code which runs at optimum speed. The Amiga's Operating System was written in C, but if you looked at it, it would appear much the same as the *MedPlayer* file you looked at - a meaningless jumble of numbers.

AMIGA PLUS COMPLAINTS

I'd just like to say I'm truly appalled by the fact that Commodore should bring out a new Amiga which isn't fully compatible with ALL soft-

ware. I am, of course, referring to the Amiga 500 Plus, and I begrudge paying £400 for a brand new machine, only to discover that I'm forced to spend another £80 on 1.3 ROMs and a ROM share.

To be fair, the problems are not entirely due to Commodore. Any companies who are interested in developing Amiga software can purchase a developer's pack which carefully outlines how they should and shouldn't program the computer. Provided developers work within these guide-lines, software will (theoretically) remain compatible with all future versions of the Amiga. Unfortunately, to squeeze the very best out of the machine, programmers often ignore this manual and do their own thing, to their ultimate detriment.

AMIGA PLUS MUSIC

Do you know of any version of *Soundtracker* or *MED* which works on the A500 Plus? I have two, *Noisetracker* and *Protracker*, but neither works. Is *MED* 3.0 better than the *Noisetracker* variants, and if



so, in what way? Is *MED* compatible with most samples like *Protracker*? Kevin Whitaker - Crook, Cumbria

Protracker 1.1 and 2.0, and *OctaMED* 2.0 and higher certainly work on the Amiga Plus. *MED* is much better than the other *Soundtracker* clones in every way. It provides more powerful editing facilities, accepts a wider

range of samples (synth-sounds, raw, IFF, Hybrid, 8 octave), and gives you a wider selection of special effects. It's also capable of loading *Soundtracker*-compatible modules. The latest version, *OctaMED Pro*, is due to be released shortly, and can be purchased exclusively from Amiganuts United, 165 Dale Valley Road, Hollybrook, Southampton, SO1 6QX.

SID HELPI

I've recently started messing around with my Amiga with an eye to producing graphics and perhaps even moving on to coding. However, all my pictures and pathetic code attempts are scattered on millions of disks, and I've started to lose track of what goes where. If I had the time (or the inclination), I would sit down and plough through them all, but it seems such a thankless task I honestly can't be bothered. So is there a utility which will enable us to select key data or pics and dump them individually from one disk to another? Actually, if it was fairly cheap, that would be a major bonus. Ian Dulnes - Portsmouth

The perfect answer to your problems is called *SID*. This useful little utility will enable you to load up two disks, scour their contents for what you want to take off and then dump them on to a fresh floppy for later use. It can handle virtually any files, and is extremely quick. Make sure that you've got two floppy drives, though, or you'll run into disk-swapping hassles.

That's it for another month. Don't forget, we're not just here to help, if you've solved a problem, that may help someone else, drop me a line, and I'll be happy to share your advice.

ANY PROBLEMS?

If you have any questions of a remotely technical nature, we'll do our best to answer them. Send your letters to: Q&A, CU Amiga, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

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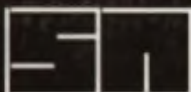
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Doctorin' the disks

PART 3

You've seen how a disk works, you've seen why it works. Now, in the final part of this monumental series, Nick Veitch takes a look at what happens when they don't work.

LATE NIGHT CRISIS

It'll be late. It's always better when it's late. And you'll be tired, that's just the way it goes. It may even be your fault: a little too quick at the eject button, or accidentally dropped from an upstairs window. Anyway, however it happens, whenever it happens, sooner or later you're going to get a disk error.

When this occurs you'll find the human race divided into two distinct categories. Firstly, there are the aggressive types who may say a few rude words before grinding the offending floppy into the carpet or (my favourite) carefully cupping the disk in the left hand before giving it a swift right to the soft sectors. Remember to get a grown up to help you pick out the plastic splinters afterwards. The other sort is the one who raises one eyebrow slightly, brings a pensive finger to their lips and tries to work out which of the many disk tools will be the best for retrieving all that lost data. The whole object of this series is to turn you from the former into the latter.

DIAGNOSIS

The first thing to do is to discover whether there is in fact any hope of retrieving any of the data. Recoverable damage is the sort of damage caused by the disk being near a weak magnetic field; a minor virus attack; the Amiga being turned off whilst the disk was writing; ejecting the disk before AmigaDOS was finished with it; or accidentally asking AmigaDOS to do something you didn't really want it to do. Non-recoverable errors are caused by: putting the floppy in your motorcycle bag; pouring coffee, tea or diet Ribena through the little slot at the front; and cupping the disk in your left hand and giving it a swift right.

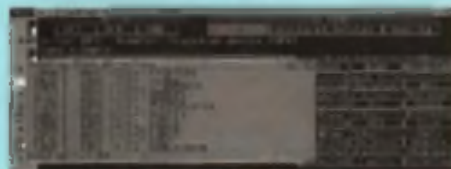
If you have a vague idea of what is wrong with the disk it will help you in trying to get the poor little thing spinning with the best of them again. The next stage is to run a copy of *Fixdisk*. What do you mean you don't have a copy? Oh well, you're stuffed then. I mean, you could still all the hash table entries (see part 2) using *DiskX* or another hex editor, but it would take a very long time. Get *Fixdisk*, it's available from any good PD library. Whatever you do, don't use *Disksdoctor*, the 'ull-

ly' provided with *Workbench*. It's a quick, a saw-bone, a back-street abortionist. If you were on a desert island and all you had was a floppy of *Disksdoctor* and a damaged disk the same thing to do would be to write 'send me *Fixdisk*' on *Disksdoctor*'s label and stuff it in a bottle.

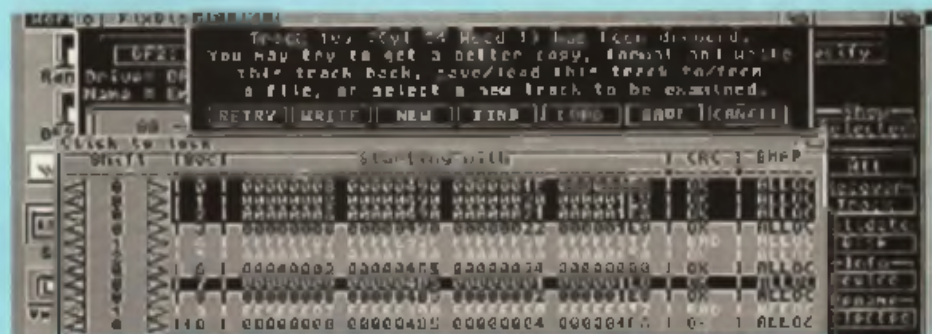
THE OP

If your error is simply a validation error (the sort of error caused by accidentally turning off the machine whilst the disk is in motion) then you have no real worries. *Fixdisk* will validate the disk by going through the blocks and resetting the checksum for each. In fact, if you are operating under Kickstart 2.0, the system will attempt to validate the disk for you, since this routine is in the 2.0 ROM.

A more disturbing occurrence is a read/write error. There are two types of these. The first is when AmigaDOS comes across a track that has some physical damage so that the data is impossible to read - and there's very little which can be done about these. The second type of read/write error is when AmigaDOS can't physically read the



Fixdisk reads every block on the disk to get an overall map of all the files - corrupt or deleted - present on the disk.



Sometimes there is nothing wrong with your disk, apart from a bit of damage. *Fixdisk* will try and read the track so many times so you can before writing a corrected version back to the disk.

disk but it can't make sense of it.

As we have seen, the actual data stored isn't simply a stream of numerical data, a lot of the information stored on the disk is organisational in nature; the stuff which tells AmigaDOS where it's going and what to expect when it gets there.

If you have a read/write error, *Fixdisk* will attempt to find a copy of the data. You may be lucky and find that only the CRC (Cyclic Redundancy Check or checksum) is causing bother, in which case you will not have lost any data. It may be a good idea to duplicate your disk using *Xcopy first*. It is possible for *Fixdisk* to take a guess and rewrite the data back to the damaged track. This way you may lose some of the data but at least AmigaDOS will be able to read your disk without blowing you a raspberry.

Files with blocks in the danger zone may be a bit wrecked - remember each block points to the next in the chain. If one block is damaged, AmigaDOS may not know where to find the next in the chain. But, as I'm sure you remember from last month, the file header also contains this information, so in effect you have two ways of finding out which blocks go where. *Fixdisk* will give you the option to reconstruct a file from the header or from block links.

If you have simply deleted a file you wish you hadn't, then you may be in luck. When a file is deleted, the blocks themselves don't disappear, AmigaDOS simply removes that file's entry in the directory. All *Fixdisk* or any other 'undelete' routine has to do is search the disk for the file header. As long as you haven't saved any other files to disk with the same name and as long as none of the deleted file blocks have been located elsewhere, it's a fairly simple matter for *Fixdisk* to reinsert the entry into the directory table.

THE RECOVERY ROOM

You can never really trust a once-knackered disk again. If you have a hard error (physical damage) the best thing to do is chuck it immediately. Don't leave it lying around where you may be tempted to use it again. If you do have some damage on your disk that you can't rationally explain, always check for virus activity. If you have a branded disk you should send it back for a replacement. A lot of people forget that their disks have a warranty. The disk is no good to you anymore and you may even get a letter of apology as well as a replacement.

So, there you go. You now know what to do with your damaged disks - get *Fixdisk*. Ok, so we could have told you that in the beginning but that wouldn't have been much fun. At least now you know what *Fixdisk* is doing while the drive light is flashing. You never know, someday it may save your data.

mind your



To start off our regular series on how to communicate with your Amiga, we take an in-depth look at ARexx, the powerful scripting language which can cure terminal Schizophrenia in your work and applications.

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'BYE, 'BYE BASIC

It can't have escaped your notice that a lot of applications are proudly proclaiming ARexx compatibility. So what is ARexx and what's the fuss? How is it possible that a mere scripting language can mean so much to so many? And why is Commodore releasing all Workbench 2.0 machines with ARexx instead of Basic?

ARexx (which is pronounced 'A <pause> Rexx') is nothing more than an interpreted language. It's a variant on Rexx, which was used on some IBM mainframes to write utility macros which would automate a repetitive or complicated sequence of tasks. ARexx keeps the keywords and syntax of Rexx but adds lots of Amiga-specific code and library calls which allows the user to call up proper Amiga menus and alert boxes.

Perhaps most interesting of all, ARexx is a typeless language. Unfortunately, this doesn't mean that you don't have to type it in, it means that there is only one kind of variable. In this case a string.

CONSIDER THE FOLLOWING:

```
/* Concat example */
Text="Hours from Tulsa"
Time=12
string = 2*Time Text
SAY "My favourite song is" string
```

THIS WOULD PRODUCE:

"My favourite song is 24 hours from Tulsa."

This example shows off many of the language's little foibles. First off, every ARexx program or macro must begin with a comment. This is an attempt to force the programmer into writing at least the minimum amount of documentation. ARexx is fairly easy to understand, but there are few things more



annoying than having to run a program before you can tell what it does. OK, so the filename may give it away, but if you're like most mad programmers you probably have drawers full of experiments tentatively named 'plop', 'ploppy' or, in rare cases, 'ploppiest'.

The second interesting thing is the variable declaration. Notice that we haven't put in any funny dollar signs or otherwise declare the string specifically as a string or the number specifically as an integer, floating point or whatever.

The next line does the tricky bit - multiplying the number by two, adding a space and the string to the end. Note that there are no data type transfers required, as all variables are created equal. In fact, much to the disgust of other language programmers, ARexx is case insensitive.

MULTIPLE PROCESSES

ARexx was designed to enable and control the flow of information between different tasks on a multi-tasking computer. This means it has a wealth of complex and powerful string operators which can be built up very easily. It also makes it particularly suited to the Amiga.

As everyone should know by now, the Amiga is a true multi-tasking machine - i.e. more than one task can execute instructions simultaneously. What most people don't realize is that this multi-tasking is going on most of the time, even if you are just running an application from Workbench.

In order to keep track of what's happening all the time, AmigaDOS has a system of ports and

addresses. This means that all tasks can have a 'pigeonhole' where messages can be sent from Workbench. It is extremely easy for ARexx to set up a port to handle the flow of information from any other application which has also opened a port. This means that ARexx takes a role rather like that of a General on the battlefield - it accumulates information from other tasks and acts on it - sending out instructions to specific tasks or sometimes just to any task that is listening.

ARexx may be very small in itself, but the overheads in memory terms of setting up a large message and port structure means that, unless you have 1Mb or more, you'll find it difficult to interact with professional application software.

SADNESS: PART 1

The good thing is that ARexx was included with Workbench 2.0, so everyone who bought an A500 plus has got a copy. The sad thing is that many of them are not aware of it lurking on the Extras disk. Commodore have made no real attempt to provide a manual or guide which would actually teach people how to use the thing. Most people don't even know how to launch an ARexx script from the CLI (type 'tr <space> filename').

There are several books available to guide both the novice and the veteran through the complexities of ARexx - and, although it's very flexible, intuitive, and logical, it can be quite intricate when it comes to balancing tasks. The best for new users is probably the Abacus title 'Using ARexx' which comes with a disk and is moderately priced (for a computer book, anyway) at £27.99.

If, however, you are financially challenged then we strongly urge you to stay tuned to this space where over the coming months an amazingly intuitive and easy to understand guide to the Amiga's script language will be appearing. As well as explaining the workings and structure of the language we will be demonstrating programming techniques (useful in any language) and providing examples on the coverdisk for you to try in the privacy of your own disk drive. If you want to improve your understanding of the Amiga and how it works, we'll see you here next month.

language...

RECUR(RECUR(RECUR(SION)))

Each month, we'll be trying to give you a hint about a programming technique. These tips may not be specific to any particular language but since this is the first in an occasional ARexx series, it seems fair that the first example should be in Commodore's wonderful scripting language.

A recursive algorithm is one which is called again and again as part of an iterative process. Why bother. Well, iteration is a technique used by mathematicians when they are in a hurry. Instead of solving a problem by pure algebra or calculus (which can get a bit tricky), they prefer sneaking up on it - taking a guess and seeing how close it was to the actual answer, before modifying this guess and trying again until they get it right.

The algorithm here is not an iterative process, because they tend to be so complex that the actual programming technique would be lost. In this routine we are simply calculating the factorial of a number. This is defined as:

$$N! = N * (N-1) * (N-2) * ... * 1$$

OK, so we could construct a FOR loop and multiply successive values of 'n' until we got the answer, but that isn't as elegant and is a dangerous habit to get into - for some programs you may not be able to tell where the loop should end.

HERE IS THE LISTING:

```
/* factorial procedure showing the use of */
/* a self calling recursive routine */
/*
say "Okay, what's the number"
PULL x /* get number */
answer=fact(x) /* call fac routine */
say answer /* output answer */
Exit 0 /* end program */
/*
/* factorial procedure*/
fact: PROCEDURE
ARG z /* pass arguments */
IF z=1 then Return z /* don't call fact if number is 1 */
/* (factorial of 1 is 1) */
/* This breaks the recursive cycle */
ELSE
z = z*( fact(z-1)) /* the factorial of n is n*fact(n-1) */
```

RETURN Z END

The first part of the program is fairly irrelevant. It's basically a front end to accept an input and call the 'fact' procedure. The first line of the function 'Arg z' is simply the way that values are passed between the main program and the procedure. The variable 'z' in the procedure is a local variable which accepts the initial value of 'z'.

After checking to see if 'z' is one (in which case the value of 'z' factorial is 1 and this answer is returned), we then proceed to the main engine of the routine.

We know that the factorial of n is equal to n times the factorial of n-1 (e.g. 3! = 6, 4! = 4 * 3 * 2 * 1 = 4 * 3! = 24), so we just use this to calculate the answer. What will happen is that the factorial function will be called again, this time for a value one less than before. This procedure is repeated until we ask for 1! (which, of course, is 1). Returning that value means that the previous function call can also return a value and so on, until the final answer is obtained.

NO COMPLICATIONS

Obviously, this is going to take just as long as performing the operation in a loop and can run up huge memory overheads (if your number is really big) but, as stated before, this is merely to show how recursion operates. There is a certain satisfaction to be derived from letting the problem solve itself. In complex iterative processes the recursion technique is essential and easier to understand, not to mention less complicated to write in the first place.

This listing does not provide for error checking, so if the number entered is not a positive integer you may run into some difficulties. Recursion is not only useful if you are having difficulty with your fluid mechanics. Fractal programs make great use of recursion - especially things like fern or tree simulations. Some may have a random element thrown in, making all the much more difficult to use conventional linear programming techniques. Besides, recursion is good and makes for a wacky flowchart.

NEXT MONTH
We'll be examining ARexx in more detail and discovering how to deal with multi-process communications.

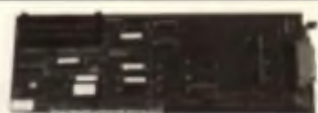
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picture power

Quality artwork is one thing but how do you transfer that quality to your DTP document? Nick Veitch investigates how to put pixels onto paper.

PICTURE BOOK

It would be a pretty boring publication that had nothing but words in it – I know I've read some of them. A little bit of artwork here and there can make all the difference to the reader. Even if you don't use photographs, there are many ways you can liven up your document with just computer drawn illustrations.

Artwork is also very useful for filling space. There is an ancient Greek myth about a chap called Procrustes. Now, this guy was a bit mad, so the only things he lived for in life were his iron bed and his large axe. On weekends and bank holidays, Procrustes used to hang out on mountainous paths and kidnap people. When he got them home, he would put them on his bed and do a bit of measuring. If they were too small for the bed he would stretch them a bit, and if they were too long it was party time for mister axe, but if they fitted just right... well, of course, no-one fitted just right. It's the same with the copy in any document you care to write.

Artwork is very useful because you can always make it bigger or smaller or chop bits off, or even stretch it in certain circumstances.

BIT WHERE DOES IT ALL COME FROM?

The trouble most people seem to have with artwork is where to get it from. Well, the simplest place is obviously to use *DPaint*. Although version IV doesn't handle 24-bit images, it can use HAM (which is roughly equivalent to 12-bit) and should be more than adequate if you are only outputting mono or using a dot matrix colour printer. The only trouble with this is that you must be able to draw after some fashion – besides, you might want just a picture of a person or a particular object.

Here we come across a common problem – how to get something from the real world into the domain of the computer. When it comes to artwork you have two choices. The one you are probably most familiar with is a video digitiser.

A digitiser looks at a video image, samples it (in much the same way as a sound sampler works), and then reconstructs the image into an Amiga display mode. This means that a lot of the colour data

from the original is lost, but once again, it isn't really going to matter if you only want to print it out in black and white.

To confuse things further there are two types of digitisers. There is a plain digitiser, like the well known *Digiview*, and then there are grabbers. A grabber is a special type of digitiser, like Rombo's *Vid* system, which grabs all the information in one go. The internal electronics are slightly more complicated, but essentially a grabber is just a very fast digitiser.

Which is better? Well, plain digitisers usually give better results because they can more accurately analyse the data over a period of time. Unfortunately, this means you need a very still video image to begin with – so you're going to have to buy a camera. With a grabber, you could just as easily grab images of the video or the TV (but remember you could be infringing someone's copyright if you use it in your publication) although,

presuming you want a picture of your pet cat, it will be a bit easier buying a camera anyway rather than waiting for Tiddles to appear on Jonathan Ross. Aside from allowing you to grab from video recorders, a digitiser will also mean that you don't have to nail your pet cat to the floor while the image is grabbed (a normal digitiser can take around 10-15 seconds to digitise one full frame).

A camera needn't be expensive either. For a start you don't need a Camcorder, just a camera. In the old days when video recorders were still new and very few people had one, you could buy video cameras to go with them. These were just camera units and had to be attached to the VCR if you wanted to record what was going on. They didn't catch on too well because early VCR decks weren't exactly portable and not many people could think of potentially interesting films they could make in a five-yard radius from the corner of their living room. Some of these early cameras have survived, though, and can be found in those funny backstreet electronic shops that you can only ever find your way to once.

A better bet is the growing market in security equipment. There are lots of Closed Circuit TV systems around that rely on a cheap black and white camera. Okay, so it's cheap, but it's quality is probably still good enough for your newspaper or whatever. Mapline (0702 558001), purveyors of quality electronics to the cognoscenti, are offering a high quality mono camera (which even supports infrared) for only £129.95 – a lot cheaper than any Camcorder. You can get colour cameras as well.

SCANNERS

The other method of real world data capture is via a scanner. A scanner is a bit like a short-sighted digitiser and camera built into one. The optical scanning device actually comes in contact with the object to be scanned (usually separated by a piece of glass or plastic). The first obvious advantage of this is that you get a much clearer image. The major disadvantage is that you can only scan flat images (NB it is much safer and less messy to take a photograph of Tiddles and scan that rather than try to flatten the poor beast). Scanners are also capable of a greater range of resolution and



This picture was produced via a hard scanner. You can see how it helps to even up a page, and can provide a more balanced and interesting page. Presentation is essential if you are to capture the reader's imagination, and illustration is as good a route as any. In addition, it can also explain the points you are trying to get across more easily – after all, a picture is worth a thousand words.

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picture power

are less susceptible to outside influences.

There are a wide range of scanners available. At the cheaper end of things are hand scanners. These are cheaper because the manufacturers haven't included a big case or a motor to drive the scanning head along — you have to push it by hand. A small wheel monitors the speed the head is travelling and scales the incoming data appropriately. This is more effective than it sounds, so as long as you go at a reasonably steady speed you'll be fine. The only major difficulty is going in a straight line, but you can usually construct some sort of scanning box or use a ruler to help you.

The other sort of scanner is a flatbed. This is much more impressive-looking and produces a more reliable result. The Sharp JX series are generally regarded as the best but for their high price they would need to be.

PICTUREWARE

Instead of buying all this equipment and struggling with it yourself you could always get someone else to do it for you. One such person is Nik Williams. Using broadcast-quality video equipment, he has digitised loads of images and grouped them together in sets. His motorcycle stuff is excellent, but he does have lots of shots of all sorts of things. The best thing of all is that he's a great guy and can usually help you find a particular image. The disks are very cheap considering the amount of time and effort that have gone into them. In fact, even if you do have a digitiser or a scanner, you may still want to get some pictureware images because they are such high quality. Give Nik Williams a call on 0782 470503 or write to Aspect House, 21 Brynmill Crescent, Swansea SA2 0AL.



The target is provided courtesy of the Power Scanner — probably the best quality hand scanner you can find at any price. However, simply buying such a high-quality device, it adds for the absurdly low priced £95. It really is an incredible package, and if you require more information, give Power a call on 0224 843388.



This scene shows some of the difficulties you may come across when scanning artwork. The scene is a little dark and could pose problems when printing. Also, the odd fringe is caused by scanning a picture in a screened procedure — a negative, for instance.

FROM SCREEN TO PAGE

A funny thing happened on the way to the printer. It's a rare image you grab yourself that comes out perfect. There will always be some sort of mess, a nasty colour bias or perhaps some smeggy noise bits that need buying up.

The basic stuff you can do in DPaint — changing resolutions, cropping images, altering colour values — but for really pro work you need a specialised art preprocessor. Currently, these come in two flavours: *Paints* and *Art Department Professionals*. *Paints* is excellent for creating weird effects but sadly lacks a 24-bit option. *ADPro* has 24-bit capability but is a bit useless at weird processing effects. It is also a lot more expensive.

Some of the effects you can achieve are shown in the box-out on this page, but even if you are not after any particular effect it is useful to load your image into an art package before you incorporate it into your DTP package — if only to check it is in the right format. Hi-res or interlaced won't mean much to your DTP package because it's dealing with pages and not screens but the aspect ratio may get screwed up if you are using a funny format. Usually it is a good idea to translate everything into hi-res on DPaint. It doesn't matter if the image will no longer fit on the screen, the other bits will be saved and you can be sure that the aspect will be preserved.

This is by no means an exhaustive treatise on how you should go about adding art to DTP but we hope it has given you a few more ideas about how to improve your efforts. Happy processing.

Popular Effects And How To Do Them

Dualtones are images which contain two inks (and therefore three colours). The image is usually processed exactly the same, but with a different screen angle for each colour, giving a deeper tone range between the background and the primary ink. This effect can be fudged in DPaint using the palette requester.

In 16 colour mode with a greyscale image select the third darkest colour. Addle bit more blue (for example) and then spread this colour to the third lightest. This will give a fairly good simulation for your colour dot matrix or laser.

A greyscale vignette is simply a greyscale which has been masked so that the background disappears. You can easily do this in DPaint by using the irregular brush tool to cut around the edges of the image or you could white (or black) it out with a brush. *Art Department* has a *Remove Isolated Pixel* function which is very handy for removing scanner noise. These are useful for *riverounds*. To alter the tone of the image you could over exaggerate the highlights on the image. If you have a similar palette setup as in the previous example, simply change the three lightest values to pure white and then spread from about third lightest to third darkest. This sort of effect is particularly effective on pencil or line and wash illustrations.

Line art is good. For a start it doesn't take up half as much room as a 16 colour image because it is only one bitplane. Thus a hi-res interlaced screen takes up $(1640 \times 512 / 8) / 1024 = 40k$ uncompressed! With standard IFF compressor (as used by nearly every art package on the Amiga), this could come down to about 9k (because the compressor routine is more effective on a single bitplane). If you simply change displays in DPaint to 2 colour mode you will get a line art image. However, you may lose some detail doing this. A more effective way is to use the stencil option to mask the background and colour in all the areas of detail you are sure you want to keep.

Always remember when preparing images to leave enough of a margin around the edges. This makes for easier placement and avoids nasty bits of white or dark space creeping into the edges of your picture boxes.

under the baud

Linking your Amiga to a Modem can help you communicate with the rest of the world. Dave Burns takes a look at Comms for beginners...

ALL MOD COMMS

Comms, like many other computer terms, is an abbreviation. In this case, it stands for Communications, and involves two or more computers communicating via a telephone line. It may be hard to believe, but with the addition of another piece of hardware to your set up, every character you type can appear almost simultaneously on a computer screen anywhere in the world!

So what is this marvelous piece of hardware which turns your computer into a communications device? The answer is a Modem, which is yet another abbreviation, this time standing for MODulator-DEModulator. These small devices connect your machine's RS232 port to a telephone line and send a coded (Modulated) signal down the line to the receiving Modem, which turns the signal back into something the computer understands (Demodulated). In this way, your Amiga can 'Talk' to a PC, or a BBC can 'Talk' to a Spectrum.

There are many types of Modem available, from a V21 to a 9600HST at prices ranging from a tenner second hand to £1,000. Modems, like computers, are many and varied - the speed of operation (Baud rate), the standard (the comms method and style of operation) and the different lights, sounds, etc, all help to make choosing a Modem as difficult as choosing a computer - with one major difference. When you buy a Modem as a separate item, it will work on most machines. Let's have a look at some of the varieties available.

SETTING THE STANDARD

The most widely used type of Modem is a Hayes Standard or Hayes-compatible Modem. Just as most printers are Epson compatible, most modems

are Hayes-compatible. Suffice to say that the first question to ask yourself when buying a Modem is 'Is it Hayes-compatible?'. If it isn't, then put it down and find one that is. Now that we have found our standard, what speed do we want? Speeds start at 300 and go up to 9600 and beyond! The quicker the speed, the less time it takes to send or receive information. Just to confuse matters, these are often referred to in the form of V numbers, and refer to how many bits per second are transmitted and received. The Modem in the shop may be referred to as Hayes-compatible V22bis which means very little unless you know the V numbers

1. V21 = 300tx/300rx
2. V23 = 751tx/1200rx
3. V22 = 1200tx/1200rx
4. V22bis = 2400tx/2400rx
5. V32 = 9600tx/9600rx
6. HST = 480 tx/14400rx
7. V32bis = 14400tx/14400rx

Most modems offer not only the V number stated, but all the lower speeds as well. You may be offered a V21 at a good price, but it would be a false economy as the time spent transmitting and receiving will cost a fortune. The minimum you would want is a V22. The ideal Modem will be a V22bis giving you a speed of 2400 out and 2400 in. 5, 6, and 7 in the chart above are not really needed unless you plan to spend a long time on the telephone. So we have established that we ideally need a Hayes-compatible V22bis Modem.

SMOOTH OPERATOR

To operate the Modem, after connecting it to your computer and telephone line as per the instruction manual, you need to convert your keypresses into something the Modem will understand. Just like a printer, you need a 'driver', in this

case, terminal software. The most basic will be just a blank screen with a flashing cursor, while complex software will enable you to dial, connect, and complete the log on sequence with one simple keypress or mouseclick.

Before we even try to use a Modem, it might be worthwhile having a quick look at what it is going to cost to run. Remember, you are using the telephone line, and BT do like to grab their pound of flesh. You don't need a special telephone line to use a Modem, and the charges for a Modem call are the same as a local call using voice. So, if you phone a local number the cost per minute is the same as for a spoken call.

Now we're set up, let's look at what we can do with a Modem. Well, one thing is to pass messages and files to another Modem-owning friend.

But why stick to one on one? The whole idea of a Modem is to enable you to expand your horizons. This is what a Bulletin Board is all about. A Bulletin Board System (BBS) is generally set up and run by a fan of computer comms and run from his or her home. This person, known to users as a Sysop, runs the board for no profit, which very often runs at a loss, but benefits by making many friends in the computer world. Having said that the board is run from home though, this does not mean that it is a sub-standard service. Most Sysops, quite rightly, are very proud of the service they provide.

BITING THE BULLET

What you will find on a bulletin board is a set of areas or conferences that deal with a certain topic - general chat, sales and wants, adventure

RECOMMENDED BOARDS

All the following boards have networking facilities, so everything you leave on them will also appear on the other boards in this list. Have fun, and should you wish to contact CU Amiga via your Modem, leave a message on any of these boards and we'll pick it up at the Hotel.

The following UK boards are part of the Worldwide FNET Network:

Lightlanders Place	020-248-5723
Micro-Mole	081-316-7402
The Penthouse	071-930-3903
Sheffield Alt. Solution	074-232-5232
Track 83	095-385-1351
Stealth BBS	053-255-7739
System X BBS	090-461-2834
The Lunar Dome BBS	027-258-4352
InterNet	029-839-5935
The Hotel BBS	063-483-1389
The Tavern	081-445-6514
Maverick Deviation	087-081-3803
The Games Machine	027-460-6870
Fortress BBS	081-317-3158
Ranchout CBBS	027-058-3278
Sanitarium BBS	048-040-3375
Quantum BBS	021-707-0881

walk



games, etc. This is where you can leave messages to other users, either by name, or open to all. You will also find areas where you can download and upload software, and even where you can send E-Mail to another user. Unlike general messages, E-Mail is totally private and can only be read by the person you have sent it to. You will also find on all boards the option to 'Page the Sysop'. If ever you have a problem, or don't understand something, then use this option and the Sysop, if he's around, will come on line and speak to you directly via the Modem.

Now you have a Modem, know what a bulletin board is, and are ready, let's go call a board. If you have the option somewhere on your software, set the Baud rate to the highest your Modem has (1200 or 2400, for example), set the configuration to word length 8 bits, no parity, and 1 stop bit (8N1), and go into terminal mode. Now tell the Modem to

ready by typing AT <Return>. AT is the Hayes command for ATTENTION, a command is about to follow. You should have an OK report, which means everything is fine. Now we will go onto a board. The example that follows is for the HOTEL BBe in Rochester, Kent, but if you know the number of a board in your area, then use that number. A short list of recommended boards can be found on the left of this article.

Type in
ATD 0634831389 <Return>
All being well, the Modem will now be clicking and purring. By typing the above instruction, you have alerted the Modem to a command coming (AT) and told it to dial (D) and given the number you want it to dial. Providing the number is not engaged, the phone at the other end will ring,

and, on being answered, you'll hear (if your Modem has a speaker) a short high-pitched whistle. This is a sound sent out by your Modem to the Modem at the bulletin board. What it's saying is 'Hi, I wish to communicate with you. I'm running at a speed of (whatever you set) and set to 8N1'. This will be followed by a very short squeal from the other end which is 'Hi, I have matched speeds with you and am now alerting the software so that your user can see what is happening'. The next thing you'll see is a welcome screen, followed by some prompts for your input. In the case of the Hotel it will ask you to enter your name, or 0 if you are a new user. This is known as the 'Log On Sequence' and, as a new user, you will be asked a brief series of questions, such as name, phone number, etc. You will also at some stage be asked for a password. This is MOST important. The password is to make sure that nobody else can log on in your name, so don't forget it,

or pass it around. The only people ever to see your password are you and the Sysop. Now that you are ON LINE follow prompts and menus to discover the wonderful world that has just opened up to you. If you get stuck, remember that on each menu there is a help command, and most Sysops will be only too happy to offer much-needed assistance.

In next month's Comms feature, we'll be taking a look at a few of the bulletin boards in greater detail and we'll also be giving you the low-down on the best Modems to purchase.

BULLETIN BOARDS' CODE OF CONDUCT

There are a number of important rules and conventions to follow when using a bulletin board.

- Always fill in the registration pages correctly and truthfully.
- Try to leave or respond to messages each time you log on.
- Avoid using bad language or messages that may cause offence.
- Do not 'trough' a board (ie. log on, download everything and log off).
- Never drop your carrier, always log off properly.

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inside information

From the latest advance in motion simulators and arcade juggernauts, to the monthly games charts, Rik Haynes gives us his expert opinions on what's hot and what's not, in the ever-busy computer world...

SHAKE, RATTLE AND ROLL

As the arcade industry looks for exciting new concepts to tempt an ever more sophisticated and diverse audience, motion simulators are finally making their presence felt. Rik Haynes reports...

What are the most popular amusement machines today? If London's Trocadero centre on an average Saturday afternoon is anything to go by, R380 and Virtuality from Sega and W Industries are enjoying a comfortable lead on the original pack of standup blast and beat 'em-ups that have filled our arcades for the past decade. These next generation decks are heralding a growing and very lucrative type of video game with added spice, or, to put it another way, movies with motion.

Perhaps this is the ultimate form of escapism? Such simulation technology was first developed back in the 1960s to train jet fighter pilots without risking their expensive planes. As the hardware became more advanced, whole missions could be tried in unpleasent different ways and practised to perfection.

It was inevitable that this next experience would leak out into the entertainment industry sooner or later. Sensormax was one of the first, and still the most radical, ideas to surface. This prototype motion picture system could take the viewer into 'another world' with 3D wide vision, motion, stereo sound, wind, vibrations and most startling of all, aromas. Nobody was willing to back such a risky venture in those days. What does a Space Invader smell like, anyway?

No, Denisy would be the company to characteristically grab a slice of the action ahead of the competition. Drawing upon the imagination and wizardry of George Lucas, the man who gave us Star Wars and Indiana Jones, Disneyland entered a new era of theme

park entertainment with the introduction of Star Tours in 1987. People actually felt what they saw, creating a sensation of realism previously unmatched. You don't need millions of dollars and a bunch of Disney Imagineers to provide a fun experience, though.

Sega has been adding sensation to video games for over seven years now. It started with Hang-On, where players sat on the replica of a motorcycle and

rocked from left to right to handle any bends in the circuit. A string of hydraulically-enhanced coin-ops followed - Space Harrier, Out Run, Afterburner, Powerball and Galaxy Force II - culminating in the aforementioned R380. This gaudy conception was, in fact, a video game console that could revolve 360 degrees in all directions - back and forth, right and left. Motion sickness is almost guaranteed from a quick ride in



FAIRGROUND OF THE FUTURE

A CCD Car is, in essence, the futuristic version of a fairground bumper car. Players participate in the game by manoeuvring electrically-operated cars equipped with a CCD camera to gather up the lit light dots embedded in the floor. It's rather like an automatic version of Pacman. The person with the largest number of dots when the time has expired wins. A maximum number of 16 vehicles is possible and these mobile collisions can cost two people. Each car carries a large-size shock absorbing bumper to handle the nasty collisions, though an emergency button inside can be used at any time if an accident occurs during the game. It's a shame but Sega currently has no plans for a European launch for this remarkable amusement machine.

the baby. The Dynamic Direct Dimension Burst Out System (D³BOS) from Taito is basically R380 built for two!

In Japan, this is big business and it's likely to become increasingly important in the new shopping malls and multiple cinemas springing up across Europe. These rides provide an experience few can easily forget. There's another big plus for the further progress of motion simulators: they entertain a very broad market including adults, children, students and tourists.

Rediffusion's Commander, its recently launched two-seat interactive entertainment simulator, comes with high resolution graphics, CD stereo sound and software exclusively designed by LucasArts Entertainment, the company responsible for highly respected Amiga games like Monkey Island and Thief and Hour. Rediffusion is promising a variety of games scenarios for the system, including the likes of air combat and submarine warfare, which will 'exploit the platform to suit all tastes and interest groups'. Hopefully, the talents of Industrial Light & Magic, Lucasfilm's special effects division in charge of the stunning visuals seen during films like Return of the Jedi and Terminator 2, will also be brought into play. 'Our world beating light simulator expertise ensures the most realistic experience,' assures Rediffusion.

What hills, chills and spills does the future hold, then? Pandoi Walker of Autodesk once envisioned a bizarre virtual reality nation known as the cyberspace playhouse, where the audience would be given a role in their very own or multiplayer three-dimensional simulation.

With enthusiasm and profit in such plentiful abundance, how much longer will it be before a new simulator arrives?

THE WAY WE WERE

THREE YEARS AGO

- *Bio-Challenge*, the first effort from Delphine, suddenly hit our Amiga screens. Sadly, any evidence in later space like *Crash For A Corpse* and *Another World* wasn't yet within the grasp of these pioneering designers and programmers. As a result, the game quickly disappeared without a trace. In those dark days, Delphine was best known as the French record company responsible for the success of conventional musician Richard Claderman.
- US Gold briefly flirted with a low price for titles such as *Vigilante*, *Last Duel* and *Human Killing Machine*. The most significant reason contributing towards the subsequent failure of the label remains a secret to this day – was it the £15 price point of the said games themselves?
- Anil Gupta, amiable boss of Amco, visited the offices of nearly every computer games magazine in the country. His humble briefcases contained an early prototype of what would become the world's most famous football simulation. Everybody who saw *Kick Off* was impressed with the fast pace and the fact that they simply couldn't stop playing it. The rest, as they say, is history.
- Psygnosis had something really groovy looming on the horizon. This project from newcomer Reflections would literally beat the competition into submission with an overload of colour, hard sampled sounds and smooth parallax scrolling. *Shadow Of The Beast* certainly was a visual feast. The third outing in this approved genre of arcade adventures should be out soon.
- Games software took a surreal twist when Logotron unleashed *Archipelago* on an unsuspecting public. Following along similar lines to Firebird's brilliant *The Sentinel*, this action strategy production was blessed with tasty 3D graphics and that often neglected ingredient... originality.
- Menach, a small publisher responsible for exclusive productions like *Nigel Mansell* and *Phantom Fighter*, finally closed down. Founder David Martin now works for Gremlin where he helped secure the rights to the forthcoming Mansell driving game.

TWO YEARS AGO

- The chequebooks were in evidence again this month, as the biggest and smallest software houses scrambled for licenses to prestigious movie and music properties including Mad Max, Iron Maiden and Dirty Harry. What happened to these games, eh? On a lighter note, at least The Edge failed to deliver anything connected with Yellowhead Street. This die action cop show, a sort of cross between Miami Vice and Dempsey & Makepeace from Yorkshire Television, never even made it to a second series. The Edge didn't stop there, though. The first 24-hour music video station was also targeted for game rental. Players were supposed to become rock stars on MTV and so the rest is history. Thankfully, we heard nothing more of this appalling idea.
- Electrocoin dabbled in the dwindling coin-op conversion market with *Time Soldiers* and *Mr Do!* More 'classics' were promised but none actually appeared.
- Fifty years after the real Battle of Britain, Lucasfilm Games and US Gold relived *Their Finest Hour* with a smashing air combat game which deservedly won the CU Screenstar medal of honour. It still knocks the socks off games which solely rely on speed, long-range radar and handy air-to-air missiles. *Midwinter*, the mammoth creation from Maelstrom Games and Microprose, was another top scorer in this issue.
- Legendary Amiga artist Tobias Richter boldly doodled where no-one had drawn before with a selection of glorious sketches of Star Trek's USS Enterprise. Does this guy ever find the time to sleep?
- Bob Jacob of Cinemasoft was full of enthusiasm for the CDTV and his enhanced compact disc version of *It Came From the Desert*. 'There will be a new industry that will force the music, movie and software industries to work together'. We're still waiting for that one, Bobby.

ONE YEAR AGO

- Buzz revealed Ocean had wrapped up *The Addams Family*. US Gold wanted a Young Indiana Jones and Team 17 was attempting to emulate the violence of cult 70s movie *Rollerball*.
- Dan Singaby tracked down pictures of veteran TV detectives like Steve McGarrett from *Hawai Five-O*, Stansky & Hutch, Dixon of Dock Green, Columbo and *Charlie's Angels*. Why did he bother? Kristie had done such a good job with the Amiga adaption of *Hill Street Blues* that he was a bit bobby dazed.
- Sally Systems Limited ran a recruitment advert for programmers who fancied the idea of helping dyslexic children by producing the right educational software for schools, private tutors and families.
- Psygnosis did it again. 'With our CD-based Fractal Engine we can do Star Wars, Top Gun, The Last Starfighter and anything of that ilk,' said co-founder Ian Hetherington. 'People will feel as if they're playing the movie.' The first batch of Fractal Engine games are still in production and should be ready for release on the CDTV and other systems later this year.
- Did you know that TV star gazer Patrick Moore used to own a Jupiter computer before he became the 'Gamesmaster' on Channel 4? This, and other useless and/or totally made-up facts, were unveiled in our infamous And Finally... section.

WHO IS THE AMIGA'S 'FATHER'?

- 1 Jay Miner
- 2 Manic Miner
- 3 Fay Miner

Answer (1)

Jay Miner is the chip genius who designed the fancy bits and bobs which went into the Amiga almost ten years ago. Although our love machine was actually known as the Lomax back then. Mr Miner and the rest of his team at Amiga Computer Inc wanted to create, without a shadow of any doubt, the ultimate game computer. Their lack of compromise almost crippled the whole company. Thankfully, they finally managed to produce a complete power station capable of the best games, desktop video, dance music, and much more. Thanks, Jay...

WHAT'S THE ODD ONE OUT?

- 1 Thunderhawk (Core Design)
- 2 LHX Attack Chopper (Electronic Arts)
- 3 Gunship (Microprose)

Answer (2)

LHX Attack Chopper is the only helicopter simulation out of the three that isn't currently available on the Amiga. Cheer up! EA promises a conversion of this top game will appear sometime in the summer...

WHICH ONE OF THESE GAMES DIDN'T COME FROM THE ASSEMBLER OF KEVIN BULMER?

- 1 Terminator 2 (Ocean)
- 2 Corporation (Core Design)
- 3 Deuterios (Activision)

Answer (3)

Ian Bird was the person responsible for *Deuterios*. This strategy-led sequel to *Millennium 2 2* has gained quite a few fans since launch. Apart from *Terminator 2* and *Corporation*, dear Kevin was also the brains behind *Beast - The Great Mouse Detective* (Gremlin), *Gauntlet II* (US Gold) and *Mask* (Gremlin).

Hi Quality Version Available on AMIGALAND.COM

the software charts

TOP TWENTY AMIGA GAMES - Full Price

1 PROJECT X (Team 17 Software)

Coming straight in at number one, Team's blistering arcade-quality shoot 'em up might come on four disks, but is certainly worth a blast. Set over six massive levels and featuring some huge sprites, the game is undoubtedly the new benchmark for Amiga shoot 'em ups. If loud music, action-packed screens and more polish than Mr Sheen are your thing - get this. CU Amiga Screenshot, 92%.

2 BLACK CRYPT (Electronic Arts)

EA's epic RPG, in the same style as *Dungeon Master* and *Eye of the Beholder*, is set in one enormous dungeon and is packed with some of the most devious puzzles and traps ever seen in a computer game. The lush graphics and excellent sound effects complement an already excellent game. CU Amiga Screenshot, 80%.

3 FORMULA ONE GRAND PRIX (Microprose)

This one seems to have taken up permanent residency in the top ten over the last few months and no wonder. Geoff Crammond has designed what is undoubtedly the best racing car sim available. Everything is super slick and super-fast with three levels of detail and courses drawn up from videos of their real-life counterparts. Outstanding stuff. CU Amiga Superstar, 83%.

4 A320 AIRBUS (Thalion)

The level of detail in this flight sim borders on the fantastic at times but, nevertheless, this is an engrossing simulation. If Thalion can be believed, you should be able to pilot the real thing if you master this. For people who want a break from the routine of blasting enemy MGS to death, this is a perfect respite. CU Amiga Rated 81%.

5 HARLEQUIN (Gremlin)

Gremlin's latest platformer has you taking the role of Harlequin, a lanky and somewhat gnomish sprite who has to traverse twenty-four huge levels in search of his pet of a broken heart. On your travels you have to contend with a variety of switch-activated puzzles, spring-loaded floors, flying alarm clocks and other such weirdness. Need we say more? CU Amiga Screenshot 81%.

6 SPECIAL FORCES (Microprose)

This one failed to make the grade and was consequently not reviewed in CU Amiga. The game puts you in charge of a band of eight mercenaries, four of whom have to complete various anti-terrorist missions. There are a stack load of options to wade through, all very impressive and detailed, but once you reach the action section when the mission begins, the game falls apart. Yawn.

7 ELYRA II (Academika)

The busy one returns for another ripping RPG adventure which this time sees the player attempting to track down Elyra's kidnappers and set her free from her movie studio confines. Atmospheric graphics and some well-thought out levels make this an engrossing game, but not a patch on the gory original. CU Amiga Rated 71%.

8 SHADOWLANDS (Domark)

Yet another RPG makes the top twenty and this is one of the best. Taking control of four wandering adventurers, you must fight your way through massive caves and dungeons in search of your enemy remains. Features Teque's Photocaps fighting technique which cast ominously dark shadows on each level and creates an electric atmosphere. CU Screenshot, 81%.

9 ULTIMA 6 (Origin)

There simply isn't any other game out there with the depth of the *Ultima* saga. It all begins one stormy night when, after stuffing your face with pizza and a rerun of 'I Love Lucy', a mysterious light warps you into the fantastic realm of Britannia at the start of a magical quest. This is certainly the best in the *Ultima* series and has been especially recorded for the Amiga. A fantasy role-playing treat. CU Superstar, 85%.

10 TITUS THE FOX (Titus)

Another new entry and deservedly so. Set over seven levels, the mice are on to track down Titus' kidnapped gilly, Foxy. In your way are sword-wielding nomadic barbarians, bolts throwing down and out, skin head thugs and all kinds of nasties. This is definitely the French team's most polished platform game yet, even better than the highly-acclaimed *Blue Brothers*. CU Screenshot, 91%.

11 CASTLES (Electronic Arts)

Touted as a Middle Ages' *Sim City*, *Castles* lets the player design and build their fantasy castle and then defend it from all corners. The more complicated your design, the longer it will take to build, and you're liable to run out of cash if you get too carried away. Once you've built your castle, you'll then have to defend it from envious Celts who desperately want to take possession of your abode. CU Amiga Screenshot, 88%.

12 ROBOCOP (Millennium)

Still hanging in there, Millennium's James Bond character re-surfaces in a souped-up sequel. This time he's fitted out with a bionic midriff which lets our fishy friend expand his body upwards. There are lots of traps and puzzles dotted about each level and some of the graphics are very detailed. Suffers from poor scrolling in parts. CU Superstar, 83%.

13 JIMMY WHITE'S SNOOKER (Virgin)

Without doubt the best snooker game to have graced any home computer or video game. The simple user-interface lets you attempt almost any shot imaginable and the attention to detail is superb. Lots of nice touches, such as a fly wandering across your monitor and face-pulling balls, add a humorous element to the proceedings. CU Screenshot, 90%.

14 ANOTHER WORLD (Delphine / U.S. Gold)

Delphine's comic book adventure opens up a new style of gameplay. It's a brilliant mix of animation, puzzling and arcade shoot 'em up. The game revolves around a research analyst who's been catapulted into another dimension. Suppress all every last and turn, with little left to the imagination. Not to be missed. CU Screenshot, 91%.

15 PGA TOUR GOLF (Electronic Arts)

This is probably the best Golfing game in history, if it wasn't for quite a bit of necessary disk swapping and the release of Microprose's golfing epic. The game is still challenging, with over 16 pro golfers to compete against, over several different tournaments. The action replay facility is amazing, if the computer's precision isn't somehow all the more rewarding when you achieve a shot deemed worthy of this accolade. CU Superstar, 93%.

16 LESURE SUIT LARRY V (Starna)

Loveable lad, Larry, is currently working for a cable porn channel and, as the ratings take a nose-dive, Mr Big comes up with the idea of a tacky 'Bird Date' style show. Larry is asked to host the show and is given the task of tracking down the sexiest old bolder in the country. Interaction is limited to the constant clicking of the mouse button to skip through the rooms of text. Neaving the end of its run. CU Amiga Rated 82%.

17 POPULOUS 2 (Electronic Arts)

One of the best games ever released. No kidding. Basically the same gameplay as *Populous*, only everything has been improved to perfection. Try to become more powerful than Zeus by defeating a series of Greek Gods and mythological creatures. A genuine classic. CU Amiga Superstar, 87%.

18 PINBALL DREAMS (21st Century)

Designed by top demo outfit, Starna, there are four tables on offer, all based on real-life tables but tweaked up so the copyrights aren't infringed. Each table is three screens long and there's an adequate selection of sound effects, but inevitably the tactile feel of the real thing is lost. CU Amiga Rated 80%.

19 INDY HEAT (Starna)

Layland's superb coin-op makes it onto the Amiga and is a very playable conversion. All the options are in place, including the all-important turbo, and each race track features some devious turns and ragged straights. Unfortunately, there are only ten one-screen tracks to compete over and things become a bit pedestrian after a while. CU Amiga Rated 80%.

20 LEMMINGS (Prygonics)

There can't be many people who don't own a copy of this intuitively addictive game. Over a year in the charts, and it's still selling, a testament to its originality and brilliant gameplay. The basic aim is to guide a group of lemmings across a horizontally scrolling landscape. On this way, the mop-top tribe display their suicidal tendencies by attempting to jump off any convenient ledge. By using a set of icons, it's possible to guide them to safety although there's also a devious puzzle or obstacle to solve on each level. CU Amiga Superstar, 84%.

Chart supplied by MicroByte

MICROBYTE CHARTS

From this month onwards, CU Amiga have teamed up with Microbyte, a nationwide chain of computer stores, to bring you the very best Amiga charts appearing in any magazine. Using Electronic Point of Sale (EPOS) systems, Microbyte can monitor each title's performance on a daily basis, thus providing the most up to date information at the click of a button.

TOP TEN BUDGET RELEASES

- 1 RAINBOW ISLANDS (Hit Squad)
- 2 JAMES POND (GBH)
- 3 F16 COMBAT PILOT (Action 16)
- 4 1st DIVISION MANAGER (Codemasters)
- 5 KICK OFF 2 - Giants of Europe (Anco)
- 6 TOYOTA CELICA RALLY
- 7 POPULOUS (Star Performers)
- 8 PAPERBOY (Encore)
- 9 ROBOCOP (Hit Squad)
- 10 MIDNIGHT RESISTANCE (Hit Squad)

Chart supplied by retail chain, MicroByte

WHAT THE TEAM ARE PLAYING

Dan Slingsby - Project X, Space Crusade, Quick and Silvo
 Steve Merritt - Larry V, Addams Family, Paradox Stars
 Steve Keen - Fire and Ice, Eye of the Beholder II, Harlequin
 Tony Dillon - John Barnes, Space Crusade, Castles

well schooled in the *amiga*

In the first of a new monthly educational column, Mike Gerrard takes a look at the intriguing uses to which the Amiga is being put to in classrooms up and down the country.

SCHOOLS OUT

An increasing number of education authorities are saying 'Could do better' when it comes to the computers they've been used to using in the classroom. They're turning their backs on the traditionally 'approved' machines like the BBC and Nimbus, which have long had a stranglehold on the British education system, and are looking instead to more exciting and economically priced computers - like the Amiga, which is roughly half the price of the Acorn Archimedes.

In the past, micros have been stuck with labels:

the PC was a business machine, the Amstrad PCW a word-processor, the Amiga a games machine and the BBC an educational machine. At last people are waking up to the fact that to regard the Amiga as purely a games machine is like having a car and only ever revving the engine. While it IS a supreme games machine, it is also ideally suited for conventional tasks like word-processing, for art and music, and for specialist subjects ranging from creating knitting patterns to helping with dyslexia. In a world of cross-curricular activities, what better than a cross-curricular computer?

GOING TECHNO

To get the most out of using computers in schools, you naturally need more than a single aged BBC-B machine, locked away in the stationary cupboard, and meant to provide for the needs of a class of 36 children. Most modern schools have whole armies of Amigas, such as the Dayncourt School in Nottingham, where 24 machines provide the school with one of the most up-to-date Information Technology departments in Nottinghamshire. Here, pupils can use software packages that would cost the individual home user an arm and a leg: *Deluxe Paint*, *Deluxe Print*, *Publisher's Choice*, *Pen Pal* and *Superbase*, for example.

Another well-equipped school is the Feltham Community School in Middlesex, with 27 networked Amigas, mostly in the computer room, with others dotted around the school in the art, music and drama departments, and in the school library. The art department uses *Deluxe Paint* and various animation programs, one Amiga is used for textile design, others are being used to produce a school promotional video, and there's a flourishing Amiga-based Desktop Publishing set-up which not only provides for the school's own needs but raises funds by doing work for local businesses.

The man responsible for this activity is Tony Loughlin, Feltham's head of Business and Information Studies. One advantage the Amiga has, he says, is the so-called High Street effect. 'Many pupils now have 16-bit computers like the Amiga at home. They use them anyway, they're excited by them, they like using them. They can no longer say, 'Oh, the BBC's the boring old school computer that's got dreadful graphics'. Even the Archimedes, as good as it is, is the computer you only find in schools, not in Dagny's window or the average lad's bedroom. It's the Amiga you find them using there. Can you imagine them coming into school, after spending several hours playing games which have state-of-the-art graphics and sound, and the teacher having to try to excite them with a technically inferior machine? Plus they can do their homework on them, and just bring the disk in to work on the same machine at school. It also encourages them to see their Amiga at home as more than just a machine for playing games on.'

SHAPE SHIFTING

Art and design is an area where the Amiga is proving particularly popular, with its easy ability to manipulate shapes, and the chance to doodle and experiment with patterns and colours. The AmigaKnit program is used in the Home Economic departments of many schools, allowing pupils to create designs on-screen, and then either print them out to any Brother knitting machine, for an instant cardigan. Presumably they use a scarf socket?

The Blake School in Bridgewater, Somerset, uses the Amiga 500 for art design and appreciation. Their IT co-ordinator, Mel Petty, feels it important that the pupils come to see the Amiga as another artistic tool, like a brush or a piece of charcoal, but one that's capable of its own unique results. It isn't only skilled artists who benefit from the computer, however, as the Blake School has found, in particular, that pupils with reading and writing difficulties respond well to the Amiga. A computer is infinitely patient, and allows all pupils to work at their own pace, but children enjoy helping each other much more when a computer is involved, creating an air of co-operation rather than competition.

To bring the story round full circle you have the activities of Kent Education Television, otherwise known as KETV, and definitely not to be confused with KVTU. This specialist educational video production company uses three Amiga 2600s and three Amiga 500s at its studios in Dover to help produce top-quality graphics for its videos which, amongst other things, help to teach teachers how to teach. And not a computer game in sight.

Another effect, to Commodore's delight, is that where Amigas are introduced into schools, a high proportion of teachers end up buying one for themselves. It's a snowball effect in that once the kids have become hooked at school they or their parents might also buy a machine to use at home.

GOOD ALL-ROUNDER

The versatility of the Amiga, and its wide use in lots of creative areas like film-making and design, benefits everyone. To expand on Tony Loughlin's point, it isn't the Archimedes and it certainly isn't the Nimbus that you find being used in design studios, TV studios, theatres, offices, music studios and just about everywhere else. This wide-ranging use creates a wide range of software, and schools can buy this too - and usually at an educational discount. Where a machine is perceived as being an educational computer, like the BBC, this inevitably has an effect on software developers who specifically target educational needs. If asked to design an art package for use in schools, would you come up with *Deluxe Paint*? And what's the point of mastering educational software in school, when you then leave and are faced with a range of different machines? There aren't too many BBCs in use in offices.

Obviously, schools aren't merely choosing Amigas because they're cheap and pupils are likely to have them at home. Educational demands still have to be met. 'There are two ways of approaching the National Curriculum,' Tony Loughlin of Feltham School explains. 'One is to follow it absolutely, to say that we have to cover this and that, and therefore allowing that to dictate your timetable. But there is another more creative way to go about it, which is the way we want to do it, and that is to decide what it is you want to do, in terms of project work and so on just as you did before, but then look at it carefully and creatively and be able to say, right, well in doing that project we are going to cover A, B, C and D on the National Curriculum. And the Amiga is ideally suited to this more creative approach.'

Can the Amiga satisfy the demands of the National Curriculum for music, though? The Atari ST has usually been regarded as superior to the Amiga when it comes to music, because it began with the advantage of having its own MIDI port, but that hasn't deterred the Birmingham Local Authority who recently invested in no less than 105 Amigas, primarily for use in art and music. They are currently being evaluated in Birmingham's eighty secondary schools, in particular at the Joseph Chamberlain College. Here a music technology centre has been created, and teachers are being trained in the use of the Amiga in music, in readiness for the new National Curriculum for music.

There are an untold number of uses to which the Amiga can be put. Educational establishments up and down the country are continually refining the way computing is taught. Gradually, the Amiga is moving out of its specialist ghetto and being used in math lessons, in physical education, art and design and many other areas on the school timetable.

Over the next few months we'll be taking a look at some of the more interesting ways in which the Amiga has been put to work in the education field as well as reviewing all the latest software and technical innovations. If you're a student at a school or college which uses Amigas extensively, why not drop us a line and tell us about it?



A network of 27 Amigas forms the main computer backbone at Peckham Community School. A special DTP unit produces all the school's literature and booklets.



Daywood School in Nottingham has one of the most advanced networks of Amigas in the country and pupils have access to a wide range of software including *Deluxe Paint*, *Deluxe Print*, *Page Pro* and *Publisher's Choice*. Obviously the school has a big interest in DTP and various courses leave pupils well-versed in computer technology.



Children with special needs can benefit from Amiga technology. Blue School in Yorkshire has found that pupils with reading and writing difficulties respond well to the Amiga. It certainly isn't short of education software and many schools are even running their own 'in-house' programs to cater for areas that aren't covered.

High Quality Version Available on AMIGALAND.COM

THINGS THAT MAKE YOU GO

How many times have you bought a game that's, frankly, below standard? Rik Haynes, European Editor of LOG-IN, asks if the Amiga has a bright future if publishers keep producing such rubbish?

Hmmmm...



DIJA VU

It's a familiar story: the eager software company, out to hustle for fame and fortune, spends a large amount of cash securing the rights to a hot movie license from Hollywood. Development budgets and schedules are stretched beyond their limits to accommodate the new game, and with little time and money left to get a product out on the streets, corners are freely cut. The end result is a disappointing game (Ocean's *Darkman* and U.S. Gold's *The Godfather* immediately spring to mind) that's hardly worth the asking price.

Ocean, at least, have gone some way to rectifying past offences with the release of *RoboCop 3* and *The Addams Family*. However, poor software isn't solely restricted to 'film licenses', and the situation begs the question: Why does this happen? And, more importantly, can it be prevented?

As players clamour for more sophisticated games, better quality and more imagination is going to be the order of the day. There are no short-cuts to success. It's getting very hard for the mavericks to produce a stunning game on their own. Three of the best-selling Amiga games of recent times — *Formula One Grand Prix* (Microprose), *RoboCop* (Millennium) and *Jimmy White's Snooker* (Virgin) — could be the last of the great creations from minnow companies who are being financially pushed out by the bigger fish

Games like *Populous II* (EA/Bullfrog) and *Shadowlands* (Domark/Teque) took a group of designers, programmers, artists and musicians many months to produce. A creative group of game engineers often bounce new concepts off each other, so it's important that these smaller sweatshops are encouraged in order to keep new, fresh, and untainted ideas coming, ideas that are not induced by profit.

SEEDY CD...

Whilst the development fraternity makes its first steps into the new age of CD-ROM, the situation of lecture gameplay is going to get far worse. Costs will rise dramatically, while flashy presentation will try to make up for a lack of depth and playability. I doubt whether many would be going to take the sort of risks which result in something special. Let's face it, most of the stuff released so far on CDTV just doesn't make the grade. When it comes to CD-ROM, designers in Tokyo, Osaka, and Kyoto are way ahead of their counterparts in Manchester, Birmingham, and Croydon. Konami, for instance, has even set up a special technical institute in Kobe, to study the heavy concepts of making good CD games which take full advantage of the incredible machine's capabilities. The British division of Commodore can't even issue a permanent release date for the A570 CD-ROM let alone get the product itself out. Only Playgnosis, with the *Fractal Engine*, has shown this level of commitment to CD-ROM hardware and software.

So, what are other publishers in the UK and across Europe doing to ease this difficult transition period? Not a lot, actually. Surprisingly few companies are willing to invest in the future. They're too busy scrambling to make a killing on the 16-bit consoles from Nintendo and Sega, whilst dreaming of the day when that blustering old IBM PC becomes the ultimate games computer. Investment and training are seen as the key ingredients of a winning formula in Japan. Far-sighted managers in the land of the rising Yen have therefore set up schools to teach students how to create best-selling video games. If only Commodore had a strong presence in the Japanese market, then we could also possibly benefit from the results of this Samurai spirit.

Many observers have suggested Commodore should exercise a tighter control over the quality of software released on the Amiga and CDTV. Nintendo is ruthless in this regard. It cleverly used such a scheme to turn around the devastating video games crash in the USA eight years ago. This crafty Japanese corporation decided that there were simply too many mediocre games being released on other formats, and made sure this mis-

take wasn't repeated on Nintendo's Entertainment System. This could be the reason behind the smart card slot on the new Amiga A800 model? It would certainly make such a 'quality assurance' policy easier to implement — especially if Commodore is secretly sitting on a massive smart card stockpile in the Far East. The illegal copying of software would also become more difficult for the average hacker, cracker, pirate or whatever they call themselves these days. The downside is that smart cards are bloody expensive when compared to floppy disks, CDs and cartridges. Thus, the price of games would probably increase if they are used.

ETERNAL HOPE

I freely admit that the Amiga holds the potential to bridge the gap between video game console and expensive personal computer, but is it going to have an easy ride? I don't think so. Japanese and American firms aren't interested. Only the Europeans, the British and Germans in particular, still have the incentive and capability to push the Amiga further. It's going to be a crying shame if nobody is willing, and able, to handle the challenges ahead. Fast action is required to catch up. Publishers and developers must make a few tough decisions and plough more back into research and development. The channel of communication between punter and publisher should also be opened. Inform the offending company and, through the letters pages of CU Amiga, follow players of the reasons behind any discontentment. It can't end there, though. New talent needs to find a forum to showcase ideas and work, and all the cowboys need to be frozen out. Only then will the Amiga stand a chance against the consoles.

LOG-IN is Japan's leading computer game magazine.

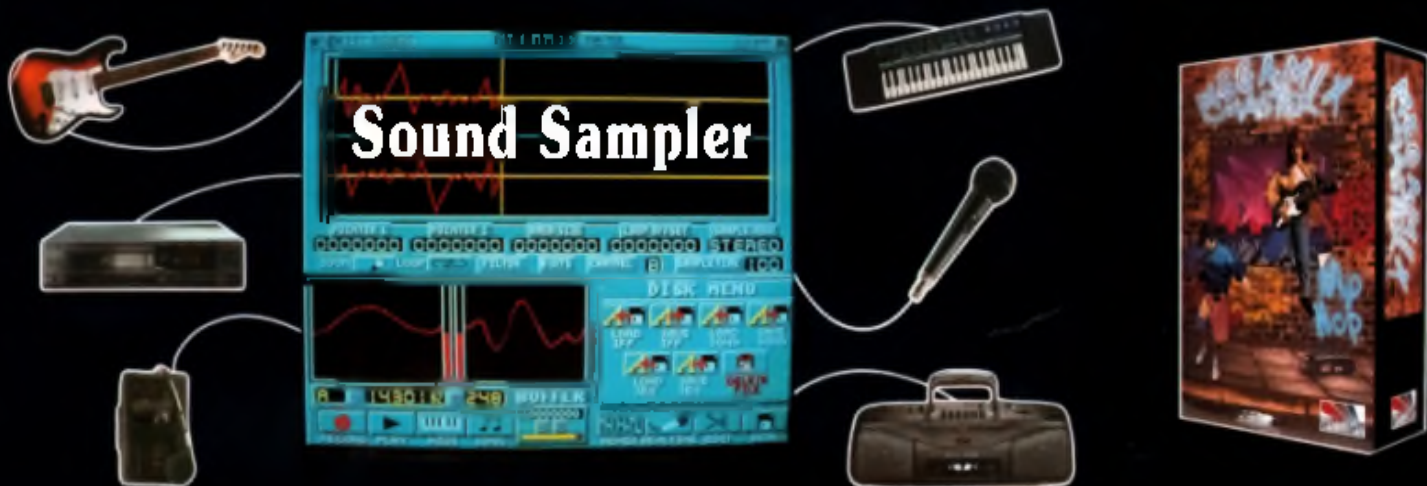
TOP TEN PERSONAL AMIGA HATES

- 1 Workbench has to be loaded from disk
- 2 Old software refuses to work on new machines
- 3 A floppy disk can be damaged if it's removed while the drive is working
- 4 Increasing cost of games is a pain in the ass
- 5 Games that ignore any additional floppy disk drives shouldn't be allowed
- 6 TV coprocessor could have been built in
- 7 Floppy disk drives continually click if there isn't a disk inside them
- 8 The position of the on/off switch on the power block really sucks
- 9 Most CDTV software is crap
- 10 Why are we still waiting for the A570 CD-ROM drive?

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COPY—Copies sample between pointers into the cut buffer.

INSERT—Inserts the contents of the cut buffer into the soundwave.

SPICE—Removes the sample between pointers, inserts the cut buffer then slides the rest of the soundwave together.

CMOP—Removes all of the soundwave except for the sample between pointers.

DELETE—Erases the sample between pointers.

MIX—Mixes the contents of the cut buffer with the soundwave.

FLIP—Reverses the sample between pointers.

PLAY CUT—Replays the contents of the cut buffer.

ECHO—Adds user definable echo between pointers.

IN—Makes sample between pointers start quietly and build up to full volume.

OUT—Offers the opposite effect to IN.

PHASER—Adds phase shift to your sample.

LOUDER—Adds volume.

QUIETER—Decreases volume.

SEEK 0—Finds zero points nearest pointers, used in looping.

FILTER—Removes high or high frequency noise from your sample.

PACK—Removes every 2nd sample between pointers.

SCMO—Adds echo to and incoming sound in Real Time.

DIRECT—Plays incoming sound direct through Amiga.

SYNTH—Adds user definable distortion to sound in Real Time.

PHASER—Applies variable phase shift again in Real Time.

STEREO SCMO—Adds digital delay between L & R speakers.

VIBRATO—Rapidly varies frequency of sound.

LOAD IFF—Load a single IFF sound sample

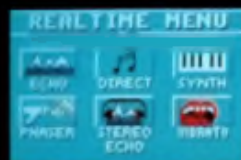
SAVE IFF—Save your sample between pointers as an IFF file.

LOAD SONG—Load a song sequence

SAVE SONG—Save a song sequence.

LOAD MIDI—Load a midi sequence.

SAVE MIDI—Save a midi sequence.



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