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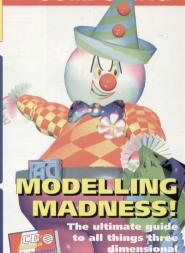
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SUPPLEMENT INSIDE



ide it is Commodore's unique custi Together they make Amiga CD32 and awa some powerhouse of high speed graphics and

In fact, the machine can display 256,000

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# 2 Megs 32 - bit chip RAM # S- video inck

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JAKKI BRAMBLES COLUMN

Hi. It's been quite a month in the Commodore marketplace, no sooner had we all been told that Commodore had lost their shirt than we have First we have the launch of two brand new Commodore Amiga 1200 packs one aimed more mature purchaser. The Chartbuster Pack is creat value bundled with Nicel Mansell's World Championship race simulator, Trolls AGA and the all time favourite Amiga Challenge Pack. Desktop Dynamite reinforces the all round strength of the A1200 with a very power-Print Manager, Deluxe Paint IV AGA, Oscar

AGA and Dennis The Menace AGA. It's good to see Commodore create such a clear distinction between the Amiga 1200 market and the games console market, soon to be dominated

about to land in the UKwith a promised street date launch of the first week in September. The major news around this product is just how many of the softwaRe publishing houses are enthusiastically writing for it and of course that Commodore have decided to bundle 2 great soft-

Not to be outdone INDI have added a third so look foreward to receiving Oscar, Diggers and Lemmines when you take delivery of your New

The other item of news from Commodore does appear to be causing somE confusion. It is true that Commodore have appointed the giant ICL products but this only applies to Amiga CD32 ucts and packs previously purchased or yet to be purchased will be covered by Wang. Finally it was very sad to hear this week of the

demise of Diamond Computer a well known advertiser in the Amiga Market. There is no doubt that the recession continues to cause the closure of many companies often without warning. Once again please be careful with your hard earned money and make certain that you follow the code printed in most magazines before you make that special purchase. See you next month.

Jakok Ban Bes

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29.99 69.99 69.99 by John Butters

# **CBM** make £7m **Amiga push**

A 67 MILLION advertising and promotion campaign aimed at ensuring continued success for the Amiga has just been unveiled by Commodore

ons

It comes at a critical time for the manufacturer - after a year of heavy cash losses. the world - and alongside massive indus-

More than 40 CD32 games titles are planned for launch between now and Christmas, with James Pond 2 and 3. Jurassic Park, Pinball Fantasies and Sensible Soccer among the first.

Two discs will be bundled with the player, and although Commodore refused to confirm their details, a reliable source

\* told Amiga Computing they will be Diggers

But according to Commodore the changed frequently to enable several softopportunities.

The firm's autumn campaign will cen-European satellite and national television and radio, newspapers and top consumer

The player has already been featured regularly on children's TV shows and competitions in several high circulation newspapers have highlighted its advanced technology. Television advertising due to start in the next few weeks will use an android as a leading character who plays but cannot beat a console

The creature will also be featured on Commodore's show stands and in other merchandise being made on behalf of the manufacturer.

Press advertising is planned in teenage magazines, national newspaper and specialist computer publications, with some of the ads pushing computers in the

"Amiga CD32 is a landmark machine." claimed joint Commodore boss David Pleasance, "Everybody's talking about it now - weeks before its launch. With this



Pleasance: Giring CD32 heavyweight backing

campaign, we're giving it the sort of into sales. I'm certain Amiga CD32 will be

# ICL to fix Amiga snags

ombine our strengths – innove-ve technology, sales and mar-eting – with the best logistics anagement available. We believe ICL is the best and its service and logistics infras-

ructure will give customers the sest possible back-up . A way so solesepron said the company had been invited to ten-ter for the work but were not in a position to offer manufacturing and dist ion needed by Commodore.

on reeded by Commodore.

The firm — who were criticised by Amiga owners for delays in attending to ally computers last Christmas — will continue to provide after sales service to stating owners.

# Software mix for new bundle

AN A1200 bundle featuring a selection of games and productivity software worth £310 will hit the streets before autumn's peak selling period, Commodore have con-

The £349 Desktop Dynamite pack will come with programs developed to take advantage of the computer's graphics capability, including two of the latest games. Dennis the Menace and Oscar will accompany home productivity software

Wordworth v2, Print Manager and Deluxe Paint 4 AGA. "We decided that because the Amiga 1200 is really a mean piece of hardware we were not going to major on games per se," said joint Commodore boss David Pleasance

"We wanted to include software which somebody - whether they were buying for the first time or upgrading - would find a valuable piece of additional software. Desktop Dynamite will replace all existing packs, including the £299 standalone A1200.



A1200: Non packed with



500 complimentary tickets available to the first 500 callers. All you need to do is telephone the Spotlight Amiga Hotline which is 081-885 5098 quoting the following reference number: S.A.N.

Tickets are also available at the kiosk price £1.50

Spotlight Amiga will provide visitors with demostrations of software and hardware configurations and permit them to ask questions about many products directly to experts in the field. It is expected that the new CD32 will be on display to the public as well as NewTek's Video Toaster

# Discover the world of Amiga with the following professional top name companies:

- Hi-Soft
- Amiga Warehouse
   Maridian Software
- Meridian Software
- Weekend Developments
- Micropace
- 16/32 PDPower Computing

- Gasteiner TechnologiesMarpet Developments
- Compo Software
- BSC (Germany)
- Golden Image
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- Antic Systems

- Computronics
- Broadfield Computers
- Jam Magazine
- Syntronics
- Access AmigaPrima Technologies UK

Prima Technologies Ur and many more

# Spotlight Amiga

Hammersmith, London 17th October 1993 is the only place to be Sponsored by
Gasteiner Technologies
Micro Pace UK
Golden Image UK

Opening time 10am till 6pm Organised by Gasteiner Technologies Tel: 081-365 1151 Fax: 081-885 1935

# News **Briefs**

#### Body building

A KIT containing add-ons needed to build the CD32 into an Amiga computer will be available next year. Commodore have just confirmed.

The pack will include a keyboard. mouse and floppy disk drive. Commodore said fluctuating currency exchange rates meant they were unable to reveal price details

#### Animation training

AN Amiga computer ani graphics training course will be held by London-based Connections (081-741 1766) in November. The two-day event will cost between £60 and £90.

#### Performance boost

HYPERCACHE Professional is a software-based accelerator which is increases on hard and floopy disks. speed can be appreciated are loading. windows open and reopen.

The £46.95 package is being sold in Britain by Meridian Software (081-543 3500). More details can be found on

#### CD32 video promise CD32 will have full motion video capa-

bility within the next few weeks. Commodore's joint general manager David Pleasance promised recently. It will be aimed mainly at the music

video market and enable up to 70 minutes of video footage to be played from Pleasance said that the FMV module

accompanied with an up-to-date video likely to be sold in a bundle with the player giving buyers a cash saving.

#### **Bugs fixed** A BUG fix for Bars & Pipes Professional

is now available for \$9.50 from Blue Ribbon Soundworks' US office. The firm are at Venture Center, 1605 Chantilly, Suite 200, Atlanta GA30324.

# Panasonic cut printer noise

PANASONIC have extended their QuietPrinter range with the KX-P2023, a narrow carriage 24-pin dot matrix printers which uses latest sound reduction technology.

Amiga, with options adjustments, margins, form

at 80cps in four letter quality fonts; Courier, Prestige.

32K extra available as an option, and Epson LO and IBM Proprinter X24E emulations. It is supplied with IBM 0900.444220



ANIMATION will take less time than ever before when US-based Newtek's Screamer 3D rendering engine is launched towards the end of this year

That's the claim from the develoner who say the device's four RISC processors will enable a Video Toaster system to deliver twice the 3D rendering power of a Cray 1 super computer.

It will operate at over 600 MIPS and by running each processor at 150MHz with both internal and external caches

speeds. Already Newtok's Video Toaster and Lightwave 3D animation system have generated 3D effects for television shows in the States, includ-

Screamer will cost US\$9.995 and requires a Video Toaster workstation. which is for the time being only available for NTSC displays.

#### Atomox saves disk space

pression utility written for Amiga owners

Its graphical interface enables users to load, pack and save files while a special within AMOS Professional.

The program's makers, Infinity space saving of more than 75 per cent.

# Budget power genlock arrives A SOFTWARE-independent

(0256 708110) is claimed to be ideal for hi-band and composite

feed Amiga signals, video signals, mixed Amiga and video signals or key inverted mixed sig-nals into a video recorder with fade in or out. And red, green and blue processing of the Amiga signal is possible by rotate control knobs on the device, which has a bandwidth of 10MHz.

# Optonica make non-game CD title

with 14K of memory, with

Amiga CD32 will be an encyclopaedia of Optonica (0455 558282) have just Insight: Technology will cover

everything from the ball point pen to the space shuttle, with more than 260 items explained with the help of graphics and motion video. The Insight range will be increased fur-

ther later this year with guides to authoring system. . Interplay is claimed to be a non-techni-

cal system aimed at creative producers. and has already been used to develop several programs.



# DIARY DATES

17 October 1993 Snotlight 4mins Gasteiner Technologies (081-885 5098) Venue: Novotel Hotel, Hammersmith A mini-show aimed at giving Amiga enthusiasts the chance to view and buy Amigas and products

11 to 14 November 1993 Future Entertainment Show (0225 442244) Venue: Olympia, London A multi-format computer and console show. Tickets must be bought in advance on 051-356 5085.

13 November 1993 All Micro Show 7 Organiser: Sharward Service (0473 272002) Venue: Bingley Hall, Staffs Last year's event saw 60 stands, some with Amiga products

19 to 21 November 1993 International Computer Show Organiser: Westminster Exhibitions (0222 512128) Venue: Wembley, London Discounted software and hardware plus product releases.

12 to 15 January 1994 RETT '94 Organiser: EMAP International (071-404 4844) Venue: Olympia. London. Britain's leading IT exhibiton for the education market

# **OVERSEAS**

23 to 25 October 1994 Amiga '93 Atacom Organiser: Atacom Venue: Paris, France A range of Amiga exhibitors and developers including Commodore

. If your company is organising a show relevant to the Amiga and it's not listed. let us know so we can include the infor-

# **Picture support for** new Superbase

soon, its British distributors Meridian Software have announced

Shase Personal 4 is compatible with the latest Amiga operating system and graphics and is said to offer a complete data management system for small business and personal

It is completely different from earlier releases of the package and Meridian describe it

A video cassette recorder, like interface enables users to select fast forward or rewind easily, get the first, last, or next record and start or pause an index query of the filter oper-

The program supports sound files, IFF images, EPS clipart and text and number files, which can be stored and organised including a facility to create a picture/data library

printed and reports can be put together from linked databases.

It will work on any Amiga and cost £149.95. Meridian can be telephoned on 081-543 3500, while existing users looking to upgrade should contact US-based Oxxi on 0101 213

# **AmiTek expand Amiga memory**

A MEMORY expansion board containing a battery-backed clock has just

It gives A1200s up to 8Mb of memory and a maths coprocessor can be fit-

offering high specifica-tion products at aggres-

spokesman Andy Leaning. release of their board to ' ensure that they could

offer end users a RAM Unpopulated the board costs

production plants - which we reported last month - buyers should

# Back to school with AMOS

to write educational programs with the help of AMOS in Education, the latest addition to Kuma Books range of publications. According to Kuma it gives bud-ding programmers all the

According to Kuma it gives bud-ding programmers all the informa-tion they need to produce software, from the planning to tips and tricks to make the program run smoothly. It starts with full specifications, graphics and code for four educa-tional games and then allows the

The last section gives a game's specifications and readers can add heir own graphics and ideas before inking it to the main program. "It is very useful to be able to

orce what is being learnt at chool," said a Kuma spokesman. "AMOS gives people the oppor tunity to write educational pro-grams for their children, brothers, sisters or friends."

AMOS in Education was w

ook enables buyers to send for a ree disk containing finished pro-rams, useful routines and source and to follow.

#### Suppliers to hold London mini-show

A GROUP of Amiga peripheral and software suppliers have joined forces to hold

The organisers say that visitors will be and hardware and ask questions about

and cost £1.50 for admission.

many products. include Gasteiner, Power Computing, Amiga Warehouse, Golden Image and

First Computer Centre Said Gasteiner's Vas Shah: "We feel this show will provide Amiga users with close and to learn first hand about particular features." Spotlight Amiga will be held on Sunday, October 17 from 10am

# Amiga takes video control

AMIGA computers are behind a new video wall system just introduced by Watfordbased audio-visual and multimedia specialists CD Interactive

Expandaview enables a wall of up to 256 monitors to be built and, using speciallywritten software running on A1200s, point of sale and point of information systems can be developed. And another program running on an A4000 powers the video wall in

sporting arenas, featuring an on-screen clock, scoring, messaging and realtime anima-

Among the first customers are Wolverhampton Wanderers Football Club, who will It will enable the club to display match information as well bringing in extra adver-

A spokesman for CD Interactive told Antiga Computing that Amigas were chosen because the firm's software division of had been working with the computers for several years.



High Quality Sound Sample for all Amiga Computers



AMIGA

Megalosound is a brand-new 8-bit stereo sampler from Microdeal white features direct-to-disk recording at rates of 21KHz stereo and 28KHz.

The Megalosound software is packed full of easy-to-use editing features, special effects and extras such as the ability to print waveforms and sample

> The Megalosound package allows sampling up to 84KHz mono 6 56KHz stereo into memory and comes complete with a hardware volume control, phono input sockets and a superb 144-page manual.

> > AMIGA

NAME OF TAXABLE PARTY OF TAXABLE PARTY.

Megalosound (£34.95), Clarity 16 (£149.95) and ViceoMaster (£69.95) are available from all good music and computer stores. In case of difficulty, you can order directly from Correy 16 allows professional 16 bit storeo samples up to 32khz & mono samples up to 44khz on a standard Amiga. Faster Amigas can handle faster sample sates

Editing Ifeatures Include Cut, Paste, Overlay, Insert, Mix, Delete, Hide, Volume, Fade, Normalise, Reverse, Monitor, Block, Trigger sampling, Stereo pan, Channel swap and more,

Extras include a full MIDI keyboard emulator, a Sample Sequencer allowing re-arrangement and re-mixing of your samples within the editor, many special effects, FFT analysis, re-synthesis of samples and much more

AMIGA

# VIDEOMASTER





VideoMaster combines the beauty of a video digitiser, the fun of a sound sampler and some superb software to create a truly revolutionary package that is great

Digitise monochrome video clips, quarter screen, from a video recorder or camera at up to 25 frames/sec and save the film to disk.

Add Audio using the built-in sound sampler and editing software or use an external sampler such as StereoMaster, Megalosound etc. Integrated Multimedia Video & Audio Sampler for your Amiga 500/500 Plus





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Still Frame your video recorder and produce high quality greyscale stills. Or use the colour filters provided together with your Camcorder to create great colour stills.

Make your own Movies by using the built-in video sequencer to combine video clips with recorded or imported sounds, assign these to keys and then build up movies as a sequence of clips (see screenshot above) with an audio soundtrack.

Additional playback modes include a picture-in-picture facility.

Call or write for more details.

novatronics have once again give came some take — they removed one

If you're not familiar with CanDo, it's an application that lets you use a graphic language to create your own programs of programming the Amiga. It's remarkably powerful, and has actually been used

The new features help bring CanDo up to date with the latest Amigas, as well as

The biggest enhancement is AGA graphics support; CanDo now pulls up a of your Amiga's available graphics modes this should also allow you to create CanDo applications for cards like the

Another big enhancement is the ability voice OCTAmed songs), with full control

What's CanDo and takes away

cleaned up, making it easier to find functions and to perform formerly tedious objects across the screen.

#### MORE SUPPORT Both CanDo programmers and users of

CanDo applications will be happy to dissupport for the system standard ASL

Denny Atkin looks over an enhanced authoring system, plus two programs for experimenters

your own CanDo applications. There are other improvements, such as allows you to flow text around irregular

The upgrade is only \$25 for CanDo 2.0 surface or \$25 for air), which seems quite things you should know. First, CanDo 2.5 AmigaDOS 2.04 or later. (Not a big deal,

More signicantly, you can no longer use the stock CanDo package to create DeckBrowser, utilities that would allow

On the plus side, they will waive the inconvenient, especially for European

However, the upgrade does look good. If you want to create CanDo applications for AGA machines, it's definitely worth getting. If maintaining 1.3 compatibility is

# Fontastic celebration

St. Lone-based Sohl-ogic childrated the end of the floods that here played the understant. Unlited States they are by equiring world water distribution rights to the Typedam from Conting programs, on their put research on minore version. The objects crews in Typedamic 2-in a hard training you can now lood in a scanned image of a character or an area of the continued of the character of the continued of the character between the open from and much increased opens. The upopode is 50% the package relation of 1930s Character of 1930s Chara

#### Chance to try some new Mega tricks gram which supports X-Specs, such as VistaPro or

The recursively named MegageM have announced two new products that will appeal to the Amiga user who's a bit of an experimenter.

By appearances, MegageM's RPaint is a full-featured non-HAM ECS paint program that supports up to 64 colours in autoscrolling resolutions up to 16000x16000. All the standard paint-program commands are available from pull-down menus or key equivalents, and the program supports scalable outline tonts. Sounds pretty average.

Wrong. Underneath the standard user interface lies fullblown ARexx support for all the commands. At the simplest level, this means you can use RPaint as an easy way to display graphics created by programs written in the ARexx scripting language included with AmigaDOS 2.04

and greater.

Since ARexx doesn't have any graphics commands built in, this adds a lot of flexibility to the language. But even more useful is the capability to control RPaint's dis-

For instance, you could write an ARexx macro to read data from a Professional Calc spreadsheet and draw a chart or graph of the data on RPaint's screen; you could write a script to draw images in real-time, controlled from

play from other ARexx-savvy programs.

a multimedia program like CanDo or AmigaVision; or simply use it to create user-controlled slideshows. RPaint can automatically create a script from your drawing actions, which you can then go in and modify and enhance - this feature is great for creating interactive

presentations. This programmable paint program requires AmigaDOS 2.04 or greater and retails for \$79.95 (add \$8 shipping to

Europe.) Is your biggest complaint about your Amiga the fact that it has a bit of a two-dimensional personality? MegageM's StereoPro Amiga is a joystick connector interface for LCD 3D glasses which is a plug-compatible replacement for the old X-SPecs 3-D glasses. Any pro-

Packed with StereoPro is a disk full of 3D utilities. The neatest of these is MegageM's own SPX, a program

which lets you create real-time, animated objects in three dimensions via ARexx. This double-buffered animation systems fully supports PAL; some impressive sample scripts are included to get you started. Perhaps one of the neatest applications is

Modeler (\$99.95 from Dubois Animation, 405-348-4670) - you can actually create 3D objects for program like Imagine and LightWave in three dimensions! StereoPro retails for \$225, including one set of 3D

glasses. The interface has a port for a second set of glasses, which can be bought for \$150. StereoPro and RPaint are available from MegageM, 1903 Adria, Santa





ver since the launch of the CD32, the Amiga world seems divided into two distinct camps. On the one hand we have the amazed but happy campers who are simply thankful that the big C seem to have finally hit the hardware nail right on the head.

Unfortunately just across the grass at the waterlogged end of the muddy field of argument sit the very unhappy campers. These boys actually go camping on the offchance that it will rain - and more importantly, rain on

To be fair, such perversions aren't merely remnants of unhappy childhoods. In fact the perpetrators have now become the targets as Commodore suffer the soggy wrath of the cynics who are only happy when pouring scorn on Commodore past and present

To be honest I've spent the odd weekend at this particular beauty spot, along with most Amiga enthusiasts. With the farcical and occasionally dubious marketing strategy the big C adopted during '92, even the most devoted Amiga fans must be at least a little disillusioned at the constant revisions to the range.

First the A500 vanished, then the A500Plus and the A600, all jockeying for position and finally dumped in favour of the A1200. Obviously pobody wants to impair the progress of the machine, however a slightly more open-handed approach to the punters wouldn't have

#### CUSTOMER LOVALTY

After all, leaving loyal cash-carrying Amiga fans with the feeling of being duped doesn't exactly instil confidence or customer loyalty - both key factors in halting the tide of Segas, Nintendos and game-playing PCs which, according to the pundits, will mean the inevitable demise of the Amiga

With the opposition in mind it is perhaps the ideal time to highlight why the new CD-ROM will prove the cynics wrong. Although without doubt the biggest bite Nintendo, both systems have one major problem As I'm sure you're aware, both jealously guard their

stranglehold on software development. If you're not in some way affiliated to either company there's no way to code software for their respective consoles. After all, if you're in the business of churning out hard-

ware at cost and then relying almost entirely for profit on subsequent software sales, why share your hard-earned profits with others?

Although great news for the corporate giants, what happens to the hordes of software developers left out of the Japanese duopoly?

The Amiga (and even the ST) markets - large and established - are the obvious haven. However, like the corporate stranglehold of the consoles, disk-based soft-

With many so-called Amiga fans seemingly determined to suffocate Commodore's latest creation at

birth, AC offers up a few home truths



# The world beating CD32

ware also has its problems - primarily the constant jolly rogering of the pirates. Thanks to piracy, a game need only reach 30,000 sales to become a big seller

With over 1.5 million Amigas in the UK that's a pretty graphic illustration of the problem. However the CD32 faces no piracy problem and as a consequence is a software developer's dream. It can outperform, outpace and undercut any console, and most important of all, it's accessible to anyone who wants to code for it.

Almost regardless of what happens elsewhere, it's the It can outperform,

outpace and undercut any console

appeal of the CD32 to the software houses which will ensure its success. An old adage states that "software maketh the machine" and if that machine beats the opposition, all the better.

All it takes to ensure success is one "must have" product. Having seen the CD32 and FMV in action I'm convinced it's only a matter of time before the prospect of 100 per cent piracy-free profit inspires a software house into producing a work of genius. As for the PC threat, I'm far from convinced there's as

much to worry about as many think. Admittedly a quick bash on a 486 33DX as it puts the latest flight sim through However the salesman will certainly avoid the little

things, like cost, ease of use, storage, add-ons and so on. For a start most decent PC games are only at their best on

In addition if you're even partially fond of sound, fancy a monitor and require a hard disk that's capable of holding more than a couple of games they'll be very little change out of £1,300 - assuming you've thrown in a CD-ROM.

After all that cash and the absolute misery associated with setting up any PC you'll be the proud owner of a shiny new machine based on 20-year-old technology that has just 640k of base memory

of active memory, more colours and superior sound. However that will mean you'll miss out on the idiosyncrasies of DOS, programming your mouse and running Windows - alias Workbench 1.2 - assuming you've got enough additional memory that is

Although AC has done its fair share of Commodore slapping in the past, the blow for the CD32 deserves to land squarely between the shoulder blades rather than across the chops.

> Paul Austin Associate Editor

# The AC team

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#### COVERDISK



Now you can design your own exciting objects for use within any Amos brogram using this bowerful object modeller



Using the CoverDisks

# Creative s well as the Amos 3D Object modelling

Modeller, we have included Amos on the disk. Due to their size, both have been archived. In order to matted disks. Boot from the CoverDisk and type in the command:

Execute Create

then follow the instructions that appear on When you boot from the disk labelled Object Modeller, a 3D demo is displayed to whet your appetite. To enter the object

Amos 3D uses the concept of shelves as places to store objects. Although you can't see them, there are 12 shelves. At the top

simple shapes known as primitives. Directly below these there are another five for you to store your own objects. Between these ten and the control panel

there are two more shelves which is where objects are manipulated and constructed. To get a feel for the screen layout, hold pointer around the screen. This will result in the shelves being displayed as boxes. To move an object between shelves, use

the left mouse button to select both a source object and a destination shelf then

Move the cube to the left-hand work area then click on the rotate button. In order to rotate the cube you must keep the mouse. Copy each of the five primitives in facilities.

Notice that only two of them are 3D objects. The flat ones are intentionally so and are useful for creating spaceships

# Amos 3D commands

Having constructed some objects you will be itching to incorporate them into your Amos programs. It is beyond the scope of this article to explain how to program in Amos and about the additional background information explaining 3D computer graphics.

However, for those readers who have already acquired and digested this information

# The display

...set the 3D system screen height to n raster lines Td SCREEN HEIGHT n... TA REDRAW clear the 3D display area with extra speed

#### **Invoking objects**

Td OBJECT n,name,x,y,z,A,B,C creates an object instance based on a previously loaded

n - object number name - object name x.u.z - world co-ordinates of the objects starting position .....remove object n

#### Loading and removing objects Td DIR folders. tells Amos 3D to look in folder\$ for object files

...remove any loaded objects tells Amos 3D to keep loaded objects in memory TH KEEP ON ...

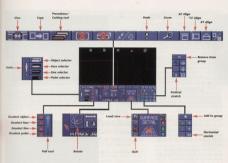
# Object movement commands

move object n to the absolute world co-ordinate Td MOVE n.x.v.z. Td MOVE REL n.dx,dy,dz more object n relative to its current position more object in forward by d VLUs

# Reading an objects position

xeturns the world x co-ordinate of object n returns the world a co-ordinate of object n returns the world z co-ordinate of object n =Td POSITION Z(n).

Td KILL n...



wings, walls or anything that needs to be of minimum depth. Take a closer look at them using the Magnify tool to zoom in. To return to the normal view, click on the Now copy the cube to a work space

and we will show you how to deform objects by stretching and squashing them. Click on the Plus button so that corner node markers are displayed at the corners of the cube. Now hold down the horizontal

stretching button and move the mouse to eiongate the cube into a rectangular box.

Care must be taken to ensure that an object is positioned perpendicular to the viewpoint. Otherwise the results of expect.

deforming an object may not be as you To see what we mean, rotate a cube so that three sides are clearly visible then use Having done that, rotate the object and you will see that it is no longer rectangular.

#### Pyramid The easiest way to alien an object with

the screen axes is to use the tools provided. It is possible to align an object with the XZ plane, YZ plane and XY plane. As an example we are going to align the copy this primitive to one of the work

ble, then click on the object face selector until the base is highlighted. Now click on the XZ-align tool with the left mouse button and the base will face upwards.

To make it face downwards, click on the button using the right mouse button. The YZ and XY align tools work in the same way but you might like to play around with them just to become familiar

with the way they orientate objects. Rather than distort a whole object, as described earlier, you may want to select one of its edges or corner points and pull

it away from the object, thereby stretching one area of the shape. If it is not already in a work area, copy the cube primitive into one then click on the object face selector. Click on the line selector to choose a line then use the pull

# CoverDisk Hotline

tool to move the chosen line in relation to the rest of the object. This tool varies in sensitivity alone its

length, the up arrow end being least sensitive. Moving a vertex, rather than an edge. is also achieved using the Pull tool.

The procedure is the same as with edges, except that the chosen line must have the point that you want to move as one of its endpoints. Having ensured this, click on the point selector to highlight using the Pull tool.

#### Complex Up to this point we have only been

working with simple primitive shapes Now we are going to take a look at joining objects to form more complex models. Copy the pyramid and cube primitives to separate work areas

of the cube sides using the object face selector. Click on the pyramid first, then the cube and finally on the Glue tool. A copy of the pyramid should now be appended to the cube, leaving the original The new shape will look a little bit strange because the object modeller does

not automatically calculate which faces will have to click on the Precedence/Culling tool. Just to the left of the surface detail

#### Changing the attitude of objects

Id ANGLE na,b,c	sets the angle of object n where a,b,c are the av
	made (respectively) with the world x,y,z axes
Td ANGLE REL n,dA,dB,dC	sets the angle of object n relative to its current pos
	where dA,dB,dC are the angles made (respective

## Reading an object's attitude

=Td ATTITUDE B(n)	returns the B angle of object n
=Td ATTITUDE C(n)	returns the C angle of object n

				String command				nand	15	
٨	E	X	n,string		applies	the	X	movement	COMMEN	

OVE X n,stringapplies the X movement command in string to object n	Converting bety
OVE Y n.stringapplies the Y movement command in string to object n	=Td SCREEN X(x,v,z)
OVE Z n.string	
NGLE A n,angle\$applies the A movement command in string to object n	=Td SCREEN Y(x,y,z)
NGLE B n,angle\$applies the B movement command in string to object n	
NGLE C n,angle\$applies the C movement command in string to object n	=Td WORLD X(n,x,y,z)

#### Bearing and range

	returns the A bearing of object n2 from object n1
rd BEARING B(n1,n2)	returns the B bearing of object n2 from object n1
I'd BEARING R(n1,n2)	returns the rawge of object n2 from object n1
Td BEARING A(n,x,y,z)	returns the A bearing of the world co-ordinate x,y from object n
CARPARING BOOK	returns the B bearing of the world co-ordinate x,y,
	from object n
rd BEARING R(n,x,y,z)	returns the range of the world co-ordinate x,y,z from
Td RANGE(n1,n2)	returns the distance between objects n1 and n2

# Converting between co-ordinate systems

=Td SCREEN X(x,y,z)return	s the Amos X co-ordinate of world co-ordinate
x,y,z	
=Td SCREEN Y(x,y,z)return	s the Amos Y co-ordinate of world co-ordinate
x,y,z	
=Td WORLD X(n,x,y,z)	point (x,y,z) expressed in local co-ordinates rel-

#### **COVERDISK**





panel is a column of buttons. You could be forgiven for thinking that the top one is the letter A but in fact it is a picture of a floopy disk.

Clicking on this button will reveal the load and save panel which shows the current path, the files contained therein and three buttons. The leftmost one is the load button, the middle is the save button



# Batdog

Requires: Workbench 1.3 or above

This has to be one of the best games ever submitted for the CoverDisk by one of our readers. As with all platformers, the object is to roam around screens collecting objects while avoiding

the bad guys.

In this case, there are two types of object, rings and green balls.

The balls are worth more and collecting them will result in access

The balls are worth more and collecting them will result in access to the pinball-influenced bonus levels.

Success in these will allow power-ups in the form of faster movement and the ability to jump higher. Ultimately there is an end of earne entardiate to beat in the form of a spaceshin.

Before starting a game there are a number of user-configurable options which are changed by moving the joystick to the left and right. The most useful is the number of lives, which may be increased to a maximum of seven. Anyone with an accelerator or



an A1200 will find the Game Speed option invaluable and should set it to 50 per cent. There are even facilities to alter the speed of gameplay in the bonus levels and to disable inertia.

while the big red X is used to indicate that you want to cancel the operation.

These operations can be applied to any

of the seven user shelves simply by selecting the desired shelf then loading or saving an object.

There are a considerable number of examples in the examples directory and, as an example of disk operations, we are going to load an object.

# Disk Operation First we must tell the program which shelf the object is to be loaded into. Click

on the leftmost work area then click on the disk operation button. Double click on the examples drawer to open it then use the scroll arrows to find the file called Amiga. Selecting it and clicking on the load

Selecting it and clicking on the load button will automatically take you back to the main control screen once the image has loaded.

If you want to save an image, follow

the same procedure but specify a name by typing, it in rather than selecting one from the list – otherwise you will overwrite an existing file. You may find it useful to store your objects on a separate disk, or on



your hard drive if you have one.

To do this you should click on the path requester, use the Delete key to erase the

existing path, and enter the disk name followed by a colon. Alternatively, you could just enter the logical name of the device. Sometimes when making models, the desired effect is to leave a small gap between blocks to further enhance the 3D effect. Imagine two parallel columns that are ioined by a cross member to form the letter H. If the cross member is a small distance away from the uprights, its ends will be visible when the object is rotated. To create this effect, we need to join the appropriate faces then move the blocks apart a little. In our next example, we will build this model and show you how to define and move croups of blocks.

Copy the cube into one of the work areas and use the stretching tools to turn it into a long box. Don't bother about mak-

# Amos 3D commands continued

- Tilles	egiiiiiaiias egi
	ative to object n and returns the world X co-ordinate
=Td WORLD Y(n,x,y,z)	
	tive to object n and returns the world Y co-ordinate
=Td WORLD Z(n,x,y,z)	takes a point (x,y,z) expressed in local co-ordinates rel- ative to object n and returns the world Z co-ordinate
Td VIEW X(n,x,y,z)	takes a point in world co-ordinates and converts it to the local x co-ordinate relative to object n
Td VIEW Y(n,x,y,z)	
	the local y co-ordinate relative to object n
Td VIEW Z(n,x,y,z)	takes a point in world co-ordinates and converts it to the local z co-ordinate relative to object n

#### 

n – object number zone – zone number .

x,y,z - position of the zone centre r - radius of sphere

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24	THEACE-

#### Pointing an object

Td FACE n1, n2 point object n1 at object n2

Checking an object's visibility

#### Shape animation

Td ANIM REL n,p,x,y,z,finish\_flag.....appties a change (delta) to point p of object n as specified by x,y,z. The finish flag indicates subcther any more ANIM REL commands follow this command. If there are, set this flag to 0, otherwise I

Td ANIM n.p.x.y.z.finish\_flag ......moves point number p in object n to x.y.z. The finish\_flag works in the same way as with the ANIM

ing the ends square - as long as the shape is elongated it doesn't really matter. We are eoing to make the letter H by joining the cross member to one upright, then

add the second upright. We will use the box that you have just made as the cross piece. To make the first upright, you could either repeat the procedure or copy it to the other work area

and use that as a starting point. Having done that, use the face selector to highlight one side of the upright and one end of the crosspiece. Click on the

unright followed by the crosspiece then on the Glue tool. To rectify the image, click on the Precedence/Culling tool. Before selecting the face on the other end of the crosspiece, we have to tell Amos 3D which block it is contained in. Click on the block selector gadget until

the crosspiece is coloured in, then use the face selector to select the exposed end Correct face

Because the Object Modeller joined a copy of the first upright, the original should still be in the other work shelf All that remains to complete the solid

by the partial H, glue them together and rectify the result with the Precedence tool. To make the crosspiece look as though

it is floating, we need to define it and one of the uprights as a group and move them. away from the second upright. Then define the crosspiece and the second upright as a group and move these away

Using the block selector, highlight the left upright then click on the Plus button. Now do the same for the cross member to add it to the group. Select the right unright and highlight the face that is in contact with the crosspiece, then use the Face Relative Normal tool.

This tool is the middle one in the group of buttons that resembles a hat stand. To render the object as a solid again, de-select the block and face selections by clicking on the red crosses. The model is almost complete now - all that remains is to repeat the above procedure for the other upright.

# Virus Checker

Author: John Veldthuis Requires: Workbench

1.3 or above Viruses are nasty self-replicating programs that affect every Amiga owner at one time or another. They are written by

KMI those viruses with Virus Checker

malicious people out to prove how clever they are by writing promachines and overwrite their valuable data with silly messages

Clearly, these so-called promorons with sad lives - let's face it. they must be if they have nothing better to do with their time!

writing viruses, they are trivial to code and just as easy to detect with handy utilities such as BootX and Protection

#### The safest way to avoid a virus attack is

to keep your disks write protected, by moving the protect tab so that a hole is visible, and only write enabling disks when you are going to save data.

Having said that, every system is vulnerable to viruses no matter how many precautions are taken. To further reduce the risk, we advise that a checker, such as the one on this month's CoverDisk, is used to check all incoming disks whether from friends, PD libraries or off the cover of your favourite Amiga magazine. Most



#### StickIt Author: Andy Dean

#### Requires: Workbench 2 or 3

Are you one of those people whose life is ruled by little yellow sticky pieces of paper with reminders scrawled on them? Even if they don't rule your life. there is no doubt that they are one of the most useful items of stationary ever

They aren't perfect though, as every once in a while they have an annoving tendency to drop off your monitor (or wherever you usually stick them). Sticklt has been designed as a com-

and allows you to stick notes anywhere on your Workbench screen. Each note appears in its own little window and can be edited by activating the window with the left mouse button, then pressing the right one. Apart from the edit window, there

are some simple editing options available from the menu bar. These allow you to cut, copy and paste text between notes and save changes to disk.

-Td ANIM POINT X(n,pn)return		į
	s the Y co-ordinate of animation point pn is	
	s the Z co-ordinate of animation point pn is	
Surface a	nimation	
Ed SLIDEACE named by 61 to n2 by 62 at coming	curfave with nonemeters	

name? - the name of the source object

- bI block number within nameI f1 - face number within b1
- n2 destination object number b2 - the block number within n2
- 12 the face number within b2 rt - rotation angle (range 0 to 3)
- Td SURFACE POINTS p0,p1,p2,p3 .....specifies that point numbers p0,..p3 are to be used as anchor points for all surface animation on flat blocks

Td SURFACE POINTS OFF .... .....clears currently defined anchor points Backgrounds

#### Td BACKGROUND source,x1,v1,width,height to x2,v2 [,plane] places a background behind 3D objects where:

- source screen number containing images x1,y1 - co-ordinates of the image in the source screen
- width width of the image height - height of the image

=Td OUIT ....

x2.u2 - screen co-ordinates of the image on the current Amos screen

#### Memory unload the 3D extensions and all objects to release

Td ADVANCED ... allows advanced programmers to access the 3D objects directly in memory returns the 3D data segment address if n is set to 0, otherwise returns the address of the object frame data structure for object n.

#### COVERDISK





# Ameko & Ameko AGA

Author: Carl Revell

Requires: Workbench 2 or 3 If the title of this Workhench back gives you a sense of drid gu, that's because we pub-

lished an earlier version on the May CoverDisk. This month we bring you not one but Ameko is a cat penned into his own window who tries to catch the mouse pointer.

When the pointer is to one side of the window, he scratches in desperation. If there is no mouse movement. Ameko quickly tires. wipes his whiskers, vawns then falls asleep.

Ameko AGA performs exactly the same as Ameko but includes support for Workhanch 3 When run from the CoverDisk he will appear in outline form but if the number of Workbench colours is set to 16. Ameko will be coloured in Many thanks to Carl for writing this version especially for Amion Computing.

Cotch that

# Faulty CoverDisk?

If you bought your copy from a newsagent and find that your CoverDisk is faulty, please return it to

TIB plc 11 Edward Street

reputable libraries and magazines check for viruses before distributing their disks but occasionally a new one slips through

Before booting any freshly acquired disk, it is well worth examining it before it

is used to boot your Amiga.

#### Bootblock

The vast majority of viruses are written to the bootblock and are only activated when the disk is used to boot an Amiga. It is therefore a good idea to use nonbootable disks for storing your data because if one becomes infected with a bootblock virus it is very unlikely result in any damage.

Another point worth mentioning is that commercial games usually have custom bootblocks as part of their copy protection, and this will cause most checkers to suspect a virus. When it comes to game

2 Always keep game disks write protected.

script to install Virus Checker on hard drives. In order to use it, boot from your hard drive then insert the Amiga Computing disk and click on the

up to date, the author needs you to send new viruses to him. If you suspect that you have found a new one, please do just that so that other Amiga owners may be protected from it.

Also, although this program is not shareware, we are sure the author would not refuse a donation if you find his pro-

disks there are two golden rules: 1. Never install a bootblock on a

commercial game disk.

Also included on the CoverDisk is a

InstallVC icon. Finally, in order to keep Virus Checker

ARoach **Author: Stefan Winterstein** 

Requires: Workbench 2 or 3 ARoach is one of the funniest Workbench hacks that we have ever seen! Clicking on the

program's icon results in ten animated cockroaches running around the screen. They move randomly, scurrying in search of somewhere to shelter When they find a window they will hide under it and stay there until it is moved or

resized. To stop them running around, close the ARoach window or, if you fancy a bit of fun, use the left mouse button to splatter

If you run the program from the icon, it may not be apparent that the cockroaches are present because the disk and shell windows fill the entire screen. To see them, therefore, you will have to reduce their size

> Use the mouse ter to splatter



## Think you can do better?

Want to be famous? We are always on the look-out for quality Amiga programs for the CoverDisk. If you think you have written something good enough for others to share and

The Aming Computing CoverDisk is used by thousands of Amina owners every month in places all over the world from New Zealand to the USA, so if your submission finds its way Please make sure that you list ALL library and other files necessary for the program to

work. Feel free to design your own icons for programs that run from Workbench, but please If you ensure your program is as compatible as possible with a wide variety of Amigas, it

whether they be games, utilities or whatever We are prepared to pay our current rates for original work which has not been distributed

in any other way and which has not been put in the public domain. If you wish your program to be released as shareware or freeware we will be happy to publish it, but would, of course, be happier if we had been given it first!

Your submission MUST be accompanied by the submissions form, a copy of it, or a signed declaration to the same effect. Please supply your full name, address and phone number. Unfortunately we cannot undertake to return disks sent to us as the volume of submissions makes this an impractical exercise.

Post your submissions WITH A COPY OF THIS FORM to: Colin Yarnall, Amiga Computing, CoverDisk Submissions, Europa House, Adlington Park, Macclesfield SK10 4NP.

Name			Age
Address			
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			Submission size
Type of program:	Game	Utility	Other

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by using the resize gadget.

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I understand that if my submission is bought by Amiga Computing I will be paid the current applicable rate. I know what copyright means and I will be responsible for any possible

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# The Amiga Computing CoverDisk is designed to be as simple to use as possible. Follow these instructions and you'll be up and running in no time!

New readers may have difficulties using our CoverDisk, so we have included this page to help you out. Below we explain how to copy

when get your CoverDisk is make a backup copy, then put the original CoverDisk away for safe keeping. files from one disk to another, how As a rule you should also do this with the majority of your software to copy the entire CoverDisk and how to de-archive programs. None collection



# How to make a backup

To copy the entire CoverDisk, load up your Workbench disk, then either click once on the CoverDisk icon and select Duplicate, or select Copy from the Workbench menu, or open CU/Shell and type

#### DISKCOPY FROM DED: TO DED:

When prompted, put your CoverDisk (the source disk) in df0: and be ready to replace it with your blank disk (the destination disk). Follow the Amiga's on-screen prompts until the disk copy is completed. Now put the original away in a safe place and use



De-archiving Occasionally we have so many programs to fit onto the CowerDisk that we have to archive them. Archiving is where we take the entire contents of a disk and compress them into one file which is much smaller, giving us space to fit more programs onto the disk

Dearchiving programs which are on the CoverDisk is a very simple task. If a program has been archived then you will need a blank disk to dearchive it onto.

Say we have archived a program called FRED. You simply double click on FRED's icon, and will be asked if you have a blank disk ready to dearchive to. Type "y"

or "n" accordingly. Your computer will then copy the archived file into its memory and ask you to insert your blank disk. It will proceed to format the disk, and will then de-crunch the archived file onto your blank disk

Once this has been done you can simply reboot your machine with the disk which contains the dearchived program on it and then use the program as instructed in the CoverDisk pages.

Note that if you have a Workbench 2 or upward machine you must boot with the CoverDisk writeenabled to perform the dearchiving process.

# Copying individual files

You might at some point want to copy a single program from a CoverDisk to your compilation, Workbench disk or even your hard drive.

To do this you'll need the COPY command. As most CoverDisk programs are stashed away in their own directories, the quickest way to copy a program is to copy the whole directory at once. Use the command:

## COPY (directory) TO (newdisk) ALL

where (directory) is the full pathname of the directory you wish to copy, and {newdisk} is the name of the disk and directory into which it will be copied. For example, if you wanted to copy a utility called

FRED from CoverDisk 27's Utilities drawer to a directory called FRED on your Workbench disk, you'd type:

#### COPY COMERDISK27:UTILITIES/FRED TO WORKBENCH1.3/FRED ALL

Alternatively, you can click once on the FRED directory icon and drag it across to the new disk's window. This has the advantage of creating a new directory for you and copying the icon as well. Once you have moved a particular program to where

you require it you could experience some problems running the program. This is sometimes caused by the program not being able to find files which it needs to run. A good example is the text files on the CoverDisk.

These have been crunched using PowerPacker, so when you try to copy them to another disk and then try to read them you can't unless you have also copied the Powerpacker library into your LIBS drawer



So if you have copied a program from the CoverDisk to your Work disk or hard drive make sure you also copy any other files the program requires, ie fonts, libraries, device drivers and Ccommands.



# Workbench 3

If you have a Workbench 3 machine, don't worry - most if not all of the programs on the CoverDisk will work on your machines.

If the program is specifically designed to work with Workbench 3 then you may have to copy the program to your hard drive or Workbench disk using the process described earlier on this page.

# **Amazing AMOS**



# **AMOS Professional Compiler**

Simple-to-use AMOS Pro Compiler gives your creations a kickstart, it compiles in seconds and can equash them by up to 80%. This is the updated and considerably improved version of the original AMOS Compiler.

AMOS Professional Compiler includes:

- 200 more commands than the original AMOS Compiler
- Update to the latest version of AMOS

  Professional

Comprehensive user guide, plus technical support back-up

Among many superb features. AMOS Professional can help you to comple programs using the intuitive user interface and compile Easy AMOS, AMOS and AMOS Professional programs using the stand-alone compiler from the Workbench, It can also help you to write programs incorporating many calculations which can run up to five times feater. On top of all this you can use a secolal AMOS interface to care the program special AMOS interface to compile if fire.

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Easy AMOS is packed with ready-to-run, carefully explained programs. You'll quickly understand how they work, and then use the same ideas in your own programs.

This brilliant package also shows how to create entertaining programs in next to no time – and it includes three games entirely created using Easy AMOS.





# **AMOS Professional**

All programs written using earlier versions of AMOS and Easy AMOS can be loaded into the vastly enhanced AMOS Professional. This latest package includes more than 200 new commands, taking the total up to well over 700. AMOS Pro is essential for the more experienced programmer, and includes a 650 page manual to get you started.

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position – and another click takes you to a thoroughly documented working example featuring that command.

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# offers..

# Mastering Amiga AMOS

This superbly written guide is suitable for anyone using AMOS, Easy AMOS or AMOS Professional. If you are a novice programmer or looking for the next step after BASIC then AMOS and this step-by-ste for you. Phil South provides a fascinating introduction, looking at all the main features, with plenty of example code for experimentation. You will find Mastering Amiga AMOS a handy reference and source of program-

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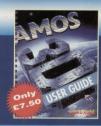
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ith the Amiga moving inexorably towards a 32-bit architecture across the entire range, power applications are now becoming accessible to all. In the past 68000 machines meant complex modelling was strictly the domain of power users - or the very patient. Now that's all changing and with careful modelling and intelligent scene design even a basic A1200 is capable of respectable

With the plethora of paint packages and assorted art-oriented programs already flooding the market, what's the big appeal of software which can sometimes take hours and even days to generate such results?

In short, the answer is total creative freedom and the ability to control every aspect of the image or animation you design. On a more esoteric level, raytracing provides the tantalising first look at the virtual world which in time will become the

new frontier of human experience. If you can forgive the pseudo-intellectual ramblings it's true there's definitely something vaguely magical about generating

Any conventional artist usually has both the imagination and the physical skill

This obviously isn't a problem for those who have an abundance of both - alas that's where most of us encounter the aboss which lies between the mind of an artistic athlete and the physical skill of a couch potato.

Fortunately, when it comes to raytrac-

ing, the software usually takes care of the physical skill by drawing, colouring and shading your creations while the user need only supply the imagination.

However inspiration isn't the only thing needed to create a great image. For a start there's the sometimes painful process of mastering three dimensions - not an easy task, especially when you're forced to confront the problem through a strictly 2D

A perfect illustration of the clash between a 2D interface and a 3D model is the mouse. Although ideal for navigating the 2D world of a paint package, the extra dimension essential to raytracing can really highlights its limitations. By nature a mouse is strictly a 2D animal, perfectly happy to slide back and fourth or

left to right. But lift it off the mat and it's game over. As a result, one of the three dimensions always alludes us, hence the need for instant access to all three. In certain cases this means the software will provide a tri-view with each window

looking directly along its own dimension, while others offer a single window - sometimes in the form of a perspective - which can toggle between the various dimensions via hoffraus

#### **AWARENESS**

In fact, awareness of the X,Y and Z is essential to almost every aspect of 3D modelling. Aside from simply building models, creating realism often necessitates the use of brushmaps, textures and so on, all of which require accurate placement - again, spacial awareness is essential in order to place the element you want exactly where it's required.

Assuming you've mastered the necessary modelling and mapping skills, the artistic battle continues. Aside from imagination and modelling talent you'll also need to double-up as a lighting engineer as well as taking to the director's chair, placing objects, deciding camera positions, applying your lighting talents and specifying the movement or transformation of every element within the

Although it's true that the physical skill has been taken on by the raytracer, it's more than made up for by additional mental effort on the part of the user

If you're planning to attempt raytracing, don't make the assumption that the software will in some way do all the hard work on your behalf. Like any artform, mastering the discipline is a labour of love which takes just as long as any other

to perfect. With the huge array of renders and raytracers flooding the market picking the right package has become increasingly difficult. A factor that's been compounded by the

degree of excellence inherent within all of the recent releases In a nutshell the choice boils down to a difference between ease of use, realism and animating potential. Obviously there are other factors such as speed and flexibility but these key factors invariably tend to sway the average buying

Paul Austin provides the ultimate buyers' guide to all things 3D

# 076

# **Imagine2**

nity to use every package on the market which I suppose makes my allegiance an

editors each handline a specific aspect of

For the newcomer this can be a rather lying logic is revealed, thereby making the

However it must be said that Imagine2

which is the program's fairly poor anti In addition, the accompanying manual

in a narrative rather than informative style cratic package even more daunting.

backs Imagine2 offers a degree of gram which is at least three times



A classic Impine image enhanced with the help of ESSENCE





In a nutshell, Imagine2 is probably best described as the ultimate enthusiast's

package, capable of startling animation and photo-realistic imitation of anything However be warned, there's a rather

steep learning curve that demands dedicavide award-winning results

# Caligari 24

renderer, and not a raytracer. This simply means that objects will reflect the sky and the ground but not other objects in the scene. However Caligari does offer an can emulate rather than replicate the

> In practice, the end result is that real world emulation doesn't match up to the others - but to be fair that isn't what Caligari is intended

In short, Caligari is the ultimate corporate Thanks to the program's relatively basic mapping and rendering options, it will never match up when it comes to clever images. However that's pay for the best modelling

and animation environment on the market. If you're purely interesting in graphics that will animate fect combination of ease of use and power.

The actually modelling process is by far the most intuitive



potential and its ani even more impressive

with a truly excellent working environment combined with a large collection of tools, most notable of which is freeform organic shapes to be extruded from basic

As for animation, the package is again unsurpassed when it comes to ease of use. Unlike most of the opposition, Caligari allows very easy construction of compley

# Real3D Classic

Formerly known as Real 3D Turbo - prior to the release of Real3D v2 - Real3D Classic was the main contender against the onslaught of Imagine2. Being a convert from Real3D to Imagine, I can see the relative benefits of both systems

Although each is employed by professionals with equal relish I'd say that Imagine would be more to the taste of the purist who wants believability and doesn't mind investing time and effort to get it, while Real3D Classic provides a somewhat easier method of producing



Real 3D version 2 at it 8-spline best comparison Real Classic on stW areduc incredibly criss very high quality corporate logo material, which although excellent can lack the subtlety of a similar Imagine image.

The primary cause of this slightly artificial look is Real's dependence on primitives, a feature which tends to lend to a slightly logo-esque look to the final image or anim - a factor which isn't helped by

which don't allow the multiple maps of Animation is again slightly lacking in comparison to Imagine, primarily due to the added flexibility offered by the Cycle

editor within Imagine. However it must be stressed that Real comes to animation and when this is combined with the best anti-aliasing on the market, the program's appeal for business applications is pretty hard to ignore.

# Aladdin 4D

Although very respectable as an allrounder it must be said Aladdin doesn't 6255 - a figure which is roughly double that of both Imagine2 and Real 3D Classic.

In addition to the problem of finance, modelling is fairly basic in comparison to its counterparts with the most damning freeform editing - an option offered by all its counterparts.

On the animation side it's pretty much the same story with good but not spectactouches offered by Caligari and to a lesser extent Real and Imagine. Having said that, Aladdin isn't without

strong points, the most notable being the generation of gases - a feature which can produce very impressive static and animated images. However, as seems to be case throughout Aladdin there is a compromise - which in the case of gases is extremely slow rendering Continuing in an animated vein it.

must be said that mapping isn't one of the program's faults thanks to an unlimited number of textures which can be morphed and animated as and when required - a feature which can only be matched by Real3D v2 All in all, the bottom line points to a

pretty good package which unfortunately suffers badly when it comes to value for money when compared to the majority of the opposition.

# Real3D v2 Although the package is easily the most

powerful program around, it's very much an acquired taste, which beginners especially may not find to their liking.

Even with the imminent release of Imagine3, it's almost certain that Real3D v2 will remain the most technically advanced package on the market. However its complexity is something

which haunts the new Real. Unless you're very well versed in the finer points of rayknowledge of programming and higher mathematics, Real3D v2 can be very difficult to handle.

To be fair, the quality of output and overall potential of the program is spectacular with some truly amazing animation tools which can make solid objects swim like fish or bowling pins scatter in accordance with the laws of physics.

If you have the £400 asking price, modneeded to master the package, it simply out-guns the opposition. The question is: Do you really need that kind of power?

If so, will the program let you apply it?

# Support software

Although all of the programs listed provide various utilities for converting 2D images, importing fonts, playing animations and so on there's a booming business in 3D support. As mentioned earlier, actually modelling objects can be a tricky and time-consuming

Impac from Real 3D

However with a huge number of raytracing enthusiasts worldwide all beavering away. there are a lot of models already out there. If you have access to a modern, the door to a world of free-ish objects is wide open.

Most bulletin boards have dedicated 3D file areas full of hints and tips and more important large object collections, all yours for the price of a phone call and perhaps in exchange for uploading some of your own creations, in order to achieve the necessary upload ratio. If you don't have access to a modern it's worth a close look through the PD libraries as

a few companies specialise in 3D modelling and offer a huge repertoire of objects to suit a wide variety of raytracers and modellers.

#### Pixel 3D Pro

In some cases you may come across objects that will be in your raytracer's proprietary format. However, if not some form of conversion is essential. In such circumstances, Pixel 3D Pro is the ideal tool, offering a conversion process enabling the vast majority of programs to share their creations.

However, be warned - Pixel Pro isn't without its faults and will quite regularly overlook

vital parts of an object during a file conversion leaving gaping holes which need subse-In addition to object conversion, the program will also convert 2D images into 3D - with

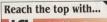
an extrusion depth and style of your choice. Admittedly this may seem at odds with the argument that 2D drawing skills aren't required for raytracing, but sometimes 2D graphics can make all the difference to a 3D image. A perfect example is a

poster on a virtual wall or perhaps a label around a can of beans - without the assistance of brushmaps, realistic results would be almost impossible within most packages. In the case of Pixel 3D

Pro, 2D drawing skills or perhaps scans could be used to make a very com-







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sticky mitts of the eager masses. Apparently release has been delayed because the authors were hard at work on a PC version which is now shipping. With the PC obstacle community and the property of the prop

sent. This annoying limitation has now be replaced
to a real-time camera view, which can even trans-

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**Hard facts** 

During the intro, the move towards 32-hit

In fact, although a vast improvement

# **Imagine3**

#### **IMPROVEMENTS**

be applied throughout the light/movement.

The available modelling tools have also seen some additions in the form of deformations such as thist, apper, bend and shear – all old news in relation to Real3D, but nevertheless a welcome addition to

of modelling tools.

On the output side there have been some fairly dramatic improvements, most important of which has to be much improved anti-aliasing – an element of the program that's been the bane of earlier

as the interlect is contented if appears most things will remain furly similar to its predecessors with the exception of a new row of user buttons along the bottom each estient window. The Forms Editor has also seen some much-needed attention in the form of magnetism, plus there's some brand new post production tools, support for sound, filed rendering, a particle animation system. Alpha channel support, depth of field plus an infinite number of maps per object.



# Support software

plex modelling job much easier. For example to model the British Isles would be painful to say the least using polygons or Boolean operations. However thanks to Pixel 3D Pro. the shape could be drawn or more likely scanned, converted into a suitable format and extruded automatically, complete with the colouring of your choice. A user-defined bevel could even be applied on the edges to produce that glossy, corporate look. It's certainly true that most

raytracers offer at least some offer from PixelProXL. A perfect example is the ability to interrogate the colour information of a 2D IFF and then automatically scale the extrusion according to the relative brightness of the shapes within the image. A good example is a model

does lack one element for successful rav-

As standard the A1200 doesn't come

In addition, storage can be almost as

created by our editor Stevie

Kennedy, who required a myriad of buttons as part of a control panel. In any raytracer creating, sizing, copying and placing each individual element would have taken an age. Thanks to PixelPro the whole process was complete in a matter of minutes, requiring only the most rudimentary drawing skills.

#### **Alternative Textures**

Although objects are the most obvious commodity when it comes to raytracing, backdrops or brushmaps are also very useful to add that touch or realism to your renderings. At the forefront of texture business come those loveable chaps at Alternative Image with their collection of high quality, 24-bit scans featuring old favourites like marble, wood, sky and For Real users the collection also has the added bonus of some excellent tutorial files

- with graphic examples - showing how to get the very best from Real3D Classic, including a guide to creating the mysterious Real3D water effect.

RaceTrace Although it's a fairly elderly package, Alternative Image have limited stocks of a more

#### GRAPHICS

## Support software

basic variation on the PixelPro theme entitled RaceTrace. Although a tad rough and ready, the parkage offers similar 2 to 3D IFF conversion with the option to extrude according to colour - just like PixelPro

However it must be stressed RaceTrace requires more effort on the part of the user with strictly lo-res IFFs often requiring much more editing to avoid the dreaded jaggies. However, during the long editing process you can always console yourself with the thought of all the money you've saved over buying Pixel Pro - and just like its pricev but powerful counterpart, RaceTrace supports all the major packages and 3D file formats.

#### **PowerFonts**

Another impressive 2 to 3D converter entitled PowerFonts offers an alternative to the pripery talents of Pixel Pro, but as the name suggest the package is restricted to font

Like 2D extrusion, most modellers support some form of font conversion, however very few do a sufficiently accurate job for commercial use.

Powerfonts, however, provides arguably the best font extrusion, beveiling and italicising options available thanks to a no-nonsense interface that does the job without the whistles and bells offered by other programs.

Although I've only had access to the Real3D Classic version, support is planned for the majority of raytracers and should be available by the time you read this article.

#### **Texture City**

If the Alternative textures isn't enough, the Texture City collection offers an even wider range of textures with literally hundreds of images all in 736 x 580 severe overscan The collection is available on disk in various sets with approximately 20 images per

set. Each set is shipped as 24-bit Jpegs with a Jpeg-to-IFF decompresser included. In addition a Browser allows miniature previews of the entire collection. Although rather pricey, the images are excellent and more importantly build into a varied library encompassing animal, earth, FX, rock, marble, granite, metal, scenic, textiles and wood. If you're working commercially Texture City could prove invaluable.

#### Essence 1 and 2

Without doubt the best third-party supnort has to be that for Imagine, with arguably the most exciting add-on being the Essence collection of mathematical textures. Unlike brushmaps the Essence textures can be edited to produce variations on a theme

Better still, thanks to their mathematical basis they never pixelise, no matter how close you go in on the image. In

addition there's a variety of styles including both bump and altitude maps - again all completely user definable. In short, if you're serious about Imagine, Essence - in both its forms - is an absolute must.

#### CycleMan

One of the great mysteries of Imagine is its rather idiosyncratic Cycle Editor. Although immensely powerful when mastered, it can be very daunting for the beginner.

Because cycle objects aren't essential for basic animation, the whole area of creating cycle objects does tend to be overlooked. As a consequence, CycleMan offers not only

a complete human model but also an insight into the finer points of creating your own Although a bit pricey, it does offer a useful pool of body parts as well as complete

running and walking cycles which can be dropped directly into your scene.

#### **Understanding Imagine 2**

Alongside Essence in the essential Imagine add-on list comes Steven Worley's excellent Understanding Imagine 2 reference manual. One of the biggest hurdles for any Imagine newcomer is the rather confusing manual, hence the release of Steven Worley's master-

Not only does it describe ever feature of the program but also offers hints, tips and design strategies which allow you to get the very best from your investment. If you've got Imagine, get a copy of Understanding Imagine 2 before anything else - it will save you months of frustration

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Computers

MODEMS

# Hanging on the telephone

So, you want to move into the 21st Century and be a part of the information age? Let comms guru Phil South give you a line on the best in Amiga comms hardware

hoosing a modern is tricky at best and downsight hazardous at worst. It's not so much which ones you should be looking at. but a case of how tills to have many facilities you need no more accurately when you can get a saw with Sure a 2,400 baud modern is good but do you need more speed? Do you need saw speed? Do you need saw send that the you have not send that the young the same send to be the bead?

But being very choosy myself and suffering from herious phone bills, I decided to look at at the new sexy moderns which are on sale for your Amiga right now. In the Amiga market there are surprisingly few models available. Everyone seems to have disched the small 2,400 moderns, and even the Supra range is now practically if

dub.

All the acts we booked at had the Supras, some had US Pobotics, and feerer still had the Pobotics had been a process to the structure of the Pobotic had been and the process to the should be a A modern is a modern, and like so many forchologies which have bocomes on we developed, very modern pretty much functions the same and as reliably as another. So developed, very modern pretty much functions the same and as reliably as another. So the same and the same and the process that is not been a forced to the same and the same species, but the like of you don't Some arm one opposites, but the like of you don't Some arm one opposites, but the like of you don't some a good ham of speed. Let's see what

#### Supra 14,400 Supra Corp - £259.99

Although the Supra range are the best, this baby does need more than a little bit of tinkering around before it'll sit up

straight and beg for its dinner.

Unlike almost every other Supramodem I've ever seen, this one doesn't run right out of the box. It plays silly buggers until you get all the settings right.
But once you do get it right it's a star

performer. I particularly like the clarity of the speaker in it. You wouldn't really think that modems would be sonically enthralling, would you, but you'd be surprised what a great difference it makes to half to be or wardly what's going on

when you dial and connect to a BBS.

Sometimes you can diagnose a problem just by the sound of the tones, when

# US Robotics Sportster

US Robotics - £339.99

This is a classy and inexpensive top of the range modern. US Robotics also make some of the biggest and most expensive machines in the form of the Courier HST standard jobbles.

The Scordster wax I assume, made to fit the demand for a small, fast and

colone in a Seniative process.

The Sportster was, I assume, made to fit the demand for a small, fast and the Sportster was, I assume, made to fit the demand for a small, fast and the sports of a fast as doos to those ideas as US Robotics could muster. I have to admit they've done fine job. OK the case locks at a fittle hid offset but that reto lock may be your leasing. It brings to mind an Atan' VCS games but that reto lock may be your leasing. It brings to mind an Atan' VCS games console of the list 1970s, about a quarter the size, and white instead of fake wood. But the same locks is there.

is suppose the looks make it more distinctive, but the looks are nothing compared to the performance. Right out of the box, no twiddling with settings, a quick ATZ and you're there. The unit worked with NComm, Nicola, JRComm, and even ACCESSI didn't lum it's nose up, and I've always had problems of one sort

or another with that program.

Having a modem bearing the US Robotics name is a bit like having a car with
Ferrari written on the back. The name means top of the range, and if you buy this

loud and clear Also a very nice little matrix of LEDs

nical bits and bobs, like if you're connected at all. In standby mode the display says OK Cool or what?

This is the top of the heap, the king of the pile, the cock of the walk, the doe's... (that's enough superlatives - Ed) Ahem. money can buy.

V32bis 14 400bps modem V42bis 14,400 fax LED matrix display

**Bating: 10/10** Supra Fax Plus

Supra Corp - £139.99

Although not as fast and sexy as the 14,400 jobby, this is still a very serviceable modem facilities then this might be a the same as the 14,000bps model. machine, but it has the fax added on, hence the name.

The performance is what you'd expect from a Supra modem, being something of Amiga. Nice loud monitor speaker, and especially using GPFax software.

raFAY Modi V22bis 2,400bps modem

V29 9.600bps fax Rating: 7/10 Pace Linnet 32 Pace - £339.58

A large box by modern modem stananswering machine. It's big, it's expen-

It's a V32 9,600bps machine and has formance is good, if a little

and clunky, this

# Jargon buster

receiving a file from host computer or BBS via modem. The file is stored on your computer.

a modern which also has fax capability, enabling it usually to send and receive faxes to any ordinary fax

sending a file to a host computer or BBS.

a 14,000 modem will be called 32bis, which is the appropriate CCITT code.

a 14,000 modem will be called 42bis, which is the appropriate CCITT code.

> like normal answering machines, only voicemail systems out messages for each person on the system in a separate place, so it's like a BBS email for voice messages

> > As this is meant for the PC market, the unit comes with PC fax software. If I had to choose between this and the US Robotics I know which I'd have. After the Sportster this seems a little slow, but if you're used to a 2,400 then this'll seem

#### Pace Microlin Pocket Pace - £186.83

From one extreme to another. This Pace modem is actually made for use with laptops (and PC laptops at that) and this is

reflected in its minuscule size Although it works fine with programs like IRComm, it's fussy about the pro-

It's battery powered so if you want you can just slip it in your pocket and wander

device that's what you've got. It's more expensive sure, but you gets what you pays for. This is the one they're going to have to send the boys round for. I may superglue it to V32bis 14,400 modem V42bis 14,400 fax retro look Rating: 10/10

out of place in an office. where you need something a little where price might not be a problem) but Big V32 modem only Rating: 6/10

off to another location and use it with another Amiga. It even comes with a The machine comes with fax software

course, but you can run it using GPFax or another generic Amiga Fax proggy. There is also a V32bis version of this unit which runs out at £410.08. This has to be the smallest fax modem ever made.

## Hardware verdict

14.400 jobs.

Both offer the kind of military standard into the next decade, both understand fax like a native, and both are nice and cheap at the moment. The Sportster has a nice cheesy 60s or 70s look to it, which may in your taste (I like it myself). If you want

Both are equally small and user right away straight out of the box without V22hie 2 400hne modem

V29 9,600 fax Rating: 7/10 tings. Get the best price on either of these machines and they'll pay for themselves in a couple of months, no trouble.

# Contact

Park Court, Stanningly Road, Leeds

Tel: (0386) 765500

# Comms software

#### NComm

Shareware - £30

7Modem up and downloading omtocols, and interface

out of the box. Some may need a little judicious twiddling with the Modern Setup menu, by

#### **GPFax** Shareware - 635 First Computer - £39.99

You might also like to try the demo version

Nicola

have to use NComm and go in by hand. (See this month's Comms column for an

#### **GVPPhonePak VFX** GVP - £349

A bit of an oddity, this one. The PhonePak isn't in fact a modern, but is a con voicemail, answering machine and fax machine system for your Amiga. It's basically a card which fits into a Zorro slot

and runs custom software to make your Amiga into a powerful communications system.

It's a fax, it's an answering machine, but it can also do that neat trick where it answers the phone and it says "If you want to send a fax press 5. if you want to talk to Phil press 6..." etc. OK, so you have to have your Amiga on all the time to catch your messages but the messages are in IFF format so you can save them to disk and keep them if you like, which is something you can't really do without a sampler The quality from the phone is pretty good

too, and you can also listen along to any messages as they come in, cutting in if you wish.

It's magical and it's only £350. It's a fax, it's an answering machine. It's a voice mailsustem, and it's a fax switch, which added together makes about £700-800.

If you intended to get a fax modern for a small business and faxing is all you really wanted to do, then you might like to look at this instead, as the extra capabilities (and for the same price as many fax machines) make it very attractive and quite unique among Amiga comms products



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#### **MUSIC**

espite the presence of a lot of competition (mostly from the Atari ST) the Amiga has continto make inroads into the now firmly established area of computer-based music

There is already a growing band of pro-Amiga users in general also seem to be taking more interest in sequencing

work much like sophisticated tape mation, generated either by the Amiga's own alpha-numeric keyboard or by an let you modify, combine and play back the stored material in virtually any way

Although nowadays there are several heavyweight, and needless to say expensive, Amiga sequencers suitable for professional and other serious use, there are which are perfectly adequate for most

sequencing requirements. There are, incidentally, some sequencing areas where you can even get suitable

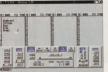
#### TWO TYPES

The term sequencing doesn't exactly cover a multitude of sins but there are available on the Amiga. Because the two types are so funda-

mentally different (in both use and purpose) it's worth spelling out the differences in detail... Tracker-style sequencers are programs

used to compose and create sound sam-Amiga's sound chips. Most musicians would not, in the strict

sense regard these programs as



Dr T's KCS is a pro quality workhors encer and very highly thought of

sequencers at all but since the Amiga sequencer" for these types of programs who are we to argue?

Tracking is actually one of the oldest because right from the start programmers needed a fast, convenient way of creating 2 1 15: 4:192 37 11 C1 Right Hand 11 14 15

Thir Change Bindoos Locast Genties

around crude lists showing the times and One of the earliest utilities to appear was called SoundTracker and within a

Over the years tracker programs have

# Computer

music for games and demos.

for creating music sequences.

few years various other "tracker"-type

programmers' tools, these programs

Song descriptions tended to be built

With a minimum of equipment, you can turn your Amiga into a 16-track recording studio! Paul Overaa makes some tuneful inroads into the world of sequencing

# O and A on the sequencing scene

How long can a Midi lead be?

The Midi standard itself says 15 metres, but a lot depends on the amount, and the peak densities, of the Midi traffic flowing through it.

In some cases, leads of twice the maximum suggested length have been found to work. To see how far things can be pushed with a particular Midi set-up you just have to

Why is conventional Midi limited to only 16

It's because the Midi status byte, the part of the Midi message which contains the channel number, has only four binary bits available to hold the channel number information.

The limitation stems from the fact that four bits of a binary number can only represent 16 different values.

I'm stuck with a synthesizer which seems to have a lot of weak sounding preset voices. Is there a way of making it sound better? Doubling - where you take a track, duplicate it, and then change the Midi channel of the second track so that two different voices play essentially the same notes - can usually help. Shifting the start time of one of the pairs of tracks should further improve things.

What's the difference between pre-record and post-What's the otherers are record sequencer filtering?

Pre-record filters remove selected Midi messages before storing them as sequencer track events, so by the time a sequence has been recorded those mes-

sages are lost Post-record filters produce their effects by limiting which parts of the stored data are used. The big difference of course is that these "output only" filters do not prevent the original Midi messages being stored as track data. If, at a later date, the filter option is cancelled, any messages previously being suppressed by the filter would appear again.

I play in a semi-pro band and am tempted to use an Amiga sequencer at live gigs. What sequencer package would be most suitable and what sort of snags are likely to occur in practice?

I'd recommend Dr T's KCS package for live work

firstly because it is robust and secondly because it has some facilities that are especially useful for live gigging. There's a special song mode that allows you to work with sets of up to 16 songs and this enables typical club

song sets to be created that can be loaded in one go. As far as snags with KCS goes there shouldn't be any it really is an excellent package. You will get the odd Midirelated problem though (incorrect wiring up of Midi leads when rushing, the occasional faulty lead and so on) and should therefore carry spare Midi leads - and extra copies

Almost all Midi problems you'll encounter will be trivial and easily solved if you don't panic!

of your program and song data disks. What are Midi messages?

of that message are called its data bytes.

Midi sends its message information using 8-bit units which the computer world call bytes. With Midthese bytes represent sets of standardised numbers whose meaning has been laid down by the Midl

standard. Some Midi messages consist of more than one byte and in this case the first byte, known as the status byte. identifies the general message class. The remaining bytes both more powerful and more

for a musician than bashing away on the and provide limited Midi output

#### SEQUENCERS Now we come to the crunch Tracker

programs, even those with some Midi they are not (and should not be confused

extra bonus for users who have some

has

and

fidi

Music X is good value now that the price has dropped

of objectives

emphasis is on recording from - and playing back to - Midi equipment

tem. Midi messages get transmitted knob or press a note on a keyboard - and these streams of messages get transmitted at the Midi Out terminal.

the system it is able to read these messages and record what is going on as you sages - which are essentially streams of

Irrespective of price, most Midi

## MULTITRACK

A great many sequencers adopt a tape recorder-style approach to Midi recordanalogy is a good one because, conceptuearlier are very much like multitrack tape recorders - the main difference is that they record digital data rather than audio

Many sequencer packages make the like conventional tape recorders.

The following listings cover the best, the cheapest, or have some other

Please use our quoted prices only as a mate prices are changing almost daily

the most of it - after all one day the recession might end!

# Midi hardware

Getting into real Midi sequencing is more expensive than basic trackerstyle sequencing with Owerty keyboard data entry because the Midi connection is essential, rather than optional.

In short, as well as the sequencing software itself you'll need a keyboard synthesizer and a Midi interface.

A low-end, budget-priced synth is likely to cost between £100 and £200. but if you hunt through the music magazine ads you can sometimes find second-hand bargains costing much less than this Even the cheapest of modern synths

are quite easy to learn to use and, more to the point, most actually sound surprisingly good. At these prices you won't get things like a touch sensitive keyboard or any

of the other 'bells & whistles' found on more expensive synths but this is unlikely to matter unless you are a professional keyboard player. One thing that is quite important,

and it's worth spending a bit more to ensure you get it is that the synthesizer you get is both polyphonic. which means capable of playing a number of different notes at the same time, and "multi-timbral" - able to play more than one voice (sound) at the

channels.

ARRANGEMENTS The reason for this is that sono arrangements are normally built up by recording all the various instruments needed individually using different sequencer tracks and different Midi

When you play back your recorded song data you'll normally want to hear all the recorded instruments playing together and in order to do this the synthesizer itself must be able to generate all of the required voices at the same time

Connecting up a simple Midi system essentially means linking together a

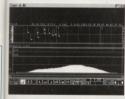
sequencer, synthesizer, and a Midi interface, and it couldn't be easier. Firstly, connect the Midi interface to the Amiga's serial port connector. Then take one Midi lead from the Midi-Out of

the synthesizer to the Midi-In of the Midi interface and connect a second cable from the Midi-Out of the Midi interface to the Midi-In terminal of the synthesizer Switch the Midi equipment and your

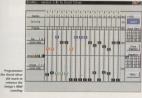
Amiga on, load the sequencer program as per the manual instructions, and you'll be home and dry. As you progress you'll probably be

tempted to add sound expanders, drum machines, and all manner of other Midioriented goodles, but the basic set-up described above is more than enough

# Unio



Tiner Cub hos good editing



to get you started.

# Sequencer packages

Bars & Pipes Professional 2 - Blue Ribbon

new effects and expanding the sequencer's new R&P tool

Bars & Pipes Junior - Blue Ribbon

Details: This cut down, but still very adeavailable.

> Product/manufacturer Deluxe Music Construction Set -

Details: Originally more of a music pro-

Harmoni - The Disk Company The Disk Company and various other Details: Competitively priced Midi sequencer.

KCS Level II v3.57 - Dr. T's Music Software Available from

mated mixdown.

All of these components are integrated into

Master Tracks Pro - Passport Designs Details: We've included this entry simply

ings (they had three sequencers.

Available from: Trilogic

Price: \$26.99

Details: Interface with separately

Product/manufacturer: Mini-Midi -

Omega Projects

Available from: Omega Projects

Price: £19.99

Details: Reasonably priced interface

which is built in to a D-connector. It comes

complete with two leads which can plug

switchable out/thru connections

Most public domain libraries Details: An early PD tracker program. Still

Plua it in!

Product/manufacturer: Midi Interface 2 -

Here are some details of just a few of the Midi interfaces that are available nowadays...

Product/manufacturer: Amiga Midi Interface - Gajits Available from: Gaits Price: £34.95 Details: Midi In. Out and Thru connections. Cables supplied.

Product/manufacturer: Datel Mid Interface - Datel Available from: Datel

directly into the Midi gear and contains LED indicators which flash when Midi data is being transmitted or received. The LED indicators are by no means Price: 930 essential but since they can help with fault-Details: Datel also offer a micro-Midi version which costs less than £20 finding they are always a useful.

Product/manufacturer Music X - Microlllusions Available from

Details: Sophisticated Midi sequencer that but full details are not yet available

Music X Junior - Microlllusions Details: Cut down version of the Music X

Product/manufacturer OctaMED Professional version 5.00

Details: OctaMED Pro is a tracker program which has its origins in the public domain tracker called MED. Over the last few years, as the package entered the commercial market place, it was given some major racker program available at the present

Version 5.00 is incidentally only compatible

Overture - Desert Software Details: This package is rather different from

most in that it adopts a traditional score-Pro 24 Amiga Available from: No longer available

Details: Another entry that is just here to set the record straight. This sequencer. but, when it failed to have the same impact as the Atari version, it rapidly

> Protracker Available from Details: Another PD tracker program

# Jargonbuster

#### DIN connector A standard plug'socket system found in

many pieces of audio equipment. Cassette tape machines, for instance, usually have DIN connectors on the back-panel.

#### Expander A common name for a synthesizer

sound module - a unit which contains the sound generating circuitry of a syn-You use them in conjunction with a normal synthesizer to add to the number of different sounds available.

#### Midi

This is an acronym for Musical Instrument Digital Interface, a communications framework designed to provide standardised digital communications equipment Prior to the adoption of Midi, many

musical equipment manufacturers set their own standards and a consequence of this was that linking equipment from different manufacturers was often difficult. Now that all music equipment (almost) trouble free!

#### Midi interface The Amina's serial port cannot be

directly connected to Midi equipment because although the serial port can handle the speeds required for Midi data, the physical connections and the incorrect. A conversion box, called a Midi interface, is needed

#### Multi-timbral synth A synthesizer capable of playing more

than one voice at the same time. Multitimbral Midi synthesizers can usually be programmed so that different voices respond to data on different Midi channels.

## Synth

Abbreviation for synthesizer

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# Stop whinging,

It seems that a great deal of space is taken up in your magazine, not to mention other Amiga mags, by letters from Amiga owners complaining about the cost of "essential" upgrades to their machines. They often finish by suggesting that they may be "forced" to change to a PC

I use both machines - a 386DX25 at work and an Amiga 600HD at home - and must say that I find the Amiga infinitely more pleasant to work on. Workbench, in whatever version, is a far superior graphical interface to that provided by

Windows. Hardly surprising since Windows is, after all, a "bolt-on" software fix whereas the Amiga range has been designed and developed for Workbench from the start Anyway, being involved with both machines I also read magazines from the "other side".

This has made me realise that in a number of cases it is not the Amina which makes upgrades so expensive, but the suppliers. I don't want to upset your advertisers but, frankly, their prices are often extortionate.

I realise that Amiga-specific goodles are governed in price by demand, but this should not apply to standard components such as IDE and SCSI drives, floppy drives, and even floppy

To illustrate my point, I have included a list of prices taken from your advertisers in the August issue, and one from a PC mag. Although the PC prices do not include 2.5in cables. the cost of these is negligible when compared to the savings.

The bottom line is that when contemplating expansion, you should always shop around. You'd be surprised how many PC dealers are helpful and courteous, as a sale is a sale no matter which machine a drive is going to end up in.

The list you supplied showed an average saving of about 33 per cent on hard drives and the same on floppies when comparing prices guoted in PC and Amiga mags, so the benefits of shopping around are clear. However, though you mention the fact that volume can affect prices, you wrongly dismiss the argument where hard drives are concerned. A company which works mostly or completely in the Amiga market cannot hope to

achieve the volume of sales which a PC dealer will realise. In effect, this means the Amiga company cannot buy drives in bulk, which pushes up unit costs and therefore end user prices. The PC market suffers from an overabundance of

retailers and mail order companies already, so it is not an answer to say that Amioa suppliers should deal in both markets, especially as most will find an area of expertise and strick Competent users with a screwdriver and steady hands should have no nonhieros fitting and formatting an IDE drive bought from a PC dealer, but most users will still want the cable

and formatting software supplied in the box and a certain amount of after-sales service in case something goes wrong with what is for many users their single most important invest-Can you imagine phoning a PC box shifter with an enquiry about Fast FileSystem

and what assigns you might want to insert in the startup-sequence to get a game to

leaflet introducing me to the Islamic reli-

you cannot help this, but I must take this does happen. Why do people do this? I

Anyway, the last reply I received

send a letter from so far away." How wrong I was! I opened the letter to find a

I have been an avid reader of AC since

the December 1990 issue (when I got my A500), and my only request is for fewer demos on the CoverDisks such as Bars &

Ezra Surf's

Allah by airmail Last month, I decided to put a

might feel at a sixole inanscorriate leaflet.

#### Poor old ST

ew ST games and no real intere What made me stop and thinl ver, was the fact that until little hat will happen to the Amiga? I think the public should be told

# **Grounded A4000**

also be an AGA version shortly after the release of the standard one, and there should be an upgrade path. Well it seems DID and DI have actually shown

I have a question for you. If Microprose manage to get their act together, is there a possibility of seeing Falcon 3 converted to the Amiga before the end of next century? You are being unfair to Microprose when you criticise

Camermans Filip, Belgium

them for non-compatibility with a machine which was released well after the game in question was in development. It is difficult for a company to anticipate new chip developments and costly to rewrite substantial Amigas, including the A4000, Even better, there will sections of a game which has already taken many thousands of man hours to code.

Games released after the A4000's launch, especially flight sims, are fair game, and any company which ignores those users with faster machines deserve all the flak they get.

As for Falcon 3, don't hold your breath as the game uses a lot of the sort of texture mapping that only PCs can normally handle. There's a good chance the game will appear on the CD32, but we'll have to wait and see.

from a quality software house. Luckily, all is not black for A4000 owners, as I am sure most of already know Digital Image Design will soon release an AGA version Digital Integration too assured me that their forthcoming Tornado game will be compatible with all

As an A4000 owner I was shocked that Microprose's

latest flight sims, B17 Flying Fortress and Gunship

and discovered that they were not able to test their

games on the A4000 simply because they didn't have

I don't know about you, but this isn't what I'd expect

In search for some explanation I called the belotine

2000, refuse to work on my machine.

one at the office!

of Inferno

More compos

the sense that they do not allow the user to create or save projects, but are limited ver-

The intention is to give readers a promeny might not be able to afford at the full

Reader response to these promotions has

Some have, of course, objected to the use

Fear not, as we have no intention of abandoning the policy of bringing our readers the

By the same token, we can hardly ignore the huge number of people who welcome the commercial product or save money on a purchase. More worrying to us is the reaction of readers to the inclusion of game demos on our double disk issues.

Do you like the same demos? Are they good fun or a waste of time and disk space? lar, maybe a serious program or game, but

please can we have more competitions? I also noted that you have started to

you make a lot of money from), could we please have a

other competition Ezra Surf's Postbag , Amiga Computir

could send me a booby prize? hope you will take heed

Competitions, whether of the phone-in or postal However, cramming in more compos at the might offend more people

reader feedback so that we may better indee loss swill use're doing. As part of that feedback,

#### **CD** worries

I'm the proud owner of an A1200 and 80Mb hard drive and added a

Got something to say through the pages of AC? Ezra Surf is our mailman dedicated to reading your letters and selecting the most interesting for publication. Drop him a line at:

Adlington Park, Macclesfield SK10 4NP Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't

pen to my A1230? be offended if you end up if the CD drive has to getting the chop-

both items in my machine. I just home

Also, on the same subject, Commodore R Bell, London

Commodore haven't uet confirmed exactly how highly likely that it will fit via the expa slot, which would make the use of all RAM or

and as such probably tron't be suitable for con-

We will continue to try to find out what is happening on this front, as many users are in a position such as your own, and bad news, in this case at least, is better than doubt and

blanking plate because nothing will fit in this slot until a SCSI interface or some other form of pass-through connector has been added, and correctly would be invalidated in any case.

# A fix for balonev

nat a load of baloney! You say

hat disk for the poor old 1.3 user.
You may be surprised to know hat there are still an awful lot of 1.3 winers out here, and though wi swapping, many of us have invested our hard-earned pennies in bigger memories and so on, se

Michelle Anderson, Barton-le-Clay

unfriendliness of CineMorph ir to Workbench 1.3, but we have now fixed the problem and the solution has been printed. For those who missed it, simply delete a file called Actilitizary from the libs directory of

ickstart and Workbench. Our commitment to WB1.3 hould need little more demonstra-

nigas. Good PD and shareware utili

ers and programmers have switched to Kickstart 2.04 and above, lured by the relative ease with which intuition-based pro-

newer versions.

Don't, therefore, be too surprised if good WB1.3 shareware dries up completely over the coming

## Cheapo USA

I am writing to ask if you can explain why there is such a massive difference between GVP combo cards, as I'm thinking of buying an 030/50MHz or the 040/33MHz

The price of the latter in this country is approximately £1,279, whereas in the States it is \$979, which is about half the price. These prices were taken from July's AC and Amiga World of the same month I think I would be right in saving that everything in the States is cheaper, but why? I

wouldn't mind paying an extra £100 or so, but double is just silly, as I think you'll agree.

Satpai Chander, Huddersfield

When a piece of computer equipment is imported from the US, its dollar value, including any freight and carriage costs, is converted to sterling, then Customs and Excise add 4.9 per cent Once the full cost of the equipment has been worked out, the usual 17.5 per cent

VAT is added, and calculated on the total after import duties. What this means is that a peripheral costing \$900 might have carriage costs of \$100

added to a total of \$1,000. In sterling, this comes to £666 Add 4.9 per cent import duty to make £699.33, then add a further 17.5 per cent to this to make £821.72. In effect, the dollar has been converted to the pound more or less one

for one, and this is before any margin for profit is added on by the UK dealer. Marry American peripherals, including the GVP A1230, are rather overpriced in this country, but when the duties and taxes imposed at the quayside are taken into account. the disparity in pricing is not as huge. This, of course, doesn't mean UK companies have



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#### TUTORIAL

or more than 150 years, people have been saying there is more than one way to skin a cat. Nostalgia aside, there remains a lot of muth in this cliché – and it can be readily

applied to computers too.

AmigaDOS has changed a lot over the years and system improvements make it serv difficult to make a generic boot disk

suitable for any machine.

The problem is not with the system, but with the software; unless you have access to the Workbench 1.3 disk set it is not

practical to make a bootable disk for that machine. However, it is more likely you will want to create a boot disk for your own

machine and this is what we will concentrate on for the remainder of this series.

A certain amount of thought will be required on your part - this isn't a con-

doing it yourself.

Directories are containers; as you may have noted they are just like the drawers

on the Workbench. Each directory is used as a container for similar items – commands, utilities, fonts, projects and so on. Generally speaking, computers do not

need directories - they're there for your convenience. If you had a disk you used to store files from Deluxe Paint you might categorise the work into different types and create a directory (drawer) for each one.

AmigaDOS requires a certain list of directories which must be present on any disk. This will allow an application to

locate the software it requires.

Applications (tools) include everything from wordprocessors to spreadsheets and even the Workbench utilities themselves. The following directories are required by

Essential directories

C: AmigaDOS commands. S: AmigaDOS scripts (programs

Fonts: Bitmapped and outline ty

L. The run-time libraries. Required b AmigaDOS software devices and

third-party filing systems. Libs: The library directory –

libraries. Devs: Device libraries - external

device handlers.

Prefs: The preferences. The actual contents depend on Workbench version.

Optional directories: System: System commands (FORMAT, DISKCOPY, CLI and so on) Utilities: Non-specific utilities.

The AmigaDOS command MAKEDIR is used to create a new sub-directory (strictly called a user-directory) – let's create some of the new directories now.

Boot your Working AmigaDOS disk, open a Shell and make MAKEDIR resiCC

Working with console Copy and Paste - be coreful how much text

Now enter the following:

Makebir Bootbisk:5 Makebir Bootbisk:Font

That will create some of the required directories. Don't try to make any more at this stage – there is a simpler way.

this stage – there is a simpler way.

MAKEDIR can take multiple arguments and create more than one directory at the same time – let's do that now and

create the some more required directories.

It would take a long time to enter this line if we had to enter BootDisk every time, so first of all we'll make BootDisk

the current disk and start from there

>Southisk:

A fully configured disk must be "staffed" with a lot more information than this – but AmigaDOS is quite smart and some applications only need a bare minimum to work. So, let's add some tools to

First of all, we have to move the command to activate the Workbench program: LOADWB. You will recall AmigaDOS commands are stored in the C directory which is also known as Cyon the current boot disk - which should have been your Working AmigaDOS disk.

The AmigaDOS command COPY is a very versatile command which is basically used to duplicate files between disks and directories. The command requires two arguments: a source file (where it's copying from) and a destination (where it's copying to). Enter this:

> >COPY FROM C:LoadWBS7 TO Bootbisk: Bootbisk:[ [created] LoadWB.. copied.

This command copies the LOADWB command from your working disk onto your new boot disk and creates the C directory at the same time! This is accomplished with a little trick using the special character string "82". Don't worry about how this works – you'll see more examples in a moment.

Is that enough? Try booting your new boot disk and see what happens. Nothing! This is because AmigaDOS looks for a "boot script" – a special AmigaDOS program in which it executes a sequence of AmigaDOS commands which load and configure the Workbench proper.

This process is completely automatic – provided the special file is there. We have



#### TUTORIAL

to create it first. Boot your Working AmigaDOS disk once more and

#### >{D BootDisk:S/Startup-sequence

## You will be asked to change disks if you

A screen like the one shown in Figure I screen editor, ED. A small message at the Creating new file.

ED is like a very simple wordprocessor used to create and alter AmigaDOS script programs. The program we are going to create has just two lines - enter these exactly as they appear:

# Lood#9 End() [ >NTI =

Leaving ED can be achieved in a number of ways, but the best way is to use the menu also use the direct command Esc-X which means you press the Esc key once, then X then Return. This saves the file and exits

appears!

There's nothing magic of course: AmigaDOS has booted your disk, found a Workbench, ENDCLI turns off the initial Shell window and cleans up after itself we don't have to copy this from an original disk because like many AmieaDOS com-

mands, it is already in ROM. Examine the Workbench and in particudisks: the chances are most will fail. The

As I've already said, AmigaDOS requires a large number of files to operate correctly - the actual files do vary from version to version, so the safe bet is to copy

everything! Enter the following commands -

space (a lot of things are going to get copied here). You will notice two of the COPY commands here use the ALL switch - this ensures any sub-directories (and contents cated too. Don't let that phase you - you'll see it all happen on screen!

>Copy FROM LIBS: TO BootBisk:Libs >Copy FROM BERS: TO BootBisk:Days >Copy FROM L: TO BootBisk:L ALL

That takes care of the system drivers. handlers, libraries, filing systems and your current preferences (phew) but there are

We might need a printer and the machine will certainly need to know what Makebir BootDisk:Devs/Keyfings

There are also some directories required by later Workbench versions (their presence does not affect

the earlier revisions) and those are created >MakeDir BootDisk:Deus/Monitors

>MakeBir BootDisk:Beus/DOSDrivers

Finally, Workbench 3 and higher have

>MakeDir BootDisk:Classes If you have Workbench 3 you should also

copy the contents of this directory: >Cooy SYS:Classes TO Bootbisk:Classes

Next we need to locate and copy the from your original Workbench disk set to

keymap file is GB - although this will be

in release 3, so we'll use a special AmigaDOS command, SEARCH, to find them. Make SEARCH resident like this:

Now insert your Workbench disk in the internal drive and enter this:

>Search 010: FILE ALL "GB"

every directory on the disk currently in the internal drive for a file called GB - you should substitute the name of the keymap

plete the operation - don't worry, this is disk in your disk set and try again. When are looking for, the screen will look like

# Search 160: Titl Att "58" Now we'll use another little trick to save

button at the beginning of the message this example) and drag across to select the

Hold down the right Amiga key and press the letter C - that copies the text to the clipboard. Now enter this but don't press Return just vet:

#### >Conv FROM

Press the Right Amiga key and V to paste tion - your screen should now look like this (the path - Extras2.1.Storage... - may be different though).

>Come FROM Extras2.1:Storage/Keyesps/ob

Finally, add the rest of the line to make up like this and press Return: >Copy fREM Extras2.1:Storage/Keymaps/gb TD

Don't get disheartened if this does no work exactly as described first time. Console Copy and Paste is tricky until you

printer driver file you normally use. If you which one, just look for the most compati-

Extras2.1:Storage/Printers/Epssell >Copy FREE Extras2.1:Storage/Printers/Epssell

Now add the destination directory which is BootDisk:Devs/Printers like so:

>Copy FROM Extras2.1:Storage/Printers/EpsonX

Our boot disk currently only has a sinmore commands than that in order to mand directory over from a working disk

#### Copy FROM C: TO Bootbisk:C

but this is lazy and it takes a lot of room on the boot disk - space that could reasonably be used for other things. At this stage therefore, we'll copy the following useful commands: COPY, MAKEDIR, DIR, You have already met most of

lesson. Copying these files one by one is slow. For this example we'll use a simple First, we'll make the current directory

the command directory of the boot disk:

2.Now we'll copy the files over in one go. split into two - ,but you can insert all the you wish.

factory FROM COPY DIR MARFOLD TO Boardish-F

At this stage if you try to boot your ne boot disk it will not have the correct screen

Apart from the fact Workbench is active you can do very little else with it. The "Daemon" (IPREFS) cannot locate the cu

take so long - so we need to edit the box program like this:

>83 BootDisk:S/Startup-sequence

LoadWB, and enter the following lines: Copy ENVERC: RAM: Ere ALL QUIET

Save the file as described above - and wait

lines you have just entered have the follows ing effect: -Copy ENVARC: RAM: Env ALL QUIET

figuration. The Env directory is created by

-Assign ENT: RANGERY

sets the user preferences. This command is a daemon, which means once started it never stops. It hangs around in memory such as: "Please close all windows except

. In the concluding part next month, the renaming system directories will be added and the boot disk completed with a sample application.

60 Amiga Computing November 1993



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#### **ISCANNERS**

at which you instinctively get better the more you do it. But are finite limits to what you can eve, dictated by the hardware and

you to try out, but because under-nding how a piece of equipment rks often helps you to better use t equipment, let's first consider how

anners scan.
It's not complicated. They shine
ht on to the graphic that is being
anned. That light is reflected back. ause that's what light does. The humble hand scanner can afford degrees of creativity that even the pros would be impressed with.

leff Walker divulges the benefits of his experience





# **Hands**

then read or "sample" the intensity of the reflected light. The resolution at which you scan - the "dots per-inch" (appear) to sample the reflected light will be sampled even if you choose 100dpt; then the reflected light will be sampled even 11000 to a line har coross the graphic. Monochrome (or simply mono) scanners are litterally mono (one) chrome (colour) devices a but the mono print-block dots. As they work only with block dots.

black dots

The reflected light-intensity value is converted by the scanner into a pattern of black dots. The martirs of the pattern is source, usually eight dots wide by eight dots high, which means there are 64 dots in all. This martix is properly called a grain, sometimes a cell, but most often it is referred to as the dither martix or other pattern.

Quis colours reflect less light, so these set converted into a matrix than the pattern.

lese get converted into a matrix the ontains mostly, or entirely, black dots ght colours reflect more light, so these t turned into dithers that contain



ch arimary colour that they see are not enough to duce the original colours in the photograph accurately



a 12-bit colour number of colours in the

four positions. Text at one end. Photo or a smill dot at the other, and two larger dots between? Three simply of larger dots between? Three simply of larger dots between? Judge enthersty about the control of larger dots are not between the control of larger dots are not back, and the set large of the seame? I lightness when the larger of the seame? I lightness when the larger of the seame? I lightness when the larger dots are not back, and the set light the entire marks summable. It is these patients that the more cannot have send on the seaming software. All the soft to the seaming software. All the soft of larger dots are not seamed to the seaming software that the software dots are dotted in the seame of the

ights at the image - red, green and blue (RGB) - and then calculates and blue (RGB) - and then calculates an intensity value for each of these primary' colours. These are combined, just as you combine RGB values in your painting software's colour palette, to produce a true colour.

For a 24-bit colour flatbed there will be 256 intensity levels of each primary

scanner can give you 256 true

The popular mono hand scanners, those Power Computing and Data make for example, turn the

lour, plat that a sca sk mil- s (256 the

lion colours (256 x 256 x 250) can be created. Some colour Halbed ac one pass seach for the three colours, and the colours and the colours and the colours that the colours that colours the colours that colours the colours that colours the colours that colours that colours the colours that colours that colours that colours that colours that colours that are truer to those in a original times?

the original image.

Because of their size and relatively low cost, colour hand scanners don't have three lights to shine at the image. So they shine a single "white" light

#### SPECTRUM

as even-sh amount of every colour in as spectrum. It therefore reflects colours truly. Man-made while light is not so pure. You've probably heard of adylight fluorescent tubes that many offices use instead of traditional light bubs?

Colour hand scanners contain a simar fluorescent tube, although much smaller of course, and the reflected oht is filtered by the scanner's receptors into its RGB components.

They can scan in levels of grey as well, and they do this in much the same way as mono hand scanners, only the intensity value is translated into a true shade of grey instead of a black and white dither pattern. One of the problems with mono

hand scanners, caused by the limited number of shades they see, is that parts of the original photo that are very light colours, but not actually white, are seen by the scanner as

white.
This produces screen images that have "hotspots" all over them, giving the image an ugly high-contrast appearance. One way around this is to place some thin, transparent coloured plastic or glass over the photo before scanning it. I find that red is bost, but it depends on the colours and quality of the original photo. Different coloured

materials produce different results. My favourite trick is to cut up lots of transparent, differently coloured sweet wrappers, sprinkle these over the image, put a thin sheet of clear glass over the lot (pinched from a picture frame), and then do the scan. This is even more fun to do with a colour

And don't stlck at clear material. Keep your eyes open for anything that is quite thin, fairly flat, and either transperent or semi-transperent. If the material is too thick the scan may come out slightly blurned, but I've put my offect of 38in frosted glass (pinched from a skightly blurned, but I've put my offect of 38in frosted glass (pinched from a skightly blurned, but on some offer my offer of the skightly blurned, but of the skightly but on some offer Colour hand sconners con produce 64 true shades of grey, which is often all





mono neuta semmens can save in 16 greys, but the limited mamber of shudes they see means eay light overs in the photo will stand out as hotspots, giving it a high contrast appearance



If your colour hand scans are looking like this, it means your scanner light is not shining brightly enough because it is not being samplied with a biole caseach soften.

To give your scans
that "wropped up"
look, try scanning
them through some
cling-film



# Do you have the power?

If the fluorescent fight in your colour hand scanner isn't bright enough, the red area of its spectrum facts, and consequently less red is reflected back to the scanner. So if you are getting dull scans from your colour hand scanner, or scans that have a tabue-green first of them, it is because the image is not being illuminated properly, and this almost certainly means that the scanner hand is not being applied with enough power.

The AlfaColor scanner, for example, takes 12 volts of power directly from the Amiga, and this is plainly not enough because it always produces scans that have a blue-green tint. The more expensive Migraph ColorBurst can take up to 15

volts of power via a separate power supply unit (PSU), but it is being shipped by some UK distributors with a 12 volt PSU which, like the AtlaColor, results in blue-green images. But give ColorBurst a 13 volt PSU, as Golden Image has

done, and you get bright, vibrant colours that are close to those in the original. Golden Image is currently looking at supplying the AlfaColor with an external

13 volt PSU instead of letting it take its power from the Amiga.

The AlfaColour band scanner

#### **SCANNERS**



PowerScan color offers affordable quality

one. Screw up some cling-film to make a six crissly and then pull out again, and a six crissly and then pull out again, amount out any places where the cling-film has stack together in folds. Hen place a sheet of clear plastic or gless over it so that you have a smooth surface to pull the scanner over. The reflect to pull the scanner over. The residence place is something that would be very very difficult to produce with thinge processing self-independent places.

ware.

More tips in a sec, but before I forget
I must quickly discuss printing. If your
greyscale images are going to be
printed on your home printer, keep in
mind that the Amiga is limited to printing just four bits (16 shades) of grey,
no matter what dither method you
choose in Workbeach preferences, or
how many shades of grey may actually
be in the graphs.

be in the graphic.

With help from special print enhancing software like TruePrint or Studio (but not TurboPrint or Studio (but not TurboPrint or Fexicump) you will be able to print more shades of grey. The Aniga prints colours in 16 grey. The Aniga prints colours in 16 bits—four each of magerial, yellow and cyan—so it is able to reproduce up the 4,096 colours on your colour printer.

4,096 colours on your colour printer.

To print more colours, colours that are truer to those in the graphic, again

you'll need that special printing software to give the Amiga a boost. If you don't want the expense of buying special printing software, then don't bother with the expense of a replay scange.

I mean, from a home DTP point of view there's no point in having scans of photos that look great on the screen but print poorly, so you might just as well buy a mono scanner. But don't exocct miracle printouts.

#### FLATBED

For colour multimedia work I'd recommend nothing less than a 24-bit flatbed scanner if you are working with photographic originals and want near photographic quality results. If you are working with small photempths are stored or any other kind

tographs, cartoons, or any other kit of coloured illustration, including graphics produced with airbrushes, water colours and felt markers, you may very well get away with a colour

markers, you may very well get away with a colour hand scanner provided the graphics don't contain too many subtle colour blends and they are not wider than

If they

are wider, how about trotting down to a copy shop and getting them reduced on a colour photocopier? Do I hear the sound of thousands of palms slapping thousands of foreheads?

For mono multimedia work from

For mono ma media work fro photographic originals, the 64 greys inds of 256 genyscales can still produce great sneeges

16-greyscale images are often surprisingly good

produced by
the colou
hand scanner
are normally plent,
good enough. Whe
scanning illustrations
the 16-grey images pro
duced by the mono han
scanners are often surpris
lingly good and may be all ye
need.
For scanning photographs am

# Which scanne

Essentially there are just two reasons to scan images into the computer – to use then on the screen for multimedia purposes, or for desktop publishing.

For multimedia work you will almost certainly want colour. The rule-of-thumb here in quite simple: The more "bits" of colour the scanner can see, the higher the quality of the scanned images will be.

The Power Computing colour hand scanner is a 12-bit device. It can see four bits if

red, four bits of green, four bits of blue - that's 16 shades of each primary colou amounting to 4,096 colours in total (16 x 16 x 15). The AffaColor and ColorBurst scar ners are 18-bit devices, seeing six bits (64 shades) of each primary colour, so 262,14 colours in all.

colours in all.

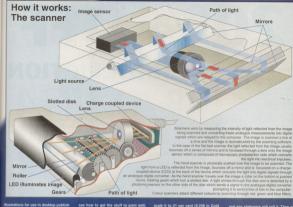
You'll probably want to end up with 256-colour images, so it would seem that any of these three will be plenty good enough colour-wise. But consider this: A typical photo.

If you want the colours in your 256-colour image to closely resemble those in the original photo, the more colour data you have in memory to start with, the better will be the

insignator, the more coolor data you have it maintay to said wat, in colored water or convented image. Flatbed 24-bit scanners, like the Epson GT-8500 and GT-8000, can see eight bit (256 shades) of each primary colour, which gives them a palette of 16.8 million colours. Another major consideration is size. Hand scanners are only 4in wide. If you are plan



Supreme quality from the Epson range



mustrations for use in desktop pubming in recommend a colour scanner— hand or flatbed depending on your needs. The only area where mono hand scanners come into their own in desktop publishing is for scanning line art graphics like text, logos, symbols, car-toons, sketches and so on.

Back to the tips, and while on the subjects of line art and printing, let's

All you have to do after importing your scanned line art into your desktop your printer is a 300dpi device, scale it to 25 per cent (0.25 in Gold Disk soft-ware). If your printer is a 360 doi device cale it to 21 per cent (0.208 in Gold isk software). It doesn't matter one lota what reso-

In occar t matter one rota what reso-lution you scan at, except that the higher the scan resolution, the larger the image will be when scaled down in the DTP software.

# LINE ART

caling down grey or coloured graph is will not improve their quality when rinted; only the print-enhancemen

Hand-scanning in a straight line can be difficult without the help of a scan-ning tray, but there's no need to in splash out on one - you can build you own. Put a white piece of paper on your flat scanning surface.

Put your photo or graphic on that.

Cover them both with some clear plassic — the thin stuff that goes gollump gollump when you wobble it is best.

two big, thick, heavy books. I use two Yellow Pages. Place one to the left of the image, spine inwards, and get if aligned square with the graphic. Then gently place the scanner head on the graphic and up against the spine of the

parallel.

Away go you. When you do the scan, lean quite heavily on the two books with one forearm, and then pull the head down the image with a very light touch. Don't put any pressure on the head — it's the pressure that causes you to make jerky movements, Just let the head slowly and evenly glide over the image.

And if you believe that, you'll be sything. I'm gone. Happy scanning

#### do I need? er

any of

orig-

nt bits

plan-

them attempting to stick them together in an art package is not a viable proposition. It is far easier to climb Everest. But then you might enjoy the challenge of course. Whatever colour scanner you choose, you will need lots of memory to be able to use it productively. The more bits the scanner sees, the more memory will be required to hold that data in memory

With 4Mb of expansion memory (that's on top of your graphics or "chip" memory) you'll be able to comfortably scan images to screen-sized proportions, but for colour desktop publishing, where you may want to scan much larger sizes, you'll need 6Mb of originals unless you scan at low resolutions.

For mono desktop publishing you'll easily get away with 3 to 4Mb of expansion RAM. Keep in mind that the colour hand scanners can all produce images that contain 64 true shades of grey, whereas all of the less expensive mono hand scanners (which are 1-bit

devices) can produce only 16 greys. Well, having said that, the AlfaScan mono scanner software is able to produce TIFF

files that contain up to 256 shades of grey, but it does this by anti-aliasing the image. which means that while the resulting image may appear to have smoother blends, it will also be less sharp because all the edges will be slightly blurred.

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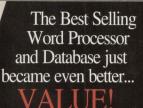
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ences which simply wouldn't be possible in its modern form without the power of computers. objects trillions of miles from Earth takes

Amiga, it is possible to keep track of millions of objects, calculate the paths they other, and so on, and it is this number-

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Now in v4.2. Distant Suns has come a long way since its 1991 launch and sports

#### AZIMUTH

The sky is normally mapped by refer-

For the rest of us, however, there is a facility to jump to any one of hundreds of

After this it is easy enough to navigate one's way about using the more common

program calls it. For example, to check out the view

options are available for oodles of There is a table showing when each of Heavenly bodies unicate

Distant Suns twinkle into your . living room and a virtual world is brought up to date in this month's

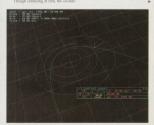
stellar survey

scope so that the object came immediately

and a copy of Distant Suns, anyone can

To add graphical spice, Virtual





#### **UPDATES**

probes. These show details of most of the planets in the solar system and some of their satellites and are accessed by clicking on an object while in identification mode. appears on the info panel.

they lose some of their dramatic impact, on Mars and the photo taken of the erupt-

ing volcano on lo By relieving the mostly black look of the program (we're looking at the night sky, remember?), the IFFs break up what could easily have turned into an informa-

#### **EDUCATIONAL**

voyager missions are available to those who wish more visual delights, so the extent to which Distant Suns can be. cational and a treat to look at is limited

only by the user's preferences. Three ready-defined environments are included in the package, showing the last visit of Haley's Comet in 1986 and a couple of eclipses, but as these are all events

use, and a couple of updated events, such as the recent visit of a large meteor

tool for parents and teachers alike and a definite "must buy" for astronomy-loving Amiga users.

· For more information on Distant Suns,

## Safari fonts

Some of the best PostScript and quarter century mark with the release of range it is a fitting landmark.

Disk 25 contains only five fonts, and as it doubles up, offering different versions of the same typeface, it could be said only

However, the MovieStar font is almost in itself worth the asking price, and is one

Of less than general use, fonts such as (easily the best font on the disk) are ideal

NERVOUS

COLLEGE

HIRLDCK

MARS ONE

motor city

ATOMIC AGE

TYCOANUS - OUTFLIME

Movie Star Spur

work, and posters. They are augmented by Triangulus, a fairly pointless font of the wacky school, and Tycoanus.

The latter is actually a renamed version taken from the latest spin-off series. Worthless outside the context of Trekkie mania, it is nonetheless one which Trek fans will undoubtedly want to add to their collection, making this disk a good buy for such disturbed people.

As usual in common with all Safari fonts, each is well designed, clean and and Adobe Type 1 PostScript format, so something to please

In addition to the latest fonts, distributors EM Computergraphic have now popular fonts in the Safari range in special

Star fonts is a bringing together on one

fant frenzy as FM Compagraphic take their safari space pare

disk of the most sought after Trekkie fonts, including those from the original Tiseries and the later New Generation stories, and is aimed squarely at the yas army of sadly addicted fans of the ageing

Shatner and his crew of crumblies. Included in the collection is Tycoanus a variety of supporting characters such as Primaton Juniter and AliensOne

Some of the typefaces are a bit creaks particularly AliensOne, but as a compilation disk this one will no doubt be a hir with anyone who needs title fonts for space

#### **FUTURISTIC** The second compilation disk we looked

at. Future fonts, contains several general purpose futuristic faces, such as the excellent Airlock font, and the superb Nervous. a direct copy of the font used in the movie Psycho along with a few more down to earth typefaces.

the sort used to emblazon college names on baseball jackets, and Motor City a copy of one of the 50s American car manufac turer's logos (could be Chevrolet, but I can't be sure), so there's a bit of non-space variety for the earthbound among us. In all, the compilation disks, now

including Serious, Display, and Script, are good value for money at £15, and offer the font user with a specific area of interest the chance to buy several sought-out fonts through an entire library, finding one on each disk. If this isn't enough, EM Computergraphic now offer a Pic 'n Mix service for those who need an exact list of

· For more information on Safari fonts. contact EM Computergraphic on 0255 431389

# **Scenery Animator v4.0**

rival, Scenery Animator v4.0 has had to struggle to offer something different. In its latest

The program has always been much easier to use than Vista Pro, particularly when it

case, but not all packages have found the jump to AGA an easy one. Some, like DPaint IV, have suffered for speed, and some have only incompletely accepted the new format. Scenery Animator v4.0 accomplishes the task with ease

Ham8 and 256 colours have been added to both the Anim Mode and Render Mode menus, and HAM screens will render in hi-res interlace if the program is running on an A1200 or A4000.

without its problems, and loading some objects can have in very unpredictable results. Ascii version of this. Users with objects generated in other packages will have to use a the problems appear to arise.

In the conversion, a process which is seldom without problems, complex objects often

The problem is not with Scenery Animator, as genuine VideoScape objects work a Imagine, Lightwave, and Real 3D, the feature would be an infinitely more powerful and

Problems arising from conversion meant that when preparing images for this article, a great deal of faffing about was necessary with conversion programs and a variety of objects to find those which would transfer properly.

Having said this, the images generated are vastly improved by the addition of 3D objects, and if the user can find sufficient VideoScape 3D images or the correct settings other program of its kind.

Animator's ready supplied landscapes, and is augmented by the program's facility to

addition of the ubiquitous cow object provided with Imagine v2.0, a complete virtual

properly. Using Vista Pro, the nearest one could come to this sort of result would be to spatter

some of the package's tombstone-looking "houses" around and add the odd unconvinc-

· For more information on Scenery Animator v4.0, phone Meridian Software Distribution on



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#### ith the Amiga world already groaning under the weight of assorted video graphers really a place for another? After all. with products like VLab Y/C and IV24 v2. already providing spectacular quality at or below FrameMachine's £699 asking price.

rough ride right from the off.

However after just a little experimentation the Amiga's latest power product slowly but surely began to redress the

Things got off to a flying start thanks to blissfully simple installation. Unlike the majority of expensive add-ons. effortlessly. Better still, once the accompa-

In fact, in a rare break from tradition I problems whatsoever. Even so, it must be

#### **TIGHT SOUEEZE** On A1500s and 2000s, for example, a

found on the A1500 and above. For those lucky enough to own an A4000 there's the added bonus of full AGA support in addition to all the older Amiga modes plus



video grabbing, this seems the obvious place to start, but of course before any grabbing

are made at the rear, alongside the board's genlockvideo-out plus a separate S-

### **Useful array of tools**

you'd expect, playback speed can pretty slow in the larger screen sizes. Last but far from least comes Prism Preferences, which allows control over how Prism output is to be combined with Amiga graphics. In addition the requester ovides total colour, saturation, brightness and contrast control over the

Sisplay

I if you have access to an extra monitor or Scart compatible TV, it's here
a duel monitor setup is configured.

# The picture

# machine



#### Paul Austin plugs in FrameMachine and discovers it's a lot more than just another pricey picture importer

For those lucky enough to have two monitors, the 23-pin RGB has the added bonus of providing a dedicated FrameMachine preview while the normal Amiga signal appears on the machine's original

However, it must be stressed that a twin monitor system is not essential as FrameMachine has the ability to blend Amiga and FrameMachine output, which although not ideal is certainly a usable

Once connected, the next task is to set up the software preferences accordingly by specifying a Preview mode, which can vary from quarter screen lo-res up to hi-res noninterlaced - grevscale only, although if the aforementioned Prism 24-bit frame buffer is fitted, a full-colour, 24-bit preview can appear on the second monitor.

Assuming a suitable image appears, the image within FM's internal memory and pops up a conversion requester offering most Amiga screen modes in varying sizes - with the exception of super hi-res

All conversions can appear in both colour or greyscale, with optional dithering and overscan if required

Of course there are always the three 24bit save options if Amiga modes aren't suitprogram will first set about converting from its default YUV grabbing format and then update the screen with the one of your choice - assuming it's supported by the

#### CRISP IMAGES

In practice, single-frame grabbing is extremely easy with hotkeys and mouse clicks controlling the entire process, and better still the images themselves are extremely crisp. Even better than that, never once did FrameMachine produce a jittery image - even when grabbing fast

Like any self-respecting frame grabber, FrameMachine doesn't stop with single images and in fact sequential grabbing and support for animation is generally pretty

Again, with the assistance of Prism a whole host of compressed full screen grab sizes are available, and once captured the

#### VIDEO

program's format conversion and sequence editing options are excellent.

Like VLabY/C, FrameMachine uses the aforementioned YUV grabbing format which then requires conversion just like a single frame. However the software makes a decent attempt at ADPro-style multi-processing thanks to various sure formats, both 24-bit and Amiga, plus an array of palette

Best of all, there's a truly excellent cutting (or editing) screen which allows your raw captives to be displayed in miniature and then cut, copied and recombined into a tallor-made anim or still sequence.

Although FrameMachine has an impressive array of grab sizes and direct 24-bit full-colour compressed preview via Prism 24. it remains a strictly linear grabbing system which means all the frames must be grabbed in succession – in real time.

Unfortunately this invariably means anything over quarter screen will skip frames during importation, which of course is reflected in any subsequent animation. In total, six grab sizes are available with

from full screen 720 x 570 hi-ress interface to 88 x 70 non-interface — which is roughly the size of a postage stamp. Like single grabs, sequential imports can be either colour or B&W — however, only full frame images can employ interface.

Unfortunately because there's no alternative to linear importation, the sequence processing and editing tools are reduced from impressive power functions to mere playthings.

Abs. until FrameMachine can match the

Ass, until trainessacture an insurt of interleaved frame recording (ILR) available within YLabY/C, the card will remain irretrievably out-gunned when it comes to sequential frame grabbing.

Courtesy of the IFR, VLabY/C can cap-

ture video size images in full 24-bit, frame by frame without missing a single image.

Thanks to some inspired programming, VLaBY/C can make multiple passes, continually grabbing as much as possible while keeping a record of which frames remain, ready for the next pass.

In addition, VLab also supports

In addition, VLab also supports FrameMachine-style linear grabbing and, of course, all standard and AGA modes are on hand via built-in processing options. The only drawback of VLabY/C is the lack of a built-in frame buffer.

However if a buffer becomes essential, Retina can be added for approximately £300 – for a basic model. Like Harlequin, Retina has VLab compatibility built-in, allowing grabs to be made direct to the board – and unlike FrameMachine, a paint package comes as standard.

With IFR in VLabY/C's favour and the Retina/VLabY/C combination matching FM's price point almost exactly, it appears that the new board is firmly on the ropes and on its way to the canvas.

However it's not over yet as FrameMachine fights back with Prism, extensive ADPro support, video compression and some very impressive genlocking options.

If simple frame grabbing is all you

require, it is possible to buy Frames/achine

Without doubt
the best frame
grabbing interface
to appear within

ADPro

ADPro
minus the optional Prism 24-bit buffer, but
if that's the case VLabY/C seems even
strong buy than before.
However, when FrameMachine is com-

bined with Prism, the humble grabber becomes a much more attractive proposition. On practical level, Prism provides FrameMachine with quite simply the best preview of any grabber with a variety of window sizes right up to full screen, all displayed at 25fps in full colour.

In addition, the grab itself, appears instantly in the size of your choice – all in glorious 24-bit, of course. Better still, its talents aren't limited to grabbing. In fact, the same video compression techniques offer six sizes from full video down to an 88 x 70.

for pursuant continue may people manufacture and the composition of the continue may people manufacture and the continue manufacture and the conti



The window then appears as a PIP – or picture in picture – over S-VHS importation providing near

Workbench, DPaint or whatever else. Although pretty impressive, this is only the beginning thanks to the board's 23-pin, genlock-compatible video-out. Thanks to the video-out, a combination

of compressed video and normal Amiga graphics can be sent to a genlock which can then strip colour zero replacing it with the incoming video, which appears behind the compressed video window while Amiga animation or titling adds the finishing

The end result is a pseudo-graphics sandwich. As you can see from the screen shots, the overall effect is very impressive, and with careful placement, news-readerstyle compositions are a breeze – complete

#### SUFFERS

Like most power products, FrameMachine and Prism have leaped onto the ADPro bandwagon, with an FrameMachine loader which provides direct access to the grabbing power of the board from within the ADPro environment.

In addition, a saver also allows direct access to Prism's 24-bit display. However it must be said after auto-scaling the image and rendering in what appears to be hi-res non-interlace, theimage quality does leave a lot to be desired in relation to other

However having whined about the saver, it's only fair to credit the loader which without doubt is the best frame grabbing interface yet to appear within

Unlike the VLab loader, the FrameMachine variant offers all the screen resolutions, preview and grabbing options available within the board's own software. broadcast quality and results

Even full-screen 24-bit previews at catered for and like the standalone, th loader invariably generates completel flicker-free imports

flicker-free imports.

All in all, FrameMachine is a very impressive product which has hit the streets just a little too late. If some form of IFR could be added to the system it may well become a world beater, but until then VLaby/C will definitely make life yers.

difficult for the newcomer.

On top of that comes the lack of a paint package which again the VLab/Retina. IV24 and OpalVision already offer Whether Prism can cope with such a thin remains to be seen but until both of these problems are resolved it looks like this packate is a could be a part of the packate in the part of the packate is the packate in the packate in the packate in the packate is the packate in the packate

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#### **AGA Video**

I previously used an A500 to produce a video of linked animous and stills to music, using Draintly for the graphics and TV-Soow to provide the script when transfering to video, but became disenchanted by the limitations of colours and memory in hieres.

I changed to an A1200 in January and upgraded DPaintlV to take advantage of it. I also had initial elation when I was given Amiga Vision free. Now the disappointment. TV-Show will not accept the number of colours and Amiga Vision similarly only takes to-res 32 colours or hi-res

Never mind, I thought, I can use the

This month we answer questions about the A1200, printers, Maxiplan, CineMorph Junior, DIY and more!



bersome than the other scripting programs but at least I could make hi-res and S-VHS video.

gram to work with the Al200. I've telephoned Electronic Arts but have had no reply to my two telephone calls. Your suggestions would be welcomed. Do I need another program and what will

V H Leadbetter, Bristo

You might like to consider buying Take 2 (v1.812) which handles Hom8 graphics. If you have a hard (and a healthy bank halance) you might look at Scala MMZIO which also sunports the AGA chip set and provides special effects, clip art and a nice selection of fonts.

## The mysteries of snapshot

my A500. It's got 1Mb of RAM and a GVP 52Mb hard drive. The snapshot does not work any more. I have tried everything I can think of but I'm no expert with computers.

I've disconnected the hard drive and taken out the half meg card from underneath, plugged in the master disk of Workbench and it still does not work. I've even tried Disk Doctor on df0: and dh0: but this shows no fault. It's driving me crazy because every time I open db0; dh1: or dh2: I have to keep on stretching the windows open and all other windows to get to all the other programs and games. Please help me. it's driving me mad.

I don't think it's a fault with Workbench because this problem occurred after it was installed on the hard drive. But, as I said it won't work even with the drive off and on the original Workbench disk. Where has snapshot gone?

A Supplied on the ASD (and all 13 Amigus) works in a mysterious may compared to Workbenche 2 that is.

As you are probably assure, to supplied on the core you should allow on it then select suspendent. To get Workbench to remove the top-shot. To get Workbench to the more of a window was usual the represent eight on the colds on a student when select suspisals. Not so, as the WBL3 sumplet only works whole am from has been selected.

In order to sunwhele a window review and

position it as required then click on the drawer icon that was used to open it and snepshot that. For instance, if you had a drawer called Fred you would open the drawer, position the window, click on the Fred icon then select snapshat.

If you wanted to position the window so that it obscured its drawer icen, you would have to use extended select. In other words held down the Shift key, click on the drawer icen, position the window over the icen, snapshot then release the Shift key.

### A1200 printer incompatibility

We all knew that some software would not work on the A1200 and some discovered that add-on floopy drives could be a problem but have you heard of a printer that appears to be incompatible?

1 own a Canon PW1080A 9-pin dot

matrix. I purchased it eight years ago to use with my old Beeb. Three years ago I bought an Amiga 500 with which it still worked satisfactorily. Having decided to upgrade to a hard

disk A1200, while I was buying it from We Serve in Portsea I happened to mention which printer I used. They told me that a previous customer

Inley tota me that a previous customer had found that it would not work with the 1200. To be honest I did not believe them but no matter which driver or DIP settings I use I cannot make it work other than the printer initialising when switching the computer on or off. I wrote to Commodore and Canon six

weeks ago but have not received a reply from either. Please can you help. Derek Nunn, Hassocks.

Other than what you have told us, we don't have any knowledge of compatibility problems with this printer. If any other readers contact us with details of how to get it working with an A1200

### A1200 printer setup

BJ-10sx bubble jet printer. When I installed the BJ-10 printer driver from the storage disk, to the Workberich disk in the Devs-Printer drawer with the default (generic) printer driver I thought how pass it was:

driver I thought how easy it was.

But when the printer prefs window is displayed on the Extra
disk, there's no sign of the BJ-10 or generic drivers in the printe
type window. What has gone wrong?

I have very little knowledge of computers but I have followe

I have very little knowledge of computers but I have followed the instructions to the letter in Bruce Sertiffs Armigar 1200 insider Guide Series. I have played above with the printer prefer and bound that if I open the printer prefer editor both printer drivers are displayed but when I select OK I get the message. Error processing IFF file Deverprinters/BJ-10.

Please help as this is driving me mad.

Mr S Eley, Market Draytor.

Installing a printer driver involves two tasks: Copy the correct printer driver to the Devs drawer of a Workbench disk and selecting the driver to use from within the printer preference editor.

However, there is a mistake in the Workbench 3 User's Guide The second step in copying a printer driver to the Workbench disk should read:

Insert the Storage disk into your disk drive and a

window.

not on the Extras disk. All the other steps for copying a driver to the Workbench disk are correct.

driver to the Workbench disk are correct.

The error message that you received was generate PrinterPS preference editor. This editor is used to set up

Francis professor addits: This older is used to set up profess that have Polistopre capabilities and the core raison because the Cannon BA-16as in not a Polistopri protes. Having copied the Canno BA10 printer driver to the Workbeech Devel drawer you should use the Parlose profeere color to select the driver. The preference exists rat by use need to use it is because the professor days are as sold Printer Use to socied to Cannottify printer types as any delital professors that you require, then click on the San's bulletin.

#### **TECHNICAL HELP**

we will let you know through these pages. In the meantime way could try phoning Center with details of the A1200 port pins to see if they can help. You could also call Wane out to check your machine as it has a one-year on-site marranty.

#### CineMorph Junior & DPaint

I own an A600 and have just bought the August issue of your magazine. I am having problems trying to load my own files created with Deluxe Paint 3 into CineMorph

I have tried putting JPG on the end of all the filenames, but when I try to load them, no picture comes up on either the source or destination windows.

Also, how do I access Disk Doctor? I have heard that it is on the Workbench disk but cannot find it.

I Allowby, Rotherham

CineMorph lunior is capable of handling DPaint pictures but, by the sounds of things, the ones that you are trying to load take up too much RAM. The solution is to load your victures into DPaint as brushes, half their size then save them to disk before loading CineMorph

Disk Doctor was not included with Workbench 2 and is no great loss. You would be better off with a utility like Disksalv2 - and where would you find such a marvellous program? Look no further than the October CoverDisk

#### Mouse/joystick switcher

I am a student in my tenth year at Holy Family College, I am currently carrying out research

As you are working towards an eramination it would be unfair on other candidates for us to explain exactly how a mouse/joystick switcher works.

You got problems too? Then drop a line to Amiga Computing Advi Service, Europa House, Adlington Park, Macclesfield SK10 4NP ar we'll move heaven and earth to help in these columns. But sorry we cannot reply personally, so save those SAEs.

#### Colour laser printers

the Amiga System Programmer's Guide

your excellent magazine I value you about a subject that no Amiga maga-

At present I run an A4000/030 (a superb machine) which is connected to a Panasonic KX-P4420 laser printer (also a scanned images, verses and so on

Of course, the Panasonic is a mono portfolio (and my sales!) would increase if

I already own an NEC P90 colour dot matrix printer so I know dot matrix is definitely out, and my test drives of inkjets ers also fall short in producing consumer-

At last, we reach colour laser PostScript printers! Yes, I know they are expensive a QMS Colorscript is £3,000+ and the NEC Colormate PS/80 is well over £4,000 (they they produce colour images to the quality of a mono laser I would seriously consider

Presumably, being PostScript they can be driven by the Postscript printer driver Open Sesame

loading. Are there any com-ds which I could add to the up-sequence which would do

protect a CoverDisk because anyone who wanted to use in ithout your permission could go ou ad buy their own copy (or send off to.

installed on my hard disk, yes? If not, the manufacturers should be able to produce a driver if they want to make a sale.

or 8Mb of memory as standard - is this sufficient to produce a full colour A4

Before I get carried away and start askprinters?

magazines have done yet, as far as I can remember, so there could be a little one-

Thanks for taking the time to read this

It should be possible to use the any manufacturer worth their salt would go

offect whether or not a full colour A4 printer buffer, the less time your Amige will he tied up. A 4Mb buffer should be just about the right amount to hold an A4 page but clearly having 8Mb would be your best

afford mono laser printers, never mind colour ones. An article comparing colour laser print-

Technology. The research that I collect should help

me produce an electrical or mechanical device. For my project I have decided to investigate a mouse/joystick switcher for my Amiga 500, such as the RoboShift

I would be very grateful for any inforswitcher, especially the inner workings of such a device. Again, thank you in advance for helping me out. Richie Prado, London

I read with interest your reply to Martin grundy about installing Maxiplan on hard disk and running it from Workbench. I don't have a hard drive but run my wordprocessors and so on from Workbench, so I copied the explode library to my Workbench libs drawer and it runs OK. My problem is that I have installed CrossDos on a Workbench disk and while

Wordnerfect and Kindwords recognise CrossDos, Maxiplan doesn't. On Wordperfect or Kindwords the file requesters both show DF0:/PC0: or DF1:/PC1: but not Maxiplan. Any suggestions please?

Both my wife and I are new to computing as we only bought the machine and exten nal drive in February this year. I find the Shell frustrating if you get your spaces and colons in the wrong places.

A little tip I picked up in one of the mags I read each month is that if you select Show All files from the Workbench screen instead of going into the Shell, you can move.

copy, delete and so on from the Workbench Also, to take up less room, select View By Name from the pull-down menus. I think though, these two options are only on WB2 and above but I'm not sure, but it makes

Ife a lot easier if like me you're not techie Peter Fox, Doncaster

Many thanks for passing on the Workbench tip, if you have found it useful then we are sure there are other newcorners who will also find it beneficial. In answer to your CrossDos query, try typing PCO: into the path field of the file requester

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loin with thousands of Amiga owners across the globe in voting for your favourite hardware and software of 1993, and win a fabulous prize in the process!

#### Have your say

Hundreds of superb peripherals, games, and productivity packages have found the way into the pages of Amiga Computing over the past 12 months, and we've striven consistently to give a balanced opinion on their value for money, fun rating, or effective-

We are asking you to give us your verdict on the supreme champions of 1993, and the only criterion is pure quality. We're not asking you for value for money, or ease of use, or any of our usual measures of success - just let us know which peripherals and software packages light your candles, bake your cakes, or just make your eyes sparkle. This is your change to tell the software and hardware manufacturers whether or not

they've got it right, so send them a message and dip into the prize pot at the same time! To cast your votes and enter the competition, simply tick the box beside the best entrant in each category and send your voting form to:

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The ballot boxes will close on October 19 and the results, complete with competition winners, will be announced in our Xmas issue, which hits the shelves on November 18. leaving enough time for the prizes to reach their recipients before Christmas.

# instead of posting your votes, if you would rather phone in you can call

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#### Hardware

#### 1. Best video add-on

- a VLab/VLab Y/C b 1V24 v2
- C Retina d Harlequin e OpalVision

- 2. Best hard drive
- a Trifecta 500 LX b GVP HD8+
- C IVS Trumpcard 500AT d GVP A530
- e Zappo A500 external

#### 3. Best RAM expansion

- a Power PC1204 b GVP SCSI-RAM
- C Reference 8Mb A500 ext. d Microbotics MBX1200

32bl

e Power 8Mb A500 external

#### 4. Best music add-on

- a Miracle keyboard b Sunrize AD516 C DSS8+
- d Triple Play Plus e One Stop Music Shop
  - Amiga Computing November 1993 87

#### SURVEY

#### 5. Best printer

- a DEpson EPL5000
- b HP Deskiet (all models) C Canon BI10
- d Citizen Swift 200 0 D Star I C-200
- 6. Best monitor
- a □ CBM 1084S b Philips CM8833 mk2
- C CBM 1942
- d NEC 4FG
- e ☐ CBM 1960

#### 7. Rest scanner

- a Epson GT6500 b Power ColourScan
- C AlfaData ColourScan d Sharp IX100
- e Migraph OCR
- 8. My choice for overall best hardware add-on of 1993 is:

### Software

#### 9. Best wordprocessor

- a Protext 5.5
- b Wordworth 2 C Kindwords 3
- d Final Copy II
- e DEvcellence 3

#### 10. Best office package

- a Maxiplan 4
- b Superbase Personal
- C Superbase Pro 4 d ProCalc
- e Supra GPFax

### Other prizes up for grabs are from









HighSpeed Pascal

b Goal!

a Diggers

b Populous 2

C Megalomania d Civilization e War in the Gulf

C Archer McLean Pool

19. Best strategy/

war game

20. Best

adventure

a Monkey Island 2

h Indiana lones and the

fate of Atlantis

d D Eve of the Beholder 2

21. My choice for overall

best game of 1993 is:

C Curse of Enchantia

e Darkseed

d FI Grand Prix

e Microprose Golf



#### 11. Best productivity

- a Directory Opus b Art Dept Professional C Amiback Tools
- d Quarterback Tools e ProControl

#### 12. Best language

- a Diattice SASC v6 b Amos Pro C Blitz Basic 2
- d HiSpeed Pascal e Devpac 3

#### 13. Rest Art **Package**

- a Brilliance b DPaint 4
- C Personal Paint
- d Art Department Prof. e Art Expression
  - 14. Rest DTP package
- a ProPage 4 b PageStream 2.22
- C PageSetter 3 d Ginal Copy II e The Publisher

#### 15. Best 3D package

- a Real 3D v2 b Imagine 2.0 C Amos 3D
  - d Caligari 24 e Aladdin 4D
- 16. My choice for overall best
- software of 1993 is:

#### Games

#### 17. Best arcade/ platform

- a Flashback b Superfrog C Desert Strike
- d Body Blows e Pinhall Fantasies

#### 18. Best sports sim

- a Sensible Soccer

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#### Scribble Office

Scribble PD V022 Here's one of those PD disks that combines a load of previously available programs (although I must admit I've seen unsurprisingly, aimed at the Amiga-run

The Workbench has been customised, basically with the addition of a futuristic space-style font (although the option is there to change this should you wish by messing with the Startup sequence). There's also a screen saver, which is a nice addition. So here are the programs con-

#### Run QED

This is a wordprocessor, and not a bad one at that. As well as adequate and indeed rather flexible editing functions, you can cut and edit letters, words, lines and so on, and take advantage of page-based features using the Shift/Amiga set of functions. All of these are also shown on menus across

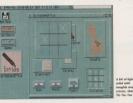
the top of the screen. Other features which might surprise include a macro facility, adjustable tabs and margins (good for pre-printing formatting), and even the ability to replace tabs with spaces, so that when you hit the Tab key you actually get a number of

spaces instead.

This kind of feature would be useful in. for instance, experimenting to find the best Phil Morse assesses a bundle of games,

utilities, animations and more which all share one thing in common - they cost next to nothing





rellef with noughts and rensses that's

possible format for exporting Run QED

Of course as PD, something must give. and the whole thing does look a little basic but nevertheless you can swap and change the colours to make it look a little more how you might want it, and as part of a bundle at this price, Run QED is a

#### Show STD Simple (indeed, the title is rather self-

explanatory) but it's one of those proit takes for you to stop yourself Show STD displays a map of the British Isles and a small window. Clicking on the

, 236x in uni 2012

files to other wordprocessors.

ply displays on the map where the region covered by your chosen STD code is (0663 is New Mills, Derbyshire, for instance) and tells you textually the area's name,

One omission is the categorising of

metropolitan codes into areas. "Outer London" for 081 is hardly specific - may be a later version will include separate that "061-427" elicits "Marple, Cheshire" Nevertheless it's a good little program

and a great time-waster should you have CalcKey

#### This is a great little calculator which can run in the background while you're doing

well as the usual calculator functions, this

versa conversions are possible. might need to use such a feature regularly, and indeed for anyone who often feels the need to reach for a calculator while com-

#### **Assassins Games 100**

Roberta Smith PD ee-gamed compilation with Assassing

You get Bload Runner, which is a very odd and strangely addictive platformer in tiny sprites that make lemmings look like the biggest icons this side of the oen's bonus stage!

conus stage! ust run around the screen, up and down ladders, avoiding the tiny men

come for you by digging holes. nese make the men turn into what look to me like hay bales, which you then into. They then disappear. Confused? Don't be, just be intrigued. Oh, and n you've got it and worked out what it's all about, please let me know!

Next up is Solitaire, a game which I'm mercifully more aware of. Coming from stralia, this version contains all the usual tweaks (timer, show cards, undo last ove and so on ) and has some very nice graphics complementing the classic d anywhere, Solitaire ports across to the Amiga quite happily and is as

positions as you propensity to play single person card games to hours on end. Finally, Monaco is a racing game which, atthough basic, is very fast and booth and has a gregous picture of Monaco their as an opening screen. There are no bends – basically you step card shring up you real and make you don't run into other cars, which expolating just, show and slight (other ire you don't run into other cars, while negotiating sun, snow and night (where I you can see is what your headlights illuminate).

And it's surprisingly fun, too, being a little like those early, frantic and furious

surprisingly fun, too, being a little like the steering wheel. Nice

what part of STD can hela



through a letter to the bank manager just to make a few financial calculations, and

#### Organised!

With its name changed from FiloFax to

You are shown a double page of an forward you simple click on the page turning gadgets, or to move to a different

page dividers. Different functions include a calendar, many years as you wish at the click of a button; a daily diary, which again is up "S" page again!

load and save data, configure the screen

#### The Money Program

I feel really guilty every time I see one of these personal money organiser programs. Calling all PD libraries...

and individuals with anything remotely worth my while having a peek at. If you want something released as PD, or you're a library with stacks of hot new stuff that you haven't seen reviewed in these pages yet, why not drop me a line with a copy, full documentation

From music to education, business to utilities - anything you felt deserved your showing onto a floppy disk, lemme at it and I'll do the rest. Address?

> Phil Morse, PD submissions, Amiga Computing Furona House Adlinaton Park Macclesfield SK10 4NP



of the best disk coalers ground

#### Tic Tac Toe

sion of noughts and crosses - a corporate

 Overall, Scribble Office is an admirable. tency. If you fancy more than two of these

#### PD Compilation

Holmes Brothers PD

and up to date): NumPad, a neat little utility for all you 'A600 owners struggling demanding the use of a keypad, which

there'll be something else on there to your liking as well. A bumper value bundle.

#### DCopy 2

Roberta Smith PD copying, but suffice to say that there are



This month's Art award goes to Carl Inc - a name which might ring bells with regular readers of this column, as one of his animations (a Christmas scene, if I recall correctly) got a right slagging courtesy of moi.

However, either I've mellowed or Carl has improved his programming techniques. because while Circus (this demo) follows his usual formula of presenting a cartoon things over and over again, all of which are amusing. I found it really enjoyable

It's the little touches, like the eveballs of the crowd all following in unison when the human cannonball shoots through the roof of the circus marquee, that make it for me. I was also rather amused by the clown and the dog which jumps through a hoop screen you look you see something

chuckle-worthy taking place. It's a nice little animation, and one that makes up in humour for what it tacks in



#### **Right Way**

#### Roberta Smith

This is a German program which mercifully contains enough English to make it playable by your average Island-based xenophobe. . Once you're past the seemingly endless plethora of opening screens, you find

yourself, joystick-clasped, guiding a load of tiny Lemming-like creature to an exit. It sounds a little like Lemmings, doesn't it? The difference is that here you don't have any control at all over the creatures themselves.

No, your task is to move the objects that make up the screen into such positions that the "lemmings" can make their way safely through. It's a novel variation, addictive to boot, and has the added obscure value of having come from deepest Germany (I think). One worthy of further investigation.



character Lemming-like



might wish to back up a disk which the stop you from backing up

requires experience of trying to copy classic to be powerful and flexible

### **Code Mungus**

#### Nicholas Smith

It's quite easy to write programs to test the user on a certain subject. It's peanuts

orkbench Screen

Salvage Operation

Stop Pause

the user and act on it. But that's not to say that there's no worth in such programs. centrinely useful subject area, they get my



What does this sign mean?

highway code with Munous

ously named Code Mungus. Not a secret service code, this is actually referring to

ten road sign questions, where you get a full colour representation of the road sign

It's a simple program, but a highly use

#### DiskSalv 2

#### **Dynamic Designs** This is a very slick, very well presented,

utility, along the lines of a program we (which, needless to say, costs an arm and On the Amiga side, DiskSalv 2 is basi-

itself - meaning users of half-decent sized

utility, or bugged by one of the limitations

#### Contact addresses

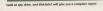
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Avenue, Wednesfield, Wolverhampton WV11 3AU

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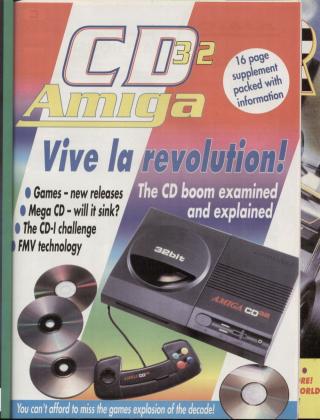
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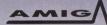
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first CD32 game to hit the shelves

# From disk to disc

With the arrival of CD32, the entire video games market is about to change for ever.

Amiga Computing takes a look at the future and the mouthwatering entertainment we can all expect from it

on years ago, the vast majority of computer gamers were loading their favourite games from domestic tape recorders and walting up to 15 minutes for the 64 or so of game data to rander to their machine's memory. Flogry disks and hard drives were around at the time, but they were mostly the preserver of much more expectally machines.

A disk drive for the C64 holding only 170k of data on 5.25in disks, and almost as slow as tape, cost 530 more than an A600 does today, and hard drives of more than 10Mb in capacity were considered to be huge.

Spectrum owners who bought Microdrives were astonished by the speed and flexibility of the device, which illustrates just how little we all expected.

With the advent of the Afari ST and the Amiga, we lesped from 8-bit to 16-bit, from

tape to floppy, and the modern home computer games market was born. Few had hard drives, and CD, never mind CD-ROM, was still on the drawing board.

In 1993 the next step on the evolutionary ladder is being taken by machines such as

CD-I, Mega CD, and the superb new CD32.

For owners of the new Amiga, floppy-based games with their slow loading times and multiple disk swaps will be nothing more than a fading memory, and the restrictions of the

storage medium will be blown away by the compact diec's 600Mb of space.
It is clear that although the technology built in to the CD32 is little different from the
A1200, its alliance of 32-bit power and the CD medium will result in a whole new generation of names.

Even more dramatic improvements are promised by full motion video (FMV) when Commodore release the Myeg add-on card between now and Christmas, though whether software houses will use FMV in actual games is a most point. What we can promise you is an explosion in garning quality, music videos on CD, and

feature films with full digital video and CD-quality sound which never get chewed up, never look like a srowstorm, and which do sway with the tracking button on VCRs. The games explosion may take sox morths or more — until the software houses really get their seeh into this new Amiga — but from the early signs and scronsshots we've seen and included in these papes, you'll apper that the faus has been well and thus!

Tevie

RE! ORLD

### CO REVOLUTION

If this year marketing suits and trend analysts across the leisure industry have been hitting the trail, profit forecasts in one hand and CD in the other, to preach the new faith to the press and the buying public.

new faith to the press and the buying public.

CD is on the verge of a second coming, they tell us, with record, film, and video games sectors about to meet in the middle for the biggest explosion in the leisure field.

since Space Invaders.

Cross-fertilisation is nothing new – games have always leeched off the film and music industry for ideas, sound-tracks, and movie licences. What is new this year is that for the first time, all three troes of entertainment are beginning.

to appear on the same medium and even the same disc.

The opportunities for cashing in are endiess, and it is this soent of treth mest which has set the tip toys in the expensive Italian suits to quivering with dollar-drugged exottement. New markets in the lessure field are hand to come by but this one still has the wrapping paper on.

come by, but this one still riss the wrapping page of.

Take the typical computer game movie the in as an
example. At present the marketing possibilities are good,
with extra publicity for both game and fillin, T-shirts,
posters, and stickers in the box, and PRI executives throing

# Slow starter Many observers at the birth of Video CD took delight in

predicting that the market was going to explode, but an initial burst of sales is unifixely. CDS will see huge sales because its garnes software will be superb, but if will be a long hard stop for straightforward Video CD players.

In the first year of commercially visible sudio CD, and around 20 000 rissers were cord in the LIK mostly.

In the first year of commercially visible audio CU, only around 20,000 players were sold in the UK, mostly to classical music buffs who were eager for compact disc's crystal clear sound quality. The first year of Video CD is likely to see a repeat of this sales curve.

Movie buffs with generous wallets have already shown that they will fork out impressive sums on 12 inch Laserdisc machines, a high-end expensive format which has seen a steady increase in support by way of the sort of out films which afcionados crave.

This section of the movie-watching community will be the first to jump on Video CD, closely followed by music fars to whom the digital rock video with perfect sound appeals.

Unformately, the rest of us will probably sick with our audin CDS and VCRs for a while, held back by the inertia of owning perhaps hundreds of pounds worth of movies on tape. This will last as long as it takes for the standard to grow until the benefits make it also good to pass up, and if high street shopes can other a service wineverty tapes are transferred to CD in the same vay a Kodisk shop will put snapshots on Photo-CD, the takeus rate oxid the hose.

Watch for a rapid boom around Christmas 1994 and a drop in the price of Video CD players once competition stiffens. With Philips, NEC, Sony and the stabattling for market share, the Video CD player will be as common in two years as the audio CD player has become today. it all until they drop. By next year, an extra dimension will have been added.

Imagine popping Steven Seagaf's latest blockbuster (in which he finally opers his eyes) into a CD32, watching five minutes of FMV video trailer, then browsing through a selection of Ham8 stills from the movie's action sequences hefore proceeding to the opens.

Imagine then a game involving huge chunks of action digitised directly from the movie, superb stereo movie soundrack, and featuring Mr Seegal himself (fully digitised of course) as the game's main proponent of bloody

Does this sound better than a box containing a poster, if set of stok-on Sosgal eyebrows, and a game with reip inch high sprises change each offer across 32-cdour platforms to the strain of yet another mind-clowingly baral sure? If not, you must be one of those people who insisted that test adventure would always be superior to those with morte propriets.

crude graphics.

If the scenarib sounds good from a consumer's point of view, take a minute to see things from the viewpoint of our salivating salesperson. 600Mb of disc space – 74 minutes of full motion video when using Mpsg – means ample room

We'll give people music on toenails and egg sbells if that's what they want

Jeff Clark-Meads, British Phonographic Industry working on their own CD players which, though not designed to play games, will be compatible with Video CD and which will beause Mog chips either as add-ons or as an interest facility.

an integral scorey.

In the near future it is hoped that Mpeg chips will come down in price enough to make them viable as standard technology on all such players.

At this notest the mass market for Video CD should be

confirmed and the big music and video companies should weigh in with their massive financial muscle. Garries on CD-POM will, if anything, be by far the smallest section of the new market. Ask yourself if the number of titles available on all home

Ask yousel in the number of this available on all nome computers cornec close to scratching the surface of the array of tapes, LPs, and videos on sale in thousands of high street shops, and your answer should point to the relative sizes of the markets.

Given the way fast games, movies and music should be.

# big bang

for advertising, 6998 competitions, catalogues, information services, and a host of other promotional material all on the same disc as the much more welcome film, game, and soundtrack.

soundtrack.

The notion of watching films and proper TV-style ads on a CD disc seems strange at the moment, but it won't be long before it is as accopted as watching a film playing off a piece of magnetic tape. One look at CD32 going through

its FMV paces will be enough to convince anyone.

Again, if Video CD takes off in the mass market, the breedom of fast forwarding through the first two episodes of Blackadder to reach your favourte will be replaced by simply jumping between tracks in exactly the same way as finale through an audio CD abum.

A luxury at first, this will soon become commonplace and the notion of using a VCR for viewing commercial movies will seem rather primitive.

A spokesman from Philips, main moving force behind CD-I, confirmed that a number of major manufacturers are As the music, video, and computer games industries rush towards each other at high speed, Stevie Kennedy looks at what the result

of the

collision might be



CD32 can connect to almost any monitor or TV

coming together in one big Video CD marketplace, the apportunities for profit are immense, a sure way of ensuring that the format really takes off.

With so much competition these days between the different ways in which we can spend our leisure time sales in most areas have suffered from the competition of completely different media. Music sales in particular have been hit by computer game sales, and if the music industry

can make a push in a new market it will certainly do so. A number of music videos are already slated for production in Video CD format, mostly live concerts including U2's Achtung Baby, and more are bound to follow. CD mastering costs are as little as 35o per disc when bulk duplication is used, and the cost per minute of digitising video footage in Mpeg format is steadily

Hollywood too is beginning to get steamed up around the collar by the possibilities of releasing films in a format which would never degrade (no more muffled soundtracks and white lines) and which would meet the buff's hunger for the best quality. Paramount studios, part

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#### Failing formats

Video CD is based around the Mpeg 1 protocols, agreed on paper a couple of years ago and now appearing in physical form as Moeg decoder chips.

The format sets out how video and audio signals will be compressed for storage on CD then decompressed as they are played, and has finally managed to gain enough support to Other competing formats have

of the MCA group which has a big interest in 3DO, have

spring to mind as formats which seemed to have a lot going for them but which died horrible commercial

deathe more expensive, even if of a higher quality than VHS, and DAT took a dive because it was overkill and much more expensive than CD. Finally, MSX failed because though cheap and well supported by Japanese elecfailed though so why should this one tronics companies, it was the technisucceed? Betamax videos. Digital cal equivalent of a dead dog.

Video CD will succeed because it

meets the main benchmarks for any new standard. Simply out, the technology on which it is based is available now and at a commercially viable

price, and it offers a format which provides good marketing opportunities. If a new gadget is reasonable value for money and does something nothing else can do, it will succeed. Of course, the final judgement will be down to you and me and whether we spend our hard-earned pennies on it. I know what I'm going to do - what

about you lot? about it and saving it for the launch of the FMV card. which now looks set for release in the second half of October Obviously when movie companies start to take

signed a deal already with Philips to produce movies on CD and they expect 30 to 50 titles to be available this side an interest, the smell of money becomes almost Commodore have their own movie link-up, but With such high-powered interest and the possibilities



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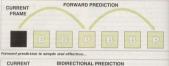


ata compression has always been one of the most important utilities on computer systems. with finite storage and limited memory, but it wasn't until recently that this standard procedure was applied to graphics in such a way as to improve

The first accepted standard was Joen, named after the Joint Photographic Experts Group which was formed by researchers in the fields of computers and photography to devise a common way of storing masses of data without killing picture quality. Joeg works by using complex mathematical methods to scan a graphic and encrypt it in such a way that information normally stored in, say, IFF or TIFF or GIF formats, is compressed into a much more economical and universally accepted form

Depending on the amount of compression used, picture quality once the Joeg is decoded can be virtually identical to the original even though the Jpeg file itself can be one tenth the size on disk. The only problem with Joens is that they take a lot of decoding, even on an A4000, and are suit-

able only for single image files. For animated images, particularly large digitised graphics, a new standard was required, and in May 1988 the Motion Picture Experts Group (Mpeg) was formed under the auspices of the International Standards Organisation (ISO). Starting with a set of proposals on paper which inviolved nothing more than complex algorithms, calcula-





but bidirectional prediction is much more efficient

# The whizz chips

tions, and formulae for encoding and decoding files, Mpeg. gradually gained acceptance from most of the big players in the market and the standard was born on 6 December, 1991 as ISO draft standard CD11172

Moed files can be created and played back on an accelerated Arniga, and shareware Mpeg player programs already exist to make viewing Mpeg movies possible, but the nature of the intense mathematics of decoding the files necessitated the production of specially designed chips whose sole purpose in life was to cope with this operation. The passage from drawing board to commercial Moeg decoder add-ons has been slow, but is now complete. In brief (Mpeg's precise technical format stretches to a

100-page book), an Moeg signal is a data stream consisting of two parts: A system stream which holds information about timing and so on, and a compression lawer which holds the compressed picture and audio data. An Moed decoding system therefore contains a number of chips. The first is a system decoder, which solits the picture.

audio, and timing information into three separate streams. Each of the picture and audio streams are then sent to their own decoding chips, and the timing information is applied to both as decompression takes place so, that the newly decoded data comes out in an intelligible video signal with the actors' voices coinciding with their lip movements. To compress the immense amounts of data being shoved out by a video in the first place, an Mosq encoder is

used to store the frames in a very clever fashion. However, arryone who has ever used DPaint to create an animation should be able to relate to the process The difference between one frame and another in any DPaint anim is usually fairly small, much smaller in terms of bytes than the amount of data in a full frame. It is therefore a lot easier to store the second frame as a representation of the differences between itself and the preceding frame.

In other words, frame two is stored as the computer equivalent of "same as last time except the bit in the top left hand corner just moved to its right". In DPaint, this is known as a Delta, whereas in Mpeg it is called a Predicted Picture.

These use Intra Pictures, pictures stored as complete

Mpeg has finally made it from drawing board to full production. Let's see what it is and why it is so important

frames, for reference when predicting what motion changes will have taken place by the time their turn comes to be shown. There is an I-Picture every half second to provide enough reference points for accurate prediction and to fill

Augmenting the I- and P-Pictures are the B-Pictures, or Bidirectional Pictures, which look forward and backward at the same time to previous and following frames in order to guess how they will have changed. Compressing down far smaller than any other type, there are two B-Pictures for every P-Picture and it is these which give Mpeg its excel-

An intelligent function of the Mpeg algorithm is to alter its compression method to suit the needs of a particular digitised sequence. If, for example, the sequence will be accessed randomly by the user - perhaps to enable the editing together of digital video footage to a target VCR the number of I-Pictures is set to two per second, and decreased when a piece of footage will never be accessed

For example, a rock video transferred to CD would not require many I-Pictures, but a library of computer animations might need to be accessed at almost any point. Mpeg provides flexibility for all occasions, and though Mpeg-2 is already on the drawing board, like the now very old VHS format it is highly unlikely that Mpeg 1 will be bypassed as an industry standard for many years to come.



This is how a basic Meg.decoder system links up

.

y the time of its release, the Amigs 1200 had only its price tag to offer as a surprise. Most of us were menated for a £499 launch, so £399. was a pleasant surprise and guaranteed an

CD32, on the other hand, was kept much more under wraps by Commodore, the sparcity of one-launch information made all the more unusual because several games compa-

The result was that a collection of duff rumours and speculation kept us all quessing more or less until launch day. Magazines printed "best guess" stories about the machine's specs and produced artist's impressions with widely varying degrees of accuracy, and rumours that the machine might have a 68030 or even Mpeg chips built in

were rife Through all of this. Commodore kept more or less silent. presumably because they didn't want speculation about specfications and price points to spoil the party when their latest

debutante finally came out. The strategy was a success, and only the muted disappointment that CD32's price was more than the hoped-for £250 marred an otherwise perfect launch. A reaction which

Commodore could not have predicted was the grudging acceptance of the unit's vital statistics. Perhaps they thought that a 32-bit machine with 2Mb RAM, near 24-bit graphics, and a CD-ROM drive was good

enough for most people, but grumbles could still be heard emanating from some developers. Why? CD32 is based around a 32-bit 68EC020 chip running at 14MHz and delivering between three and five times the power

of a 68000 as found in the A500 and A600 With such a CPU, CD32 is easily the most powerful of the CD options on offer, and blows away both Mega CD and CD-I

However, games developers have complained that it still isn't powerful enough. Comparing the machine to the usual 486 PC games machine with CD-ROM drive, some have mumbled that CD32 will be unable to keep up in terms of speed with the faster PCs and that as a result some PC CD-

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ROM games will not be convertible. Significantly, most of the grumblers are those who have yet to produce for the format. Those who have had prototypes and have been coding furiously for months are very pleased

The AGA chip set gives game programmers the advantage of using dual playfield graphics for ultra smooth scrolling





is an adult arhanture In 256 alariaus

# What's in

and more colourful, and graphics speed is greater than on

In combination with 2Mb of 32-bit RAM and a 68020 these elements form a powerful partnership which should be

capable of handling just about anything thrown at it. AGA's so-called "4x" blitter, the chip responsible for transferring large blocks of graphic data from RAM to screen, can throw millions of bytes at the screen every second, making possible the smooth, fast gameplay we've

As the AGA chip set is only a year old, games programmers are still exploring the improvements which can be gained by coding specifically for it, and we are only now starting to see the benefits in the shape of enhanced A1200

versions of games In some cases, the 68EC020's lack of power in relation to the 486 will see some games run slower than their PC equivalents, but as most are programmed with the massive user base of 386 users in mind, there should be precious few of these

Given time to properly exploit the AGA chips and increasing experience with the possibilities of CD-ROM, companies which in the past have stretched the A500 to its limits will no doubt bring us a feast of superb games. Having seen the delights on offer from the first batch, we can only lick our collective lips at the thought of what will appear on our shelves next year

# the box?

CD32 is set to wow and amaze users with the quality of its games, but what makes the little chap tick?

#### Conversions galore

Though there is a long list of brand new games waiting to be released on CD, it many companies will simply convert old

value for money, but the only conversions which will take advantage of the machine's extra colours will be those which come over from the PC CD32 has an extra chip, called a

Massive storage space

means massive games

Planar chip, which is designed to access PC-style graphics from disc or memory, then convert them at lightning fast speed to Amiga graphics. In the PC world, a game which uses

texture mapping (see the landscapes on Falcon 3 for an example) or a great deal of shifting huge pseudo-sprites around (as in Wing Commander) stores its graphics in what is called byte-per-pixel

This otherwise inflexible system is a great advantage for games because it means each pixel is stored in memory as a single byte rather than as part of a multiple-bitplane image, which means it takes only one memory write to change its colour rather than the eight it would take for an 8-bit image (256 colours) on

In effect, this mean that games houses will be able to use exactly the same graphics on the Amiga and PC



Eubersoace full 30 perspective and scrolling

versions of a game, making it easy both develop new games for both machines

be seen in games like Dreamweb and Cyberspace, and it won't be long before games start to roll off the duplicating

Amiga ED32 Price: £299 Available: Now RAM- 2Mb Graphics: 256 from 16.4 000.535 8msH to noillim CPL: 14MHz 32-bit 68FCD2D FMV: Available late 1993. price TBA

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#### Please note: To operate the Mathematic Co-Processor with clock rates

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# Sonic sinks

Mega CD has the publicitu. the profile, and the user base. but has it oot the quality the

public demands?

# on



ince the phenomenal success of the Meca Drive, which has seen its sales in the UK climb towards one million, many industry figures have become mesmerised by the

oriental threat to other games machines. However, the sluggish sales of Mega CD and the poor quality of many of the games available for it have exposed

spells the end of the Sega invasion. Mega CD is, technologically, an old unit. Based on the chips, though the machine does have several advantages

over its cartridge-based brother A 64k RAM buffer for faster loading of data from disc and a 12.5MHz 68000 chip - twice as fast as the Mega Drive ensure that Mega CD games will run faster and smoother than those on the original Mega Drive, and it goes without saying that CD provides unique games opportunities

The most exciting new Mega CD title, Sewer Shark, makes extensive use of digitised footage for its intro sequences and packs a huge amount of game data onto

However, it has no more colours on screen than any standard Mega Drive game (64 from a palette of 512) and uses the same 8-bit PCM sound which, without reverb. sounds no better than the Amiga's output.

Mega CD does have the ability to play audio CDs and those in the CD+G (G for graphics) format, but it has no facility whereby FMV can be added, so owners will never be able to join in the Video CD boom or watch feature

In addition, the fact that Sega are being left behind on a

world-wide CD standard is a bad omen for the future Not all is bad news for Sega, though, as they at least have thousands of units in living rooms nationwide, and ample stocks in the high street to ensure an aggressive presence. The Sega TV advertising campaign has been

running all year and is expected to go into top gear for what must surely be 16-

If the package arrives with a couple of good CD games such as Sewer Shark, Mega CD might yet have a good Christmas and could yet steal some of the thunder from CD32 if Commodore's much superior machine is outshone in the PR department.

With the shift in technology going against Sega, the only weapon left to them is marketing muscle, a commod-

#### **BEST GAMES**

Commodore must cling to the hope that the British nublic aren't as studid as some marketing stuffed suits

In the end, as with the other two competing systems the final winner - in the short term at least - will be the

one with the best games, and the Sega is certainly out of In terms of price, Mega CD is rather expensive for a 16bit system, currently selling for £370 including the Mega Drive, or £270 without

This puts it at a distinct disadvantage to CD32, which can boast not only better technology, but a lower price tag. However, Sega's long established brand name is firmly games players, and it may take a while for such advan-

#### Mega CD games

Most of the Mega CD games released at the machine's launch were, predictably enough, fairly straightforward conversions from old Mega Drive games. However, as

The first to take real advantage of Mega CD was soundtrack gave Sega owners a taste of what CD could do for them and the game was a big hit. Other titles to appear on CD have been less impressive

> that it uses cartoon-style graphics in a Death animation on disc running under a Dragon's Lair

While not the most interactive of games, and restricted to cartoon graphics by Mega CD's poor graphics, Road Avenger is a definite



at least takes advantage of the CD's mass storage

Future releases show a much better line-up, with





## CD-I CHALLENGE



However, with a cheaper player unit and the backing of hin names like Sony and Philips, what looked at first like another adventurous turkey could turn out to be a strong contender in the new CD marketplace

With a user base of only about 25,000 in the UK. CD-I has a long way to go, but the software titles now being released promise much for the machine's future, and plans by its backers to invest heavily in Full Motion Video titles could result in more enthusiastic public

Initially released as a home entertainment system



Philips' latest CD-I plauer - the CDI210

## Big money backers much like CDTV, CD-I is based around a custom 68000 chip called the 68070, running at 16MHz, but still

chained to the 68000's 16-bit architecture. There are no real graphics co-processor chips such

as the Amiga's Alice and Lisa chips, and memory is only 1Mb as opposed to CD32's 2Mb.

Tech specs in the unit's favour are its support for Photo-CD, S-VHS output, and 256 colour screens from a 24-bit palette. These are, of course, all available on CD32 with the benefit of Ham8 for backdrops and static artwork, but their inclusion in the CD-I line-up means that there is less of a gap between this format as between CD32 and the lamentable Mega CD

In a side-by-side comparison, CD32's 32-bit processor, custom architecture and planar conversion chip give it a clear lead, but customers rarely have the benefit of such direct tests.

Of much more importance in the race for your wallet is the way in which a product is sold and how good its software support is. Ominously, Philips have a distinct edge in the first sales will be good for both Commodore and Philips.

area with a marketing push planned for Christmas which will centre around a hefty TV advertising campaign and which will feature FMV titles to best advantage.

It goes without saying that the CD-I marketing budget will outweigh that which Commodore can offer for CD32.

LEVEL FOOTING Software will be the key to success for both formats. and having seen the planned releases, it is likely that

With a new low price plauer and financial backing, CD-I could be CD32's biggest threat

Starting from a software base as poor as the dire rubbish which popped up on CDTV. CD-I will have to

## CD-I software

Titles due for imminent release on CD-I include Seventh Guest, the graphically superb adventure game which has wowed the PC world on CD-ROM, and Voyeur, described in the blurb as "the first interactive political thriller

Based in a mansion full of scheming twofaced politicians and their cohorts. Voveur, as its title suggests, involves the gamester in

peeking through doors and windows to capture on camcorder the wheelings, dealings, and plottings of the morally bankrupt cast By collecting enough information about the political conspiracy being hatched the player can elect either to inform the police when he or she believes the evidence

is irrefutable or use the recorded footage to warn another character about the backstabbing looming in the near future. Shot using live actors (Robert Culp is among them) and set against a 3D computer set using what the maker's describe as a revolutionary technique, Voyeur

will provide a visual feast. How its interactivity and gameplay shape up remains to be seen, but from the initial screenshots, this is clearly the sort of title which will generate enthusiasm and sell a few CD-I players. Other titles include 15 International Tennis Open, a far cry from the dross that was the original CD-I Golf game, and Zelda: The Wand of Gamelon, a more traditional PC-style graphical adventure.

Neither promises to forge into new gaming territory, but both are at least of a

quality which should hold its own against comparable CD32 games. Full Motion Video, to be added at a cost

of £150 when the CD-I Mpeg decoder is release in October, seems not to promise much in the way of garning support, and is far more likely to be used for the linear (non-interactive) Video CD format. Any title released on this format will, of course, run on an Mpeg-equipped CD32.

wonth Fuest

but the availability of music videos and feature films (Philips have a deal with Paramount to release movies on CD) in combination with games of the quality of Voveur and Seventh Guest will make CD-I a tempting buy, even if £100 more expensive



ORLD

# **CD32**

What good is a 32-bit machine without the software to support it? Over the next four pages Simon Clays and Jonathan Maddock take you on a inurney through preview heaven. Coming soon to a screen near you soon...

# ames

## Microcosm

## Psygnosis

If you want fancy graphics then look no further than Microcosm. It was first planned for release on the CDTV and opened most people's eyes, but then the machine didn't fare too well and so the project was shelved. The CD32 was then released and some clover person

at Psygnosis decided to restart work on Microcosm and it looks like being even better than before. The plot isn't too dismiliar to Fantastic Voyage and



Inner Space, A high corporate boss decides to his rival, so that both megacorporations. He is minaturised with a out to try and manipulate his brain. Your task is to be placed inside a super fighter, minaturised and injected into the boss' bloodstream where you can seek out and kill all the bad guys.

The graphics are just astoundingly good and are all ray-traced with 3D light-sourcing being used to create some amazing effects.

There are over 500Mb of graphic and sound data, a multiple frame rate of up to 60 frames/second, a maximum. of 32.768 colours and an original soundtrack by Rick

Just to prove how good the graphics are, Psygnosis are actually using in-game screenshots as the artwork for the box. Whether or not the game will forsake playability

## Zool Gremlin

for graphics we shall have to wait and see.

One of the biggest selling Amiga games is making its way to the CD32 and is destined to become a big hit. The original was a massive arcade adventure with

play, awesome graphics and fullscrolling.

One of the fastest platformers that you can buy. Zool is a

Ninja of the Nth Dimension who can jump,

punch, kick, shoot, spin, climb and do just about everything. The CD version won't be that much different from the recently released A1200

As well as the original six worlds, there is going to be a new world added with brand new graphics especially for the CD32. In addition to t his there will aslo be some spectacular 3D-rendered animation sequences and a complete CD

soundtrack. Zool 2 still hasn't been confirmed for the CD32, but there is a 99 per cent chance that you'll see it for Commodore's brand new machine

## Rise of the Robots

## Mirage

Billed as the ultimate combat game, Rise of the Robots will arrive this Christmas. Rise has been created using radical 3D modelling software producing high quality ray-traced graphic images that are more realistic, more animated and more controllable than ever

Each robot character is modelled element by element from the original blueprint designs and shaped to its exact dimensions. Once a robot's body parts are modelled Some of the more spectacular effects in Rise include the morphing of a liquid metal

robot and the shattering sequences when a robot is defeated. There are spectacular animation sequences throughout the game which will be as seamless as possible to give it more of the appearance and feel of a movie rather than

The player controls a cyborg in battles against five types of enemy robot as well as a super-intelligent robot known as the Supervisor. Each robot is governed by its own artif-

Rise of the Robots is being developed by Mirage's in-house programming team. Instinct Design. The team, which is headed up by ex-Bitmap Brother Sean Griffiths, was formed in 1992 with a brief to develop high quality products that stretch the technical capabilities of the new CD machines.





## Magic Carpet Bullfrog

Magic Carpet is very similar to Creation in a number of ways. You are placed on a magic carpet flying over a texture-mapped 3D landscape. While flying you meet all sorts of monsters and dragons which you have to shoot.

The game is very in the style of Space Harrier, but graphice-wise is at least 100 times better. The technology used in Magic Carpet has also been used to create things like flight simulators, but Bullfrog decided against a product of this type and made a game that will be accessible to everyone.



## The Lotus Trilogy Gremlin

If you were to name the best aroade racing game, then the name leaving your lips would be Lotus. The original Lotus and Gremlin deal was signed way back in June

Lettus and Gremiin deal was signed way back in June 1990. The first game, Lettus Esprit Turbo Challenge, shipped later that year to huge critical acclaim across Europe, including the title of Arcade Game of the Year. It went on

to acheive classic status, clocking up sales in excess of 100,000 units.

The sequels followed on in yearly intervals and introduced new Lotus cars and game features, including RECS, the revolutionary course designer system. Both tiles met with similer success and the third installment.



went on to become one of Gremlin's top-selling games of

One of the best points of CD is the ability to hold so much more data than its disk counterpart. This enabled General no place all these Loss genes together on an CD. The games won't take advantage of the CD32's capabilities, but the introduction of a lick of paint (256 colours') and mappe a CD-quality soundtrack might be a good idea for General to implement. The Lotus fislogy should arrive on the stop shalves in Neverther.

## Inferno

## Ocean

Digital Image Design's tie-up with Ocean will see the release of Inferno on the CD32. For those of you who remember Epic, Inferno was originally billed as the sequel. The problem with Epic was that it just didn't live up to its name. If ever the game-buying public were sucked into

the vacuous black hole of the hype machine, it was by Epic. However, Infetto has certainly not been dogged by the same problems as Epic was assumed to have suffered.



Ocean are adamant that inferno has not been rushed or left incomplete.

left incomplete.

Ninety years after Epic's setting, Inferno stars you as a top pilot battling over forces of good and evil. The evil

forces in this case are a group of nasty aliens who are interested in your skills.

The action will take place over seven planets and three moans. but you have the freedom to explore the depths of



the universe. In total there are 130 missions to clip your wing-tips in.

Inferno has some of the sharpest 3D graphics yet seen on a console, with extremely smooth presentation of the 3D images, Inferno also features a full CD-quality soundtrack recorded by Goth belifty-rockers Alien

Also contained in the package will be a graphic novel designed by top Judge Dredd artist Sean Phillips. Ocean believe this will help set the scene and also add extra



## James Pond 3

## Millennium

Milennium's next release after the truly excellent Diggers will be the third instalment in the James Pond series of gemes. Once again our fishy chun is on the trail of the evil Dr Maybe. Operation Starfish is going to surprise a lot of people and will especially

The graphics are bigger and better – it's quite possibly the fastest platformer I have seen so far. The CD32 version of the game will features some tremendous cartoony graphics and an excellent jazzy

James Pond 2, which was recently released on the A1200, will also be transferred to the C032 with a few tweaks in the graphics and sound departments.



depth and a stronger element of believability.

Overall inferno looks set to create quite a stir with its cinematic feet, large slick detailed polygons and in-depth level of play.

## Creation Bullfrog

Creation is a major departure for Bullfrog. Steering cleverly away from their collection of isometric 3D games such as Populous and Syndicate, Creation uses a first-person perspective with absolubly amazing graphics.

The game is set underwater and uses a fractal generated aquatic landscape complete with texture-mapped 30 to create a realistic feel of depth. This mapping is all down to the CD32's planar chip which means all the stuff that can be done on a PC can be just as easily done on

Commodore's new machine.

The idea for the game came from Bullfrog supremo
Peter Molyneux when he went scuba diving. With

>

Builfrog's games you seem to stand back from the world you're in, but with Creation you're actually part of the environment and not to owim arrand with the fish!

## Theme Park Bullfrog

Theme Park is aimed at anyone who ever dreamed of owning or running their own amusement park. Cutesy, it may be, but it's also a business simulator. Theme Park

returns to Bullrog's oil satage of the isometric 3D game. The opion to build the tiggest rollerosaser in the world and charge people nothing to go it is possible, but with a few days good go belonity. As set as the roller-coaste. Them Park offers the posteries at busined frouze that the product of the pr

## on to the CD. If it d

Sonic Zool and Mario.

Body Blows 2

Team 17

Yet another sequel in the offing for the CD machine.
Details of this one are even skatchier, but it is scheduled.

for release in the early part of next year.

The A1200 version is still in the initial design stages, but you can expect the CD32 version to be similar with detailed backfross, fast and smooth animation and terrific.

esaled backgrops, tast and smooth animation and letnic D sound effects.

This and Alien Breed 2 are definites for the CD32 but



Soccer Kid

Krisalis

Reviewed in the last issue of Amiga Computing, the 94 per cent Gamer Gold-rated Soccer Kild is also

making the transistion to Commodore's new console

beater. In terms of gameplay there will be hardly any

difference - it will be virtually identical to the standard

the graphics and give it a 256-colour lick of paint.

extra country (Brazil) which was left out of the floopy

release, to play around in. Another major feature for

## the C032 is the five minutes of broadcast-quality animation at the beginning of the game. A Japanese company has been working on the introduction animation and it will be unlike anything



## Oscar

## Flair Software

Trols was perhaps one of the most underrated garnes of last year and despite getting rave reviews from the press, it distrit set termendously well.

Figure out their haust societies to wonder why their ace little platformer hadn't sold by the bucketicad and as they

Fiair put their heads together to wonder why their ace little platforms hadn't sold by the bucketoad and as they were about to start work on Troils 2 they thought they dibetter find out.

Apparently it was nothing to do with the quality of the game, but because Troils was perceived to be a ciril's game.

Apparently it was nothing to do with the quality of the game, but because Trolls was perceived to be a girl's game. As 90 per cent of the games market were male, Flair thought they'd better ditch the Trolls idea. The Flair team went teack to drawing board and came back with Oscar. The game starts at Oscar's local multiples

The Fair Heam evert dock to drawing board and came back with usbar. The game stars at obser's sceni mapper, crimena where by some strange later Oscar is drawn into the different movies. Cartbook Superword, Mild Weller Capers, Game Show Bonanza, World War 3, The Homor Channel, Sol-Fil Encounter and, alrem, jurassic Prants are the films in question.

As Oscar ventures between levels he must collect ministure versions of the "real" Oscars in order to progress. To fit the game on the A1200 was a difficult task with the parel; the background and the foreground in 32 occurs and the sprite in 16 colours. This created horrendous memory obstacles, but for the C032 this won't be an

issue. The CDS2 version will feature general improvements which will affect sound and graphic with digitated sequences for the front end. The general garneplay will be unchanged because Flar feel that if it is a good as it can be. Occar could well become a serious challenger to



on to the CD. If it does happen you can expect enhanced graphics and sound in both games, but the software house can't confirm anything as yet.

## TFX

## Ocean

TFX or Tactical Fighter experiment puts you in the hot seat of some of the world's leading jet fighters. You are set to play a top pilor with the LN rapid-response airdorce. It is set over eight theatres of war including Africa, Europe. South America. South East Asia and of course

the Middle East.
Your judgement will not only sort out serial threats from hostile nations, but will also diffuse delicate political

Involving over 200 multiple objective missions, you also have the envisible task of selecting from jets such as the European Fighter aircraft, the F22 or the devastating F-117A Steath fighter.

F-117A Steath fighter. TFX utilises full Ordinance Survey maps and covers seven million kilometres of play area. All of these are liter-

## ally covered with hills, roads, towns and installations all in beautiful 3D polyoon sciendour.

TFX is another product to come from the minds of DID (Digital Image Design), the team who brought you P-29 retailator. Judging from the standard of early demo sequences, TFX looks to be rather special to say the least. The 3D engine is the same as used in Inferno and [satures a combination of oplivoors and

testure mapping.

Apart from locking splendid visually. TFX retains a strong element of the true flight simulator, so these are no tearcy gimmicks or flight patterns that the real McCoy cannot perform.

TFX is nearing completion and looks set send a sidewinder into the belly of all criter flight sims.

# TFX is nearing completion and looks set send a sewinder into the belly of all other flight sims. Sieenwalker

## Осеап

After the success of the original Steepwalker for Comic Relief SS there followed a variety improved A1200 version. The somnambulist in question is Lee. Fortunately he has a canine carer in the shape of Ralph. He takes ca

A first rate combination of platform capers and tomfoolery, Sleepwalker is both playable and amusing. The CD version will be to all informs and purposes the same as the A1200 which improved the sound and graphics.







## Pinball **Fantasies**

21st Centuru

Most Amiga owners will have found it a difficult task to avoid the computer press's response to Pinball Fantasies. Basically it received rave reviews with most folk confessing it was the most realistic pinball simulation

ever to light up the tube on a monitor. What you got for your money were four tables of fast scrolling, high speed flipper frolics and a true feeling that this was the closest a silicon machine could replicate a

As they say that was then, but this is now because the CD32 version is about to bounce around your screen. The main difference of course, will be graphical. Most people thought that the original version looked sweet, but

to see it resplendent with 256 colours is quite awesome. The soundtrack has had a total re-working. A whole new set of tunes have been recorded, taking complete advantage of the CD qualities the console possesses. the sound effects that come to you in four-channel stereo

all in

dig to

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and

tilt Pinball Fantasies closer to the realms of reality treatment. More exiting than this, though, is work is multi-ball feature and a whole set of new tricks and

## Liberation -Captive 2

Mindscape Following 1990's classic award-winning Captive comes

the sequel Liberation. The original was set on an offworld penal colony, with you battling it out against all Liberation brings us back down to Earth in a tale of

power, corruption and lies. Set in the 29th Century, you play Trill, a prisoner of conscience and an exile from Earth. This doesn't seem such a bad thing as the mighty BioCorp are bleeding the planet dry, stopping at nothing in their lust for profit

When the corporation droids malfunction they turn killer. Instead of de-activating these droids, though, the company is blaming innocent people for the murders You control four of your own droids through their own windows on-screen, sending them on separate missions to exercise justice

Liberation is hupe to say the least and contains some missions. It's not just an action adventure either, as contained in the play will be a high number of challenging

The significant aspect as far as the CD32 is concerned developed. It uses high resolution images in combination with fast moving vectors. Liberation also contains some

## Alien Breed 2

Team 17

The much-awaited sequel to Alien Breed will be Team 17's first release for the CD32. Released early next war. will feature enhanced prachics and an impressive CD

## **Syndicate**

Bullfron

Following the release of the CD32, Bullfrog decided to shelve their A1200 version and concentrate on a version

The main reason for this was that the programmers found that the extra graphics and colours they'd hoped to implement on the floopy-driven machine slowed the play down to levels beyond belief

However, the CD32 with its hi-tech bytes-to-bitplanes has enabled them to add the kind of features desired with-

In the original version you were in charge of a group of



domination the ultimate goal. The CD version should include such delights that the chart topping original could never aspire to. For example, you will be able to rotate the 3D perspective to see behind buildings and other objects. Plus any building your agents enter will now be able to be viewed as a cut-out to add an extra dimension to play.

Other things which are set for release as data disks for the original version are to be included on the 32 version. These will be things such as a new range of weapons plus the ability to disguise your agents as civilians

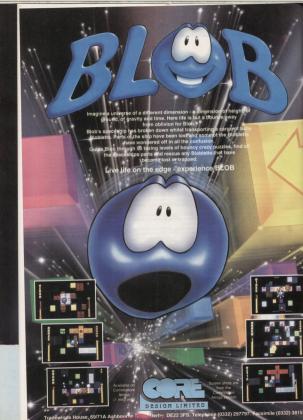
With enhanced graphics using the planar chip which is product to take Commodore's new baby by storm for

## Software frenzy!

A list of CD32 software either on its way or about to go into development. but don't quate me on that!

me on thete
1869Flair Software
Adventures in TimeFlair Software
AMralce
Alfred Chicken Mindscape
Alien Breed 2
Amiga CD FootbellPlattsoft
817 Flying Fortress Microprose
Battlestorm
Body Blows 2Team 17
BiosphereBectronic Arts
Burning Rubber
Chaos Engine
CivilizationMicroprose
Creation
Diggers Millennium
Dracula
GenesisRair Software
Grand Prix Microprose
Gunstép 2000Microprose
Inferno
James Pond 3Millennium
Jurassic Park
Lennings
Liberation: Captive 2Mindscape
LionheartThalion
Littl Divil
The Lotus TrilogyGrendin
Magic Carpet
Man United Premier League ChampionsKrisalis
MicrocosmPsygnosis
Mortal KombatVirgin
Nick Foldo's Golf
No Second PrizeThelian
OscarFlair Software
Pinball Fantasies21st Century Entertainment
Pinball Illusions21st Century Entertainment
PrehistorikTitus
Project XTeam 17
Putty System 3
Putty 2
Rise of the Robots
Robocod Millennium Ruff 'o' Tumble Renegade
Ryder Cup GolfOcean
Sabre Teem Srisalis Sensible Soccer Renegade
Sleepwalker
Superfrog Team 17 Surf Minjas Flair Software
Syndicate Bectronic Arts TFX Ocean
Theme Park Buffrog Uridium 2 Receptate
Uridium 2

RE! ORLD





PLAN REVIEWS... BLOB . HIRED GUNS . A320 AIRBUS USA DOGFIGHT . THOMAS THE TANK ENGINE 2 AND MUCH MORE! ALSO... WAR IN THE GULF CHEAT MODE • LATEST NEWS FROM THE WORLD

OF AMIGA GAMES O ON THE DRAWING BOARD: CYBERSPACE, DISPOSABLE

HERO, PREMIER MANAGER 2 AND SECOND SAMURAI

## A rippin' tale

unes, likely per and ink artists have been issueed to draw reconstructions of the own locations and to conclosions and to cerela portion of destructive residents that lived there. In the control per and the program you and discovers of different solution to the control per and the program you and discovers of different solution to the control per and the control p

ck the Ripper is full of hard evi



In ya face. We is doin' dis funky news thang. You know what I'm sayin' (err, no - puzzled readers). Respect!

## I hate those meeces to pieces!

Everybody's cartoon favourites Huckleberry Hound and Pixie and Divise are about to star, for the first time, in their very own home computer games.

UK publisher Alternative Software - already famous for their wide range of children's programs and arcade favourities such as Dalek Attack - are soon to release two home computer games featuring the famous Hanna Barbera characters at the law price of £9.99. Huckleberry Hound takes centre-stage in Hallywood Capers, a colourful and highly entertaining platform game, while Mr Jinx still hates

includes a bouncy cartoon-style soundfavourite ingredients such as hidden

rooms, sub games and pick ups. Both games are specially designed ten-year-old age range (ideal for expect a review very soon.

It will also be one of the first to be dumpy box, a style that offers



## Where's Debbie McGhee?

Empire are out and about on the arcade front with Magic Boy. It features a massive 96 levels split between 64 main and 32 hidden levels of superb colourful arcade action that make all other games look black and white by comparison. You play the part of Hewlett, a young naive and

hopelessly accident-prone apprentice wizard who, while his master is away, has inadvertently released a large number of monsters. You must guide Hewlett in search of the

monsters and return them to their cages before the master wizard returns. This is not quite as easy as it sounds because some of the monsters will attempt to work their own magic and use curningly intelligent strategies to dodge Hewlett and escape

being cought Empire's platformer will feature four-track sampled music and sound effects. There are four different graphic styles which are wonderfully presented on a parallex scrolling background.





## Are you ready to fly?

Digital Integration have just announced the release of an

David Punshon was commissioned by Digital Integration to provide the music for the game, and Dominic King is a prolific songwriter who has written music for the likes of Roger Daltry (ahem) and Carly Simon (ah dear) to name just two, and sound

Hits included on the album are Storm by Hollywood Nights, We Can Fly By, err Fly and Are You Ready to Fly by Rozalla.

## The house of 'paign

Compaign was a highly successful, incredibly detailed simulation of land-based worker in World War II. Well it's back! The witth titled Compaign 2 is bigger, better and quite simply the military simulation

he gave. We should be given by the property of the property o

I's emerged as the most comprehensive simulation running an army as viewed from all levels, second bout of campaigning will begin in Octobe

## Call the quack!

Everybody's favourite eag is back! Codemasters are not content with selling over 3 million Dizzy games across every format there is, but have decided to release yet another Dizzy adventure. Fantastic Dizzy is billed as a huge cartoon game with an arcade feel bursting with adventure sce-

To top it all off, the Wizard is holding Dizzy's gightiend captive in his mystic castle in the clouds. Dizzy has to rescue his woman (well, err eag that is), defeat Wizard Zaks, restore his homeland back to haw it was and do his weekly shapping at Gateway before they shut. Fantastic Dizzy is jam-packed with puzzles to solve. Some problems require the collection of useful

objects before the solution becomes clear, and others rely on the player's skill and agility Codemosters have already had success with Fantastic Dizzy on the NES where it went to number one in the Gallup chart. The egg that everyone loves will put in an fantastic appearance on the Amiga



Cartoon capers with a strong adventure influence

## It's rally time again

Europress Software is about to launch the latest generation of virtual reality car racing games. Five years ago Europress Software, then under the moniker of Mandarin, made history with Lombard RAC Rally, the first roller coaster-type driving game. It was a massive seller at full price and a chart topper when it was later released on Ocean's Hit Squad budget lebel.

Now Europress Software have once more tearned up with the RAC to create a faithful representation of this year's four-day rally which starts on the November 21. It features digitised video graphics of the route, taking in real racetracks, bleak hills moor land and snowy Welsh forests. Gamers can test their rally skills while seated behind the wheel of a fully modified Ford Escort Cosworth, Tayota Celica and Subaru Imprezza

Project Manager Richard Vanner travelled around the country filming various special stages along the route. The footoge has resulted in different road textures like gravel, tarmac and mud being accurately reproduced, together with roadside features like trees, log, actual rally road signs, marshalls and of course spectators. The effect of these digitised graphics is startling and really has to be seen to be believed.

Rally will be launched in November for the Amiga. The game will be 1Mb and compatible with all Amigas, but only A1200 and A4000 owners will be able to take advantage of the special 256colour mode

## It's meaty, beaty, big 'n bouncy

## REVIEWS • REVIEWS • REVIEWS

Dogfight

Forty different ways to go down in flames with the latest aerial cracker as 80 years of death and destruction pack themselves onto a couple of floppies

Thomas the Tank Engine 2 Chuffingly good fun with the cute little steamer for all those kids and

F17 Challenge Manic motorised mayhem across the Grand Prix world. Team 17's

train spotters amona us

winning streak goes into sixth gear 124

A320 Airbus USA

Flight plans, sick bags, terrified passengers, nuns with guitars, and .. er ... lots of flat groundy stuff for you to navigate around

Or should that be amorphous free floating self repeating phantasm. Doctor Venkler? Bounce a blob for Britain

Hirad Guns

No, not cowboys, but pest exterminators in the shape of four tooledup hombres with an eye to fry some aliens

## REGULARS • REGULARS • REGULARS

**Drawing Board 1: Cyberspace** 

Enter a dark, ominous, sprawling future world of drugs and violence, and it's not even set in Los Angles

Drawing Board 2: Disposable Hero

Take a refreshing new look at the good old horizontal shoot-em-up with Gremlin's latest frenzy session

Drawing Board 3: Premier Manager 2 133 Updated, though still without the Venables vs Sugar prize fight

option (damn!), the superb footie management game just got better Drawing Board 4: Second Samurai 134

Oriental platform bashing, complete with flashy katanas

Cheat Mode: War in the Gulf

Hints and tips on using modern technology to cause the greatest amount of destruction in the shortest possible time and from the safest possible distance

126

128

130

136

Ever fancied playing Quantum Leap with 80 years of flight technology? Well, now's your chance to take part in the noble art of the Dogfight



beloved Sopworth and waits for the crackle of the flying helmet in place, scarf flowing and mous-

## The dirty dozen

me: Sincle seat bi-clone fighter, excert and light bomber

Notes: A fearsome fighter in its day with great turning finesse



## ype: Single seat, single engine fixed wing fighter

enformance: 570kmh/34,450h celling Jeapons: Two wing mounted 20mm MGFF connon and two

312in engine mounted machine gurs Nates: Hoving filled a multi role in the Spanish Civil War, the



## Il Supermarine Spitfire

se: Single seat, single engine fixed wing fighter opens: Eight wing mounted .303 machine guns, each







## sec Single sept Violane Fighter

he Fokker DR1

eccurpm Mess: The Red Barans' favourite plane, it has great manaeu;











combat plane. I myself have been responsible for a 1916 it is capable of 170km/h and can dimb to

tening metallic dart booms past his wooden fiving

bloomin' Fokkers... Don't say El Barony is in that

something that stops him in his tracks.

But before he can finish this rather premature missile have staked into the rump of Sounky's illbecotten fuseloge.



Type: Twin seat all-weather interceptor Performence: 1,500km/60,000 tailing Weappes: One 200km/Vijlicen sin-barnel machine gun. Four belly mounted AIM-7 Sporrow air to air missiles. Four recken. Four AGM Moverick ground-to-air missiles.

Nates: Following the hysteria generated by the Mig-1.5 (norms thes retroving the hydrona generated by the might of promise US policy) the F-4 was introduced. Undergoing a variety of changes it gove Soviet pilots a hell of a shock in Vietnam, and even now refuses to refire from active service.



Type: Single-seat multi-role fighter bomber type: Surger-sed multi-rela tighter bomber Performance: 2,350kmh/con reach 36,000fr in three minutes Weapons: Two 30mm 5-52 cannon. One Matra 8,530 Radar/homing AAM. Two R550 Magic AAM, 18/36 Matra

ns ra rockes!

Notes: The Mirage in all its forms is without a doubt one of the most successful fighters since WWII, It was the first to reach Mach 2 in level flight yer cost remarkably little to manufac-



rigmence: 2070kmh/59,050fr ceiling

Performence: 2070km/i 59 (2010 caling) Weopons: One 30mm under belly connon. Two/four K-13 Atall air-to-air missiles. Two/four AATO air-to-air missiles. Nates: Frequent apparent of the Phontom, the MiG-21 has a Mach 2 agaptality and way an excellent combact discraft. It is



## General Dynamics F-16A Fighting Falcon

Type: Single sect Eighter bomber Performance: 2,070km1/60,000th ceiling Weapons: One 20mm M-61 multi-bornel machine gun. Four AIM-9 sidewinders. Four AGM-65 Moverick missles. 18

Mk4 FFAR Rockets



## British Aerospace Sea Harrier FRS1

Type: Single seat ship based multi-role V/STOL fighter/bamber Performance: 1,586kmh/over 50,000fi ceiling Weeppres: Puin 30nm Aden connon in rentral packs, Two/four AIM-9 Sidevinders: 18/36 SNEB 68 nackets

Notes: Developed in a time when it was anticipated that one of care of this problem. Although much slower than most of its managyrobility. This fact was proven in the Falklands when it was used to great effect against the underrated



ypec Single seat all weather interceptor Performance: 2,445kmh/55,000f ceiling
Weapons: One 23mm twin barrel mochine gun. Two/Fo

Notes: During the '60s most Air Forces come to the conclusion that the multi-role aircraft was the way forward. The US unveiled the F-111 with its variable geometry wings, however due to financial and design problems the F-111 was never the success it was intended to be.



## A pilot's tale





no silly Spunky! that's not





A direct hit! Chuck looks on as Spunky spirals into a nose dive



By mother simulator soon - after all, he is only a

## INTO ACTION

In Doglight you are presented with three main

IR made. This cation allows you to engage in times. This means you can pit your wits against a MiG-21 from the 50s in a World War II Spiffire.

The other option for you to scratch



## Let's have a sit in yer cockpi



your chin over is where an earth you are going to

option which is actually the very core of Dogfight.

deciding what type of mission to embark upon coast defending our shores from the might of the German Luttwatte? Conversely you may prefer the deep in the Korean jungle.

## CREAT BANGE

Overall it's very hard not to be impressed with Doglight. It's absolutely huge in proportions and With the number of missions to choose from and the variety of scenarios to enjoy. I'm not sure whether you'll ever need another flying

Graphically Doglight is good. The planes have quite a lot of detail about them and even feature I noticed was in the around detail, but on the whole this does not affect Doalight's playability. On the whole the planes move accurately as united expect them to As usual with MicroProse

> Take a quantum leap back in time and

chappie the Red Baron

become that butch

VISION 00000000

> AUDIO DIFFICULT 9000000 LASTABILITY

ing flight of foncy fo aces all over the world, Slick grophic coupled up with immense gan

will make this a must for combat fying addicts Publisher ➤ Microprose oer > In-H Price > \$34.99 tall > Yes Size > 1 meg

A Harrier cruises over a blue zig-zaggy bit

For one you get more enough external angles and

smooth and give an impression of flight.

you wifer up blindness and the screen goes white tion screen, the normal phone book size manual and a modern link up for head to heads, and you've quite a lot of simulator.

that make Doofiaht that little bit sweeter to play.

short-cuts MicroProse have taken to make it more

For example, the majority of jets have different head-up displays: for ease of use these have been Right simulator that's full to the brim with excite-

ment and action, then Doglight's definitely the one Simon Clays



The start of the race and Thomas is nitted against the extraordinary talents of Bertie the Res who. unlike his real-life counterparts, is on time



around the stanes and is about to noom into lead when that last letter

e me if I boost and be self-indulated Chuffing good race for a couple of paragraphs, but there are number of loves in my life and one of those which applies to this review is children's

If I could sit at home all day and watch kid's TV from the careful I would become the happiest man on Earth Postman Pat, Bertha, Fireman Sam, Dangermouse Portland Bill, Sesame Street, Rugrats, Scooby Doo, The Flintstones... just a selection of my favourite Software, Ringo

'em up fun arrives in your local station hand of Alternative

overheard the commotion and decided to put a stop to it at once. He shouted to the graymentative Engines "We'll soon see who is the fastest. I will hold a racing competition and keep times with my packet watch, then we'll know who is the best.

The two feisty trains began revving their engines in This dear reader is where you come in: the outcome of the race is all down to your skills as a

The option of racing against the computer or a

hasically all there is to know about Thomas 2 because it is an incredibly basic game. That's a good point though because it's easy to play and a really and truly enjoyed playing Alternative's

The graphics are impressive with brilliant reproductions of Thomas and all his chums. Soundwise there is an accurate rendition of the theme music from the TV show and plenty of sound effects throughout

Thomas 2 sounds and looks terrific. It's highly playable and is great fun. It's very hard to knock Alternative's latest, but I'm in a bit of a awandary. I could give it anything between 70 and 90 per

If you're aged between three and eight then you're going to love it, but if you're alder you won't find much to keep you going because it is so basic, although the two-player made is strangely addictive if you've got an insone friend to play it

Technically it's brilliant, but it isn't aging to appeal to everyone. As it is specifically aimed at the younger market I'm going to give it 90 per cent. Remember it is only £9.99 and you do get

JONATHAN MADDOCK

Thomas the Tank Engine is a whole different Starr not included! kettle of fish. If it was an and I wasn't doing any thing then I'd watch it, but within a couple of min

was a major mistake, and for some bizarre re it always seemed to be aimed at upper class kid-

Before, you carry on reading I must point out that this particular product is part of Alternative Software's Children's Range and is aimed at kids aged between 3 and 8. More mature readers can now turn the page, but inter ested parents and those who still behave like chil dren should read on The story behind the game is a tale of unbri

dies. Oh well, such is life!

ıys

Just my luck this month then to get a game about the only children's favourite that don't particularly like. For starters, It the narrator, which

ded macho boosting and bragging. The issue all started when Thomas entered into the station and feeling fairly happy and confident utered the immortal words: "I'm a really useful

That constitutes brogging where I come from

have a couple of chums to play against. You are

and Gordon - the Large Green Engine - also naticed this and challenged Thomas. "Oh ves" puffed Gordon in a very sorcastic tone, "But I bet This started a major argument which was lit-

tered with obscene and offensive comments swing ing to and fro between each engine. Bertie the Bus

just loughed at the two, but the Fat Controller The Fat Controller gives Gordon a ticking off for going through a signal when he wasn't meant to. Naughty engine!

presented with a horizontally split screen which scrolls from left to right. The first one past the fin atherwise the Fat Controller will make you wait while he tells you off If you crash into obstructions and other

engines you will waste a few seconds of precious time. You'll also lose time if you travel down dead ends and you'll also sacrifice some water which slowly runs out as you progress through the If you run out of water you will lose the race, so

filling up is one of your main priorities. There are several water pumps where you can stop to fill up Your water gauge will show

warns you when you are get ting low by flashing. In each race, there is a bonus stage in the form of a short-cut that will only let one player through lights at the entrance to the bonus stage will be allowed to

The bonus stope is comple ed by collecting the five letters that spell the word "Bonus" Once finished the player will re-join the race some distance



oper > In ho

Price > \$9.99

James stops at a water pump for a quick fill up and takes time to admire the beautiful countryside



















acing games seem to get pumped into the face of the buying public these days like so much exhaust emission pouring into the othersorbers.

most the comcopere.

Everybedy parades around thinking that
another one won't hurt, when really we've
almost reached complete soturation point. Let's
meander down the metaphorical track of the
fred Formula 1 licence for a moment. Look how
many lifes are currently racing for contention for
the pole position of number one motor racing

experience.

Vroom, F-1 Grand Prix and Super Monoco GP are just five of the relative oldies to grace the grid. Agreed they're to all intent and purposes classics, but weren't they enough to put the rival factions off?

It seems not, because just recently a pack of new titles have weaved their turbo-charged selves onto your shelves. Mr whinging Brummy himself, Nigel Mansell, took time out from mak-

ing even more loot to lead his name to a Forende I file.
Then there's Descript File his has

behalf is the official backing of the F.I.A. which should give it some extra revs.

With the big names and licences being banded around you wouldn't think there'd be much space on the track for another competitor.

ASTONISHMENT

So when another Formula 1-style title screeched its way into the office, it was greeted with both astorishment and a certain amount of contempt.

However, when I noticed the Team 17 logo emblazoned on the bottom of the box my heart became filled with sunshine. Could the compary that wowed us with the likes of Project X, Superfrog, Alien Bead and most recently Body

Blows do it again?

Well what with the recession and all the, company refused to buy me a sexy Meribaro racing seit, so reluctantly I stretched into my undersized Admiral trackly bottoms, slipped on my oven aloves, strapped up my colonder and set out to

road-test Team 17's new life.
First query is why the devil is it called F17 and not F1 like all the others? Well, it's apparently because FUII and the F1A have decided to get marrily about people using words like F1 or Group Pvic. New thetr was ranked onen that



Always the same - go out anywhere on a Sunday and you get stuck behind some senile fool in a Williams Honda



Here's the menu. For starters you might fancy a little sautéed options, washed down with a fruity practice, followed by the full championski

little piston rad, let's find out about the nuts and bolts of Challenge. Remarkably enough, 17 puts you in control of one of four racing cars over all of the world's toughest circuits. The ultimate aim, like all racers, is to become the world champ.

That, to all intents and purposes, is that; most racers follow the same recipe, because that's what the likes of our Doman do for a living. So there are no real surprises on that front. However, and I am jumping the green light

here a little, but things need saving now, before you condemn F17 as "just another racer". For one it's brilliant, and secondly it only costs the best port of £131

When most products float around the £25 to £40 mark, you are guaranteed a quality product for just a fraction of the cost. In terms of its fea-

## Things that make you go Brrmmm

This is a nice little runner, powe

ful engine, very fast in a straight line and a lovely red paint job

Very reliable red and white stallion which reaches its best even

get the



A beefy rascal with a big throbber under the bonnet, granting it a strong structure for difficult tracks

A demon of a racer! A fast car for a

fast type of dude



tures. F17 holds its own against its more costly competitors from the same stable. Choice of car,

varying levels of ability from rookie through to

pro and interchangeable control systems are just

more decisions to make. You can opt for practice laps or play arcade-style three-lap races which

challenge you to finish in the top six to qualify for

the next circuit. Alternatively you can take part in

qualifying to determine your place on the grid in

other mean machines affects your performance.

There's also wet weather to contend with, and damage inflicted on your car by driver error or

A nice touch here is that when your little

All these things are really nice features but

above all the outstanding quality of F17 is playa-

bility. Pure, unadulterated, arcade playability.

Challenge absolutely gozes out of the side of the

The screen update is positively rapid and your

brum-brum takes dents to the paint-work you

can pit in. The langer you stay in the pit, the bet-

the press of a throttle away.

the full-blown championship.

ter the repair job you get.

dick drin

CHAMPIONSHIP Once you're out there in the cockpit there are You can't get guicker than a Kwik-Fit fitter especially if you want your exhaust to fall off half-way around the track





Ahh, this is the life. Weave my way through the Monaco hairpin, park up at the casino, have a dabble and I might even go gambling car moves at a terrific rate. Everything graphical from backdrops to your car is very well drawn

and animated When the finish line has been finally crossed, it has to be said that Team 17 have come up with a winner. Everything about this

game is just brilliant - it looks good, sounds good and plays as well as any greade racer I've yet seen. Do yourself a favour, buy Challenge, have

hours of tyre screeching fun and save a dollop of dosh at the same time. Aweso SIMON CLAYS VISION









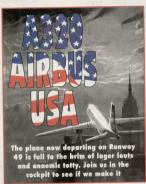


ores on the doors...The electrifying onship table

TO III YO

In F17 it never rains but it pours





very mention of A320 Airbus sends o shiver down the spine and the mind spiralling back to the days of the package

Arriving at the airport some three days before your two-in-the-morning, cheap-rate flight is due for takeoff, you queue with a herd of other revellers all moving with excitement over the prospect

of sun and fun on the Costa. After waiting some three hours in a fly-infested

baggage check-in behind the enormous Mrs. As the time counts down on oir of expectancy After a long flight the last person you want to bump into in the de-briefing room is Birbie Renaud



Markey, her three jammy-faced sproas, her som-

breen and her 13 suitages which are full to the

brim of mosquito repellent and diarrhoea cures.

Once you've collected your tickets, the caring

around-crew cattle prod you towards the depar-

ture lounge where you set up camp for the remain

der of the time. Living on a diet of insipid coffee

and stale sandwiches, you count the hours until

you finally hand your boas in.

your flight is called.



Oh dear, I appear to have microfoutated in my approach to Manchesti Airport and landed on the sac Ab well Knutsford services here I come!

Mail:	Flight f	lan
	VER DER X	(ok.
-	FROM	
	TO	10HD14
	ETD	1288
	PRM	P08
	FREIGHT	x100Kg
- 11	FUEL	x188Kg

Before the flight it's that all important planning stage

fills the marn. With only 30 minutes till boarding. you that due to Spanish air traffic control the flight Finally however, it's time to board. After the mod rush, 200 sweaty carcasses are settled in their

of lager and a good apportunity to goose and verbally abuse the hostesses. Fortunately Airbus has very little to do with the

passengers on domestic Rights. Instead it concerns itself with the serious business of safely commuting people from airport to airport in the United States at the helm of a state-of-the-art modern airliner. Unlike many flight sims (especially military ones) designers Thalian have concentrated on making A320 as realistic as possible. In fact, on

coening the box one finds a host of technical manuals and a complete set of charts. On first glance this may seem dounting to many, so a training mode has been implemented which gives you the apportunity to select your own weather and destinations.

In full flight made the met office supply weather and cloud ceiling, then it's up to you to decide the amount of fuel and the number of passengers you wish to carry. These are not irrelevant questions either, because they affect the way your Airbus will Once this has been decided it's into the cockpit

and time for take off. To get off the ground you about A320 is laid out like the real thing and must be implemented at the right time. Once in the air, unless it's a very short across

town flight you must use your trusty charts and beacon system - this could take some time The beacons help you to navigate by sending out a signal which lets you determine how far you are from your next point of reference.

This process is repeated until it's time for landing. This time you must use more hi-tech wizardry. System This works on the a similar basis to the bea-

cons, except it tells you whether you are too low, too high or left or right of the runway. When you have completed your flight (tangled eckage or intact) the computer works out a per formance rating. This is based on such things as speed, heading and remaining fuel. As you get more proficient and progress in rank, so the flights get more complicated and diffi-

are available and no automatic ILS are allowed. A320 has been designed with realism in mind hold doors. For example, towns are only displayed

The main differences between its older brother Furopean Airbus are an improved control system,

better sound and slightly enhanced graphics Even though Airbus will take a lot of mastering and patience it can get rather tedious on long haul Rights But it does succeed in providing gamers with a truly realistic simulation.

So if you've had your beady eye on the look out for an accurate sim. Thalian's A320 is definite ly the one for you

SIMON CLAYS



Oah, it's a lovely day for a flight... hey you can see my house out of the front window! GANUER November 1993

ere's a game that's hard to classiful it could be a platformer or it could be a nuzzler. So, that means it's either a platformer with puzzle elements to it or a puzzler with plotform elements to it! Hmm. I still soven't made my mind up.

To be totally honest, it would be better all-round if I could just create a new style of game just for the surpose of this review. Hey, let's do that right naw Blob is a puzzform game, err or should that be platzler? Oh dear

Originality these days is hard to find. I mean out your self in the position of a games designer and try to come up with an entirely new game that houn't ever been done before. Trust me, it's a pretty

Blob is a mixture between platform and puzzle fun, but Core Design have literally come up with a whole new dimension of garning. Instead of moving vertically or horizontally, the game comes right nut of the screen at you The actual surprise of this new dimension is very

pleasant indeed and Blob looks like a whole new ease of life in the sametimes staggest ouzzle/platform games sector

## FRANTIC FUN

d diffi-

rother

ystem,

AYS

ed.

The star of the game is a blue bouncing ball who incidentally looks too much like Putty for my liking. The object is to make your way through 50 levels of fast, frantic, bouncy puzzform () thought I'd go with my first ideal fun.

What you have to do to complete the levels kind of depends on which level you're on. Sometimes you might just have to find an exit, others you might have to collect miniature Blobs, or bounce on certain platforms to make them change colour. If you look at the screenshots on this page

you're probably thinking that Blob doesn't look too good - well, that's only because the game doesn't need fancy graphics. You also miss the feeling of being able to see Blob move which is one. if not the

most important parts of the game On the sound front there is a wonderful array of tunes to tease your earlobes. In fact, Blob probably

contains some of the best music for this type of game I've heard in quite a while Blob does require plenty of practice and you'd better not have a quick temper otherwise I see planty of gamers throwing their monitors out of the win-

I have a mean temper and god only knows what kept me from smashing my whole estate up in unpridled anger and frustration due to not being able to complete a level.

This isn't simply because I'm grap, but because Blob is just too hard. No, wrong choice of words,

LEVEL 01 said that Blob wasn't A DODDLE visually stimulating? Err. yes, umm, bye H's the first level and Blob is all numped up and ready to bounce along into puzzform merriment!

## It's bouncy! It's boingy! It's, err sproingy? It's Core Design's latest and it introduces a brand new dimension of games playing

ed the second level first go, but when I went back to it a few hours later I couldn't get bloody any where and had to put my head in a bucket of cold water for a couple of minutes just to cool my anger. There is, thankfully, a password system, so once you've completed a level you'll never have to visit it ever again. I was expecting so much more from Blob and I didn't get it. The graphics and animotion are really nice, the sound is terrific, the

auzzles are just about right, the addiction level leaves you wanting just one more go, but Blob just doesn't have that final element to make it a classic puzzform (wahey, it could catch on) game. Blob needed to be a lot more playable than it actually is It may have had a new refreshing original dimension to it, but there is nothing worse than a piece of software that is just so frustrating that you don't feel like playing it any more

to the platform

with the arreses

on, but there is a

VISION AUDIO DIFFICULTY graphics, sound and

All that bouncing must give you a

right headache! Lucky for our blob-

by that a series of first-aid kits are

It could've been so much better and I could

if you want a really tough puzzform game and

Jonathan Maddock

have ridden off into the sunset with it, but it just

you like this sort of thing then it might be your cup

of ten, but for those with tempers please he coreful and think twice before busing

nositioned nearby

difficulty level is way too high. Right

Developer > In-house Price > \$25.99

HD Install ➤ No Size ➤ 1 meg

fan and a spinny thing in his way. Answers on a down more than anything. For instance, I complet postcard to... HEY SUCKER Hey sucker! One of the best What kind of things about Core comment is that? sign's puzzform quanties is the Abuse from a music. So, it's a name I don't need, thank you me you can't

November 1993 GANIER (FB



Now before we carry an, let's make a little pool. Make sery doer parents are not in the room while you're reading this and also promise sever ever to let them read this review. If you're a parent and you are reading your half's magazine then put it down and go and watch Cardeser's World Teach was.

World. Thank you.

Namely you wouldn't be able to walk out in the street and start shooting people, but via the magic of your home computer your fantary can at least be tested and acted out. I don't condense voicence in any way, but I can still say that I don't mind playing games with it in.

Some of the best selling products of all timhave been incredibly violent. Operation Wol Operation Thunderbolt, Meanstone, Elvin 2 on Syndicate all have more than their fair share of death and violence contained within. Even cutes games are violent?



04-56FE Tesseract MC 128-7 CIM

Mech, 6 years Combat-infantry series



Psygnosis are back!
This time with an
RPG that contains a
bigger death count
than your average
Arnold

Scwarzenegger movies. Lights, camera, action!



And to be made when the first proper is a second of the first

one first frought is "Abb", but was to receive from a collection of grown and report will be represented, or index, staged to type your known in automating energy the more received to the control of the first part will be reported as all the just one minute it would be grown to the first just one of the first just one of the just one of the just of the personnel of the personnel of the just of the j

the and to mind. The man screen is split into equal terry one for each of the members on your set if you decide to play Hered Gouss with a life of the members of the you've god the necessary equipment for a best player mode, you will only have one present the way of the necessary equipment for a period member to warry about.

player mode, you will only have one team member to warry about. The problem with Dungeon Master was that all your adventurers had to wak around together. The difference with Hirted Cars is that each of your characters can go in different directions and operate separately. This means that there are a number of wary you can play the game.

cheed to check for tops and take a gocoround the erea or send it accepts one in the linst character. By you want to, send them all in because old saying goes there is sofoly in numwhy not, especially if you've got ple fireformer to deal with any ensurines you come up oppaints. Obviously three are in

power to deal with any energies you me up against. Obviously there are advised and disadvantages to whichever system of the measurement of the mea

MIA PAR





ne looks on in shock and herror as t





Sight, you better use some Andrex to clear that little mescuks up more blood than any other known brand:

Soaks up more blood than any o







ens. One of the team to

an unt ige

Couries is sie either mouse, surboard are by-stack, the best and couries option is to see mouse. When you place the pointer, or his extreme, depending when it is a direction arrive will appear.

Chicking acce will take your character(s) in that desired direction Morroy the pointer to the addless of the spream will grey by his option of either tongoing on every or picking up some will experient.

Although you can play out the whole thing from sort to finds, there is also the aption in

VISION AUDIO DIFFICULTY

LASTABILITY

RPG with a differomplement the astounding

Publisher ➤ Psygnosis Seveloper ➤ DMA Design

Price > \$29.99 Size > 1 meg

November 1993 GARNER

less the down of time man has pandered the apocalvase was predicted in the Bible, so mankind has striven to achieve

Writers too have very often have been pre-occupied with this vision of Armogeddon Normally the trend lies with the current world

economy and balance of power. We only have to examine the totalitarian worlds of Huxley and Orwell from the '40s to see a futuristic mirror image of communism and fascism.

During the "never had it so good" '50's and promiscuous '60s the science-fiction future pointed ophnistic pictures. Writers like Asimov and Arthur Clarke gave us visions of a golden age of Aguarius where people existed at one with their artificial environment, gozing up at glass domed

However, in 1984 Neuromancer, written by William Gibson, took the top off the proverbial Philip K Dick with Do Androids Dream of Electric Sheep and Walter Williams with Hardwired also painted a similar picture. Films followed with directors like Rickey Scott turning words into pictures in the much celebrated Bladerunner. Other films with the same underlying ideas such as

Mari May and Tran became popular. In doing so a new term was born: Cyberpunk

# Drawingboard

You may be thinking life in the '90s is frantic. Empire are about to put that all into perspective with Cyberspace. Simon Clays interfaces with

his combat software and enters the ethereal world of the cyberzone network



the world of the Cybernet

So popular was the book that soon on RPG game was launched. Due to the success of the dice-ariented table-top, Empire are about to launch Cyberspace.

But, to those of us uninitiates, what is Cyberpunk? In this shape of things to come the glass domes remain but gone are the grey lifestyles of Aintrip 1 and along comes a vibrant pulsating

## KEY ELEMENTS

Their world oazes activity from the cellars to the high rises. Paradaxically, because cities are inhabted by so many people, the value of human life is

Cyberpunk existence is a style defined by two key elements. The first is man's overwhelming day to day interaction with technology. In their world, computers are as common as washing machines and they don't break down all the time when you get your pants jammed in them. Because of this, sometimes the dividing line between mon and machine is some-

For example, if your brain were put inside a mechanical body, would you still be human? Conversely, is an artificially intelligent computer

The second element found in the Cyberpunk worlds is that of struggle, Basically Cyberspace is divided into two groups - the haves and the have

The setting for Cyberspace is cruel. The year is 2090, agreemments are in a state of chaotic collapse, drug abuse is rife and the massive corpora-

Man has developed Cyber system which has allowed him to enhance a wide range of artificial implants. Cyberspace however, is just in its infan-

cy. Cyberspace is a realm where a man's con-

sciencess can travel and interact with others. placed and is largely regarded as man's only uncharted Earthly frontier.

The first thing to say about the computer consize. It's set in a beleaquered San Francisco, under the cosh of repression discussed previously. Play will be set in two different enviro

first you will exist in is the city. Everything will be viewed in 3D and will com

Exploring the world of San Fran will be made as realistic as possible. For example, graphically the people you interact with will consist of a complex amount of connected polygons and spheres.

## The Gamer guide to pub culture in Cyberspace

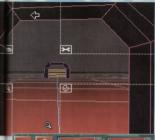


By gum... I'm thirsty. I think I'll pet me a wee drinky."



"Ih, barkeep... a pint of Boddies please"

Barkeep: "Sarry mate, Dan't serve Hulli-Arnie combos in this establishment





And finally, give your narcotic menace nice mohican and some tight pants

said that a high degree of realism has been

This will be further enhanced by the fact that every person in the world of Cuberspace has his or

their social class and everyone is assigned a letter

to describe their order in society. For example, N-dass citizens are unemployed

seen some early demos of Cyberspace, it has to be and are forced to exist in large, run-down apartment blocks

There will also be inter-relationships between the accupants of the city. However, for a

made that the participants co-habit. Also featured Control of play will be via a head-up display

sign your own custom character of the future. For instance Mr N Junky and be totally addicted to Cybertnace.



ristics on your drug-addled punk fiend from the future

which overlays the view screen, involving four main icons which will be of primary concern to the

The first icon control will be an information anthering control. Clicking your mouse on objects

There will also be inventory icons where players can pick up and drop items, and use the items

cyberspace zone, where people of the future interact using their minds. The orberzone is an othere al realm of electronic espianage in which net heads - people who use the zone frequently - do

This zone will be displayed in line graphics to

While you will be able basically to room where you want to, both in the city and the cybernet. Cyberspace definitely will have a plot you must roughly follow. At the moreant

Empire are being very cagey about the overall plot and sub-missions but it's fair to say that it

## DOG EAT DOG

From what has been shown in a demo version, Cyberspace has an extremely cinematic feel to it. There's a great deal of realism and interacting

Whether you be breaking lifelike into someone's apartment or just having a drink in a bar, Cyberspace will make the characters respond in a

very life-like monner. Overall Cyberspace looks as though it's going to be very big with science-fiction lovers and role-playing freaks alike. So, if adventuring in a dog eat dog world of technology mixed with espianage and murder is your bag and you've always wanted to enulate Herrison Ford, wetch out for Cyberspace coming to a software empo



I'm off to rip some trousers apart and grow!"



"Eh, barkeep that bloke with the muscles and the bare chest, I don't think I liked his attitude..."

ne of the best selling games of last year was Project X, lovingly crafted by the boys from Team 17. Shoot-em-up have always been popular. In fact wer since the days of Space Invaders and Galaxians people have waged war on flying alier Refore Project X, the shoot em-up scene was getting worse -

ing as time

went by rather

huzzoh. It

ON THE Drawingboard

> full offset in level two, although they are very like those seen in Menace and Blood Money

threatened to make the humans watch endless repeats of Bobby Dayro's Rock with Laughter ('Yis a foto warre than death). What it undoubtedly leads up to, though, is a damn good excuse for some

what reason I don't know

You stort your mission with those sonneshins default weaponry and a full damage bar. You surlets and the actual degree of damage alepends on

you really expect to get away with having a barnev with a 100-tan piece of solid metal? When

to build addarts. I'm not talking about toast racks

and egg timers, though. beely, bouncy, hacking, maining and killing weapons. Weapons to make your eyes water, oh

ves indeed transmitted back to your factory and the piece of

before, it's what shoot em-up fans will call a shop Gremlin, D-Hero has been developed by Dutch

Refere Funharia they formed part of a develop-

responsible for Howkeye and Flimbo's Quest. ics are as good as Project X and the sound is just brilliant with an array of high quality

It's been a very long time since games brush away the cobwebs from your litchy trigger

POSABLE

HERO Nappies, razors and now heroes.

superb graph

Team 17's top seller was best described as an old classic, boosted and improved by 90s technology. So anyone produc-Almost half the Free Worlds' populations were killed and technology sank to problems. For starters, however good the product

Communication between individual star systems was near to impossible In the year 2867, a small group of men and

force called (and you can gasp at this bit) D-Hero. reagining lost technology and freedom They succeeded in building a prototype space-

ship capable of penetrating the alien strongholds. Thanks to the Von Vorneaut method (opening space-time interrupts at desired places, err apparenty) it is possible to tune up the ship on its flight through enemy territory and have it warped to the factory where enhancements can be made. Yes, I

popularity. On first glance it looks very similar

Now, in an abrupt kind of interrupfron sort of way, a story. At the beginning commonly know as The Blaze, ended in

women were selected for a highly specialised task

in the right place and you'll be able to progress to level two game's creators don't have to explain why there

The end of level baddie. A few sl

At this point there is no ending to my story because as per usual it's up to you to get in there in your spaceship and ap and kick some alien but

Just what is aging on? Jonathan Maddock shoots

his way into

Gremlin's latest

blaster...

post when shoot-'em-ups were at the height of their

Flying through level one and our D-Hero fir a warp zone back to the factory. To you and me it's more commonly known as a shop!

is it's instantly aging to be compared to Project X. I personally like a fair old blast and so far have

Stardust, from brand new software company

Bloodhouse, and Blastar from Core Design have

Oh hold on a minute... news of a late entrant

has just reached Gamer Towers. Reports state that

a game with more than a good shout in the cham-

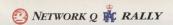
Disposable Hero, or D-Hero as it shall now be



a three-way shot and I can't wait to try it out!



If you look in the bottom right-hand corner you'll see one about to hit its target



# FLIGHT SIMULATOR

This rally sim's so lifelike you can aimost smell the high-octane fumes.
"We have lift off!" Just what you don't want to hear from your computer co-driver...

He's screaming pace notes above the shriek of the engine... you're pushing it to the edge in the final thrilling stages of the Network C RAC Rally. You're straped into one of the five rally-bred supercars, speeding in the exact tracks of the '93 Rally leaders. Each car handles differently. Each tests your

You've picking up vital seconds when you hang a bend late, clip a bank and flip into a roll – damage your car and you dent your chances. It's the sequet to the top-selling RAC Rally game. But the sound's even more deafening, the digitised video graphics even more in your face for an atmosphere that's totally furbo-charged.

Flying around the world's toughest rally course is one thing. Staying on earth is another.

WARNING: CRASH HELMETS NOT PROVIDED.



Mobil







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G246 - WIBBLE WORLD GIDDY

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COMPANY TRANSPORT STREET ON THE PROPERTY STATES OF THE PROPERTY STAT

39p

## TOP DEMOS

D148 STATE OF THE ART. The homes dense of the year Underlanding peoples. God the one-co. Underlanding peoples. God the one-co. Section of the control of the learner of the control of the learner of the control of the learner of the control of



## TOP HITH ITIES

## FRIICATION







deed Desmand. The boy Gremlin, ever since his football career took off in November of last very los done well clearly Released to high critical acclaim from the finicky computer press believe you me, we are finicky). Premier Manager massivered the face of faotball management names as everybody alive knew it

For the past eight months, Premier Manager moved out of the top ten since its release! That's good going in arryone's books and the sheer scale of the response from people buying the product

I can't guite work out why it has become so and how incredibly addictive Premier Manager

Gramlin have now taken the original game added a whole hast of extra features and slapped a massive two at the end of the title to bring you

### STRUGGLING

As before, you begin your career at a strugalina Conference Legaue club. Using your truh excellent managerial skills, you have to turn around your team's performance and make the fully be able to move to one of the country's top

could be into Europe where you'll have the opporturity to become the manager of one of the world's

The secuel keeps the same "no-norsense" style

then just picking the right squad on the day - now From ensuring good crowd control and ticket prices to organising wages and contracts, every

## ON THE Drawingboard

Oh, he's football crazy, he's football mad, he's football crazeeee and, err I've forgotten what comes next, but our resident schizophrenic

Jonathan Maddock turns into Jimmy Hill and inspects Gremlin's latest...

data disks. Once you've tried your hand at the English leagues you'll have the apportunity to have

The original game was packed with so many features that it was nighten impossible to explain them all. Making things worse for journalists with little space on their pages as it is. Gremlin have included on abundance of new features in the

There are now 16 unique playing formations. eight selectable playing styles, eight training camps. 12 different match tactics, up to 26 players ity to hay and sell players in Europe has now been

## WEATHER CONDITIONS

Another nice touch is the inclusion of weather

Premier Manager wasn't really packed with





down to you. Premier Manager 2 will include a detailed report of all the match day happenings, as Premier Manager 2 is to be released throughout Europe, so as not to disappoint our European

For those who weren't very good at the original

how more storic screens.

## PM2 has now got immediate sacking for poor per So, there you have it. I can tell by the atmos

in fact maybe bigger than its original counterpart. news has just leaked through that Peter Reid barely a paragraph ago I was talking about sockings. Gasal Was & a coincidence, or have I got some incredibly dangerous psychic powers rom the devil like that Darrian kid out of the film Omen? Frr. well no it was probably a coincidence

The ground improvements screen Ah yes sir, could I interest you in a brand new set of floodlights or perhaps you like to peruse over our extensive range of dug-outs?



You can decide your match tactics at this point. THe only change for this in the sequel is that Gremlin have managed to squeeze two info screens into one November 1993 GA





n my book there are several types of platform games, Cutesy, Ruffy and happy ones like Zool, Putty, Superfrog and Rainbow Islands have sold tremendously well and are probably the most popular available for the Amiaa today. Rivalling this cutesy platform break-out is the normally has a big, muscle-bound hunk of a hero

running around trying to average whatever he feels

nitely come with me if I were ever stuck on a desert

El had to any choose one, if d be an extremely

It was published in January 1992 by the naw sadly departed Image Works label and was per-An aut and out platform ramp in the Land of Warrior in a desperate bid to destroy a Demon King who had wasted his home village, it was a PLAYABILITY

tough decision, but I know First Samurai would be

I personally prefer the latter category of plat-





rawingboard

Jonathan Maddock

takes a quick trip to the land of the rising sun to inspect Psvanosis' latest and greatest platformer



First Samurai boosted some of the finest graphics, sound and playability to have adorned an

The game has now been lost in the mists of turned their attentions to something new, some thing more attractive, something with flashing lights

Second Samurai offers much more than its orig-

there's a hit of everything in there to please every Another worthy feature is the inclusion of a two player mode. This system allows both players to be an screen simultaneously and will have separate

ment where players can help each other to defeat generates a battle where one player will try to out-

There is also an aption in this mode where the players can choose to be either friends of foes. If but if you choose "foe" then you can wage war

This could lead to the problem of trying to beat each other up rather than completing the game, so instead of actually killing your apparent you just pinch all the bonuses or collect the points for

Throughout the game there are experience points to collect encouraging players to

affects the end of game sequence. The more points

Interaction with the backgrounds and the char will be able to move/carry rocks to cover erupting some opponents to jump even higher

## UNARMED

effects.

The Samurai will again have a wide range of armed and unarmed moves and the emphasis will

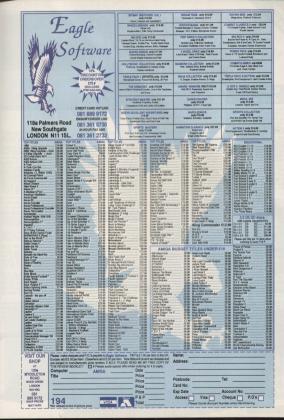
Those of you who were familiar with the first game will remember the amazing range of incredble sound effects. These have been improved for

This time a volume control has been added for

Second Samurai is going to be absolutely mass give. It's bigger and better than the original and I Me<sup>2</sup> I'm already smitten and con't wait to get my grubby hands on the finished version.









# Getting into cheat mode

On the filing screen, pop up a file and instead of your name type "Let me cheat!", making sure that you include the capital and exclamation mark Instead of now pressing Return, bit the RESET button. The number next to the LOSSES column on the

Now type your name in and you can get into the battle area to attack; you are now able to enter the game as normal. When you reach the map screen where you choose which bottle area to attack, you are now able to get to any of the Basically, if you hold down your right mouse

button while selecting which square to go to, you In cheat made, there are two major facilities available. If you press Left Amiga-W during a sce-

you will get the wrong debriefing text You can then continue and progress through the

game. In this way, you can gradually see all of the If you go onto the map screen during a game and select a destination using the mouse, pressing Left Amiga followed by the number of a unit [1, 2 3 or 4), then that unit will go to the destination

specified on its map screen. It is a good technique General points

When you first start to play Wor in the Gulf it all looks rather complicated. There are four windows on the screen, and you have control of up to 16

People who just pick up tanks on their own side before they even meet the important to get used to the feel of it before expect ing to beat the hell out of the apposition The hest way to do this is to play the dema sce-

norio, and make sure that you follow everything the control mechanism is surprisingly easy and

There are a few general points to remember when you are playing the same. MI tanks have much more armour than any of the other vehicles on your own side, so ensure that some of your units are entirely made up of M1s.

the very powerful TOW missiles available on your other vehicles kept further away from trouble. This makes sense, because the TOW missile has a range of about 4km.

If you find that the coposition are destroying you too easily there are a number of things you If you use your Engine Smoke, then that will

make you a much harder target. The Iraqi vehicles have very inferior infra red imaging, and so will have no firm target to shoot at. There is nothing to prevent you from using engine smoke most of the time, so keep it turned on as much as you want This may mean that you need to use Infra Red impaing, porticularly if

Normally the apposition unit which is firing at you will be marked on the map display, so as soon as you are receiving incoming fire, try and identify spotted it's often more effective to destroy the apparent from to tun away!

Use the creas of forest, particularly the tree line. to move in if you can. If you move your vehicles just inside the areas of forest on the map displays. then you will be able to survey the battefield while receiving "terrain protection". Your vehicles are computaged and after the apposition will not be

able to spot you against the tree line. Note carefully the aims of the forthcoming battle, and work out a provisional strategy before you stort

Playing the game

Failaka Island

Battle 1 Chaose the too left-hand battle area to start. The aim of this scenario is for the player to track a convay heading from a chemical weapons store in the

northern village to a warehouse in the southern vil-Then all that is needed is for the player to group down the main road to the northern village.

country to the village in the south-west.

destroy the two buildings concerned. So, head one If you do this from far enough away, you will find that you can destroy the forces in Ikaros withand another group diagonally across way of preventing a further re-accupation of the site is not to stick your forces in the middle and After a few minutes you will spot a

warehouse in the north (it is the most north-wester ly building in Az Zor). You can then destroy the building, but leave the vehicles. Your unit in the north should now be used to stop any Iraqi forces re-entering Az Zor. This is

quite simple, particularly if you use your engine By the time your other unit reaches Sood Wa Speed in the south flav up on the edge of a nearby tree line, or you'll get shot at frequently) you should have just enough time to spot the convoy turning into the second warehouse from the south of this village. Destroy that warehouse (not any

other) and you've won! Rattle 2

The hottle area in the top right of Failaka Island Koros at the centre of this area.

Then you must ensure that no forces re-enter Finally you must locate a group of Gaskin missiles

lkaros is that if any building are destroyed, you lose the battle. To avoid the Iragis taking pot shots at you (and thereby causing potential collateral damagel you could well attack them from very long range using TOW missiles.

That way there certainly will be collateral dam age. So it is best to set your forces on the edge of aroups), and await to ambush forces as they try to





re-enter. In the meantime your fourth unit can search for the missile site which is to the north east of the most north-enstarts forest in the man. In all if you hold out for 30-32 minutes from the start of the battle you have won.

## Rattle 3

The final battle area of Failaka Island is the southeasterly part of the island. You have to provide protection for a group of support vehicles which will arrive at the southern village of Failaka after 16-18 minutes.

Prior to this you should have cleared the road to the north from the village. Another aim is to destroy the helicopters in the northern airfield To dear the northern mod, send three of your

units to the forest edge opposite the three locations where you have been told there are Republican Guard mad blacks

When all three groups are in place then road blocks. It should be quite easy to destroy all three units. Naw, use forest cover to take two of your units south to defend the convoy in Foiloko

If you place on unit to the north west of the village and one unit to the east of the village, you should be able to provide satisfactory cover At some point your fourth group will have to launch an attack on the northern airfield. Set this group up in forest cover opposite the middle of the airstrip, and aim to destroy the attack helicopters in the middle of the strip as soon as you sive launch as a result, your third unit should be free to help

## **Bubivan Island**

## Rattle 4 The first bottle on this island is relatively simple

You must take all of your troops over the bridge. and in the process destroy all of the groups defending the bridge area.

Then you must await attacks from the south while ensuring that all of your forces are hidden from view of the troops from the south. Set two units in the comouflage of the forests just to the north east and north west of the bridge. These

should be able to dispose of any southern troops. The other two units should then try and attack the police post in the north. The best route to take is to veer to the west, using forest cover to come into the post at close range from the west.

If you have destroyed all of the apposition at the past, then you will win if you hold out at the bridge for 30 minutes or so ofter the start of the

## Rattle 5

This is quite a tricky battle to get correct! You must protect a convoy which is plying the road from north to south and back, from attacks from the west of the battle area. With four units, your best approach is to put each unit at a roughly equidistant position from

vide adequate defence by standing still, so don't the west of the road, on the eastern end of the

You are now obliged to keep a very close eye on aware of any activity on your mbp display you should immediately respond. It is also fruitful to just scan the bottle view, to keep an eve out for enemy

and so are able to note where the most danger lies tion without losing any vehicles. It can certainly be

## Battle 6

You have a series of objectives in this battle. ern-most end of the east road, and make sure that all activity on the road is stopped. Secondly, you howe to search for two vehicles hidden in two seaarate buildings. In this battle area each forest has a building to the south of it. Now, there is no need to destroy a building to find if there is a tank inside

This will prove very useful, because half of the buildings will cost you money to destroy, and the last thing you can afford at this stage is to lose money. On the other hand, make sure you do destroy any building (radar tower, satellite dish or comms tower) that will gain you maney - you will need it all You will just have to search every building in

randomly hidden in different places every time you play). If you keep to the edges of the battle area as much as possible, you will avoid a proportion of enemy counter-attacks. Once you are ready, make sure that you can

reach the rendezvous point at the designated time. The location is just to the east of the most southerly forest. If you happen to destroy the three rador towers before the end, then you will make even more m oney!











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regramming uderstanding code is a beadache viers yon document it clearly. siin Yarnall underlines the uportance of comments



OctaMed, the old Amiga music stalwart, gets another upgrade – or is it just a facelift? Paul Austin fluds out



smus tal South looks dozen from a eather satellite and checks at the new CIX Usenet



Amos
Big is beautiful according to
Phil South, who goes about
achieving over-sized sprites
within Amos



f anyone has ever encouraged you to learn
ARexx, one of the things they might have
mentioned is its similarity to Basic. In many
ways this is true.
However, there is one area where they are very dif-

ferent indeed, and in this ARexx knocks spots off Basic.
The area I am referring to is the ability to handle dynamic code. Before looking at some examples of this ultra-useful programming feature, we will go over some of the main points of dynamic code again.

First of all, most of you know that interpreted languages, like Basic and ARexx, are noticeably slower than compiled languages, like Pascal and C. However, the loss of speed is set off against a massive gain in case of use and interaction. These features can be a lot more important than pure speed, especially when designing a new moretim.

## **TEDIOUS CHANGES**

Generally speaking, compiled languages need all of their source code to be compiled, assembled and linked before the program can be run. If any changes need to be made, no matter how small, the whole process must

be repeated this can be quite tedious.

You cannot change a compiled program's system space (the parts of the memory that store the program instructions and the variable names) once the program is loaded.

As a result, it is difficult to build your program up bit by bit, testing your ideas and changes along the way. Interpreted languages allow this kind of program development to happen much more easily.

Because the program is run line-by-line (and not in one unit), when you make a change in any line, or add new lines, your program will take this new form.

However, up to now we still draw a firm distinction

between the parts of the program that are considered to be data. Dynamic code goes even further than simple interpretation, by blurring the distinction between

than a compiler, dynamic code allows even more flexibility, since you do not have to worry about the variables that your program will need when it is running – the language will allow the program to create them or eliminate them as neces-

This means that ideas which are difficult to code with standard programming techniques become much easier to handle. Dynamic code makes it easier to express what you think, because it does not reinforce rigid boundaries.

Of course, any por could be done just as well and protebly more efficiently) if it was laboriously coded without dynamic code, but the amount of programming work involved would be much more.

You would need to write an the thicky outs yourself, instead of having them supplied automatically by the language. When you want a quick solution to a specific program, results can be much more important than technical niceties.

be much more important than technical niceties.

Obviously if programs are sloppy, the results will suffer in the end, but if there is a quick way to get a result it is point-

Having got some of the theory out of the way, let's look at a few concrete examples to illustrate these ideas. We first looked at dynamic programming in these pages about a year ago, and many of the articles since have touched on the subiect, either directly or indirectly.

## DYNAMIC CODE The purpose of this summary is to highlight the main tech-

niques involved, both for ARexx newcomer and for the more experienced users.

ARexx provides three main approaches to using dynamic

Aftexx provides three main approaches to using dynamic code. These are compound symbols, the INTERPRET instruction, and the variable checking functions like ValueO. We will look at them in detail. Remember that they are not normally

found in the more common languages like Basic. Compound

# Dynamic

program and data. Whereas programs written in interpreted languages can be paused and changed without reloading them, programs containing dynamic code can change the system space while they are actually running (that is, not in interactive or debug model).

Since this is equivalent to changing the program itself, this type of dynamic code is sometimes known as selfmodifying code, or syntax/semantics collapsing.

## CONTROVERSY Now, as you might guess, things can get a bit hairy if

programs are allowed to modify themselves too easily.

There is quite a bit of controversy around programs that change themselves. It is generally recommended – and quite rightly so – that you should steer well clear of them.

nem.

Nevertheless, dynamic code (like most powerful and dangerous things) can be extremely useful in small and well controlled dones. The kind of thing we will use it for is not large applications, but small, clever "fatcks" that will allow us to do tricky plos in just a few lines of code, with the maximum of ease. In the same way that the interaction of an interpreter allows more flexibility.

symbols and second level substitution comprise the issue mayer tool that ARexx supplies for dynamic coding. Now, if you have used ARexx at all, you will already have encountered compound symbols, since ARexx uses them instead of arrays and tables, for example index.n, mutrix.3.4, or man.age.

We will now look at a process known as second level substitution which is very useful for creating dynamic tables easily. Used carelessly, it can also be the cause of many errors. Suppose we have a string like this:

Suppose we have a string like this: string = "-100"abt\$,.##!ARThor"

the compound symbol unusual string gets effectively reduced by ARexx to:

musual.-100 abcs.. ##!ARThur

There are two things to note in our example. Firstly, by using substitution, the system is able to create a variable (compound symbols are variables) with a name which cannot even be legally written in ARexst.

Secondly, since it is a variable, it can have any value, including, naturally, the name of its own node. So you can have a variable called array. John 123 with a value of John 123

## AREXX

The dynamic codina

techniques

possible with ARexx won't quite write your

programs for

demonstrates. they'll make

some chores so

they could...

easy you'd think

vou. but as Alex Gian

is therefore possible for the names of the variables to be determined by their values. Initially the mind boggles

addressable memory, since variables can be identified by their

seat a 'The three blind mice jumped

can

/\* remove commas,fallstops \*

ELSE count.word = count.word + 1

DO UNTIL List = ""
PARSE WAR List word List

very simply and ARexx lets us code

/\* read a file line by line \*/

We saw one useful example of this in the last issue, when a string arriving from a remote computer was interpreted by ARexx and

ARexx code has to be introduced externally (that is, where it is not

This can be particularly irritating if you have many procedures. and they all need to share the same variables. If these variables are

> globals = 'war1 war2 war3' ...etc Myfunc: INTERPRET 'PROCEDURE EXPOSE' globals

The INTERPRET instruction will ensure that all the globals' names are expanded and expose them so that they are shared. Next month we will round up our overview of dynamic code,

# code

The program is very straightforward. By initialising the stem count, to 0, all occurrences of count anything will be 0 unless specifically changed. This is a basic rule of compound symbols in

As each word is checked, its count is increased by one. At the same time we maintain a list of unique words.

## COSMETIC

The rest of the code is mostly cosmetic manage-"The" and "the" are recognised as the same word means that Both leading and trailing punctuation must be

Even in a simple interactive language like Basic this program would have taken substantially more effort, since we would have had to create arrays of strings and loop through them checking

In ARexx this table is maintained automatically and searched "on the fly" without us having to do anything about it. I hope this little example makes some of the theory we have discussed

Here is another very similar example that reads lines from a







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mation formats, the confusion surrounding graphic quality and play-back speed has become even more On the initial release of the AGA, the Amiga world was alight

ith the arrival of the AGA chip set and two new ani-

with what transpired to be totally outlandish claims concerning

Back in the early days almost anything seemed possible. Even hi-res, full frame, full overscan, Ham8 images would animation perfectly, no matter how much transition takes place between frames -

In truth, little of this initial hype actually held water, and in fact animation on the so-called super fast AGA appear only maryinally quicker in some modes and invariably slower when it came to full

After many a late night desperately trying to squeeze additional

Although lacking colours in comparison to the AGA, old HAM nevertheless offers the only full frame playback medium which can achieve reasonable image quality and more importantly a

achieving reasonable rates and image quality can still be a problem. SmOrd dithering, file format conversion and animation load and sive ontions - applied via the excellent ProControl batch process

#### STILL FRAME

If you then team the HAM output from ADPro with the speed of an 040 you'll have the closest thing to still frame recording the Amiga can achieve. In fact, in some cases animation playback will dard. As for the much-hyped Animation7 and Animation8 formats. things are again a tad disappointing, with even lo-res interlaced

Obviously the new modes have the benefit of the huge number of colours and resolutions, but alas all remain just too slow for full As a consequence Animation5 still remains the fastest playback format - easily beating both the new modes on either AGA or ECS

machines. Not all animations requires full screen, and in such cir-In fact, even the odd full-screen animation with limited move-

ment and minimal reflections - assuming you're ray tracing - could be improved in certain AGA modes. Finally if you are ray tracing, always produce your frames as 24-

better job than simply allowing the rendering software to make for-

And of course the essential SmOrd dithering required to achieve optimum playback speed and minimal colour stepping is only

ProControl, a near essential for the serious animator

For those who suffer from 24-bit storage comes as part of the ADPro utilities collection.

When combined with ProControl, even the trickiest storage problem should be resolved. Once set up with an appropriate directory and processing instructions the program simply sits

or modeller to send its finished files to the same location. When a frame is complete and



# Smooth operator

Due to this ingenious approach to automation, huge animations can be produced without the horrendously restrictive intermediate stage usually associated with animation production

few more hours isn't much to ask considering the benefits on offer. Now thanks to the ADPro family, generating a 250 frame animation - roughly ten seconds - would be a simple matter of setting

the render button - ensuring approximately 6 to 7Mb are free on To put that into context, the same animation stored as 24-bits

Obviously having the original 24 bits safely tucked away in case available?

In short, the moral of this tawdry tale is get yourself a cony of

Paul Austin explains how to get the best in speed and quality when it comes to full frame animations

Some mags are to be tasted, others to be swallowed, the shap and some few to be chewed and digested!

t is usual to write comments in source code to make it clear what is going on. If you think that these are always put in programs for the benefit of other programmers.

a few months, then decide to go back to it. If you have not

bulk of the code so that you end up constructing a skeleton pro-

know what they look like-

(\* This is a comment \*)
( so is this )

Both styles serve the same purpose so it becomes a matter of nersonal preference as to which you adopt ...

Personally, I prefer the first method because it makes comments easier to soot. Another good reason for using this style is that C uses curly braces as the equivalent of Pascal's begin-end

# PROGRAMMING

The right-hand side of the assignment is

The most basic operations that may be

# Revealing your brackets. As most of the RKRM examples are written in C. it sources

makes sense to avoid the possibility of slipping into one language while programming in the other!

process it and output some result. Last month we looked at text output using the write() and writeln() procedures. These procedures can also be used to output numerical data but before we investigate this, we need to see how to input and process some

A variable is a memory location where a value may be stored. It is referenced using a variable name and the value that it con-

program ExampleO1;
(\* a PROSSAM TO DEMONSTRATE THE USE OF UNRIABLES \*)

war (\* USE war TO INDICATE THAT WE ARE GOING TO DEFINE SOME VARIABLES a : Sategor; (\*\*\* EACH VARIABLE MAY BE DEFINED ON ITS OWN LINE OR b. sum : integer: (\*\*\* TOGETHER WITH STHERS OF THE SAME TYPE, WHICH

sum := a + b; writele(a,' + ',b,' = ',sum); (\* EXPERBLES DON'T MEED QUOTES BUT TEXT STREAMS DO! \*)

values in them, we use the assignment statement which takes

variable := expressise

Variables a and b are assigned literal values, while sum is assigned the result of the expression a + b. The name of the variable on the left-hand side of the assignment may also appear on the right-hand side:

but using integer division it would be two remainder one. The

would result in x being assigned the value 2. If we wanted to find

dures. The difference being that readln() inputs a value then out puts a line feed, while read() just performs input,

a,b,result : integer;

begin (\* IMPUT TWO INTEGERS \*) write('Enter an integer: ');

(\* ADD THEM TOGETHER \*)

(\* AND OUTPUT THE RESULT \*)

Understanding programming code is a headache unless you document it clearly. Colin Yarnall underlines the importance of comments

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or those who've somehow avoided contact with Med in its countless incamations, v5 is the latest, eight-track version, boasting four-track sample playback alongside fourtrack synth sounds and 64 Midi tracks.

Midi, either - in fact, a complete and impressive sample editor/recorder comes as part of the system as indeed does a sepa-

As far as sample editing is concerned there's very little to complain about with all the major edit function on hand for cut and

naste operation. There's even a fair selection of special effects such Unlike its predecessors, a 2.04 machine or above is essential, courtesy of the massive redesign of the interface which now

A perfect example of this devotion to WB2 is the program's online help which allows instant access to the accompanying on-disk manual. Thanks to the hypertext employed by the Amiga guide, locating specific information is now much quicker and more intuitive than simply ploughing through endless documentation - a

rather annoying aspect of earlier revisions. As well as the Amiga guide, the power of WB2 has also been lavished on the interface itself with most of the power icons controlling additional pop-up requesters which not only tidies up the overall appearance but provides a much improved one-stop approach for feature location, thereby leading the user towards the more obscure options which may have been overlooked in the

#### SUBTLE ADD-ONS

On the Midi side you're no longer limited to basic multiples of four tracks. Thankfully you can now have any number your Midi system requires, and even better the limit of 100 blocks has been trashed in preference for a whopping 1,000 - great news for both internal or Midi productions.

Another useful revision concerns module packing - now both format used in Stephan Fuhrmann's PowerPlayer module player

More subtle add-ons include the option to calculate module length prior to saving, while a Save Timer feature provides the abil-

As for file formats there's a new sample type entitled ExtSample.

Alas such samples are only useful for special effects due to certain hardware limitations which make their use within melodies a

fairly risky undertaking On the Midi side, yet another new file format appears to cater for the new 64-track support, sections and multiple play

In addition to new file formats a Sections option has been added, providing a major improvement by allowing the organisa-

tion of songs in a much more hierarchical manner. The idea is that you can create several play sequence lists - each of which can be named - and then define the order in which they are played. The section list works as the master play sequence,

## **Purchasing options**

If you're already sold on the all-new OctaMed it will set you able for £24 - great value if you're already familiar with Med. If not, it could be worth picking up an older version from the OctaMed Pro v5 is available from:

Seasoft Computing, The Business Centre, First Floor,

of use, blocks can now be named allowing

A new Display Max Tracks feature allows tracks that can be displayed on-screen, while



# OctaMed revisited

The old stalwart of Amiga music gets yet another upgrade - or is it just a facelift? Paul Austin reports

# New sample editor features

Although the sample editor has been a part of the Med environment for some time, it must be said that it has definitely improved with keeping, and to be honest it's more than a match for many a stand-alone

sample editor trianks to the new v3 aud-ons.					
Invert	negates the ranged waveform.				
	discards non-ranged parts of the sample.				
	removes empty space from both ends of the sample.				
	allows you to listen to what the copy buffer contains.				
	an option to avoid clipping plus four presets for doubling, halving and fading in/out.				
	provides an option to cancel the current fine-tune value plus the ability to turn off anti-aliasing.				
	source/destination levels can be set.				
Create Chord	Allows the creation of chord using between two to four notes				

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pari has since its release been widely regarded as one of the most ele-modelling programs with an interface which is at the same time easy to In earlier versions it had no 24-bit support and no real texture apping. Now Caligari offers full 24-bit output and has full tex-

els are created in 3D, edited in 3D, rotated, sized eved in 3D, and all as the user looks on, the t being that once this unusual approach is

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66 Once the joys of working within its very accommodating environment have been sampled, few will want to animate in any other way Amiaa Computina, September 1993.

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certain sites contain information from other sites which is undated (hopefully) fairly regularly. But Internet being you are interested in suddenly stops being cur

The images on this page are produced from Meteosat data five regions are represented on the pics from Edinburgh: the UK, time of writing the Atlantic images were temporarily unavailable.

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# otherwise known as Imperial College London. The pictures are

mirrored from met.ed.ac.uk or University of Edinburgh. Other sites throughout the Net provide pictures local to the node in question, so you can get pictures of other places if you delve around a bit. One of the best ways to do this is via Gopher, as the process is entirely automated. Incidentally if you run a PC emulator at all you might be inter-

ested in the FLI animations also on the same site, under "animations" rather than "images". These are short sequences, just like the ones they show you on the TV behind Michael Fish. Get

To contact Phil South email him as: snouty@civ.compulink.co.uk uad1135@dircon.co.uk



Access pictures like this for yourself

duct

# COMMS

# Out of this world!

Phil South looks down from a weather satellite and checks out the new CIX Usenet reader

## How to Usenet

CIX has always been a bit classy in its features, and the Usenet feed has always been a top notch way of seeing all the chat on one of the world's biggest electronic conferences.

But writing to Usenet has always been a bit tricky; using mail to news.demon.co.uk to write messages is one way, for example.

But now there is a new way to enter the world of Usenet, and this is via the new Newsnet reader. This is a proper RN type reader for the Net and it must be one of the most complex things it's ever been my misfortune to handle on-line.

It's complicated, there are a load of commands to learn, it's unpredictable because itchy trigger fingers make mistakes, but you know what? I love it. In fact RN-type newsreaders have been in place in boards like The Direct Connection for

ages, but this is a fairly recent development I would have thought with all the brains at CIX they could have made a reader which

was more like their own system, make it a seamless part of the CIX environment so that you can access the system via a OLR like Nicola or something like that.

But no, it's a complex beastie, and I'm only just confident enough to use it after a few weeks of dibbling about on it. The best thing you can possibly do is to download the file called NEWSNET.DOC from the cix/manual topic, and read the document very carefully

It contains all the keystrokes you need for the reader, and in fact I'd print it out so when you hit a problem you can flip the pages and at least have a stab at typing the right thing.

around CIX in the first place, using this new RN reader will become easier over time, and with use the idea of choosing whether to press s or S or AS or K or k or n or P or \$ will be second nature like telling people your name. Mine for example is, um, hang on a

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Please place your orders on the Reader Offers form opposite. I delved around in my archives and found a really neat routine

What is needed is a little routine which thinks big. Something

ZOOM command is a perfect choice, as it does one job nemarkably well and with a great amount of flexibility

The first sten towards a big scroll text is to embed your text into a alphanumeric variable. like 18-

15=" Amos Almanar... your one true choice for Amos Escellence. 15=15=" Amos is the hest thing since sliked bread..."

Screen Gpen 1,416,256,4,Lowres

Then you define a scroll, from 0.0 to 416.256

The procedure is like so:

\_SCROLL If Mouse Cerel Thee East

The loop does the loop until a mouse key press equals 1, or left up the text a letter at a time on one screen and zooming it and scrolling it on the next.

Procedure SCROLL

The variables are shared so that they can be used by the rest of

Screen 0 : Lecate 0,0 : Print MidS(LS,L+1,1)

onto screen 1, then performs the defined scroll. Simple and very

A bit of simple incrementing and finishing the proc completes the

### Write a program!

Here's an interesting one. It's a film about robots like Terminator or Hardware. Our hero makes it to the main computer to get a readout about the robots which are attacking the planet. OK write a program that the movie director could show on screen. Technical readouts, plans, vector graphics, it's up to you. Send your entry to the isual Amos Aspect address marked Robot Attack.

The program is excellently simple and compact, which if the big text routine isn't the

Moving on, most movies these days have son, mostly just to make the films look mod-



# Thinking Phil South decides that big is beautiful and goes about achieving over-sized scrolling with Amos

Then you're ready for the main program loop. The program goes

For ANG=359 To 0 Step -3

way to ensure you get there. Next a few calculations to make sure the ends of your radar scan are on the edge of the circle-

17+185\*5(e(ANS)

Clear the screen and draw the line:

Draw 160,128 To 160+XP,128+YP

Now swap the screen and wait for a vertical blank. This means that the sweep of the radar is as flicker free as you can

Complete the loop and wait for the mouse key before you inter-



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## ACCESS

Access Amiga has arrived ! This new magazine from Weekend Developments brings Amiga users the latest news, reviews, articles, competitions, plus an excellent coverdisk. A major thing you will notice about the magazine is that it is not packed out with adverts, the larger percentage of the magazine consists of interesting reviews and articles, so it gives you, the reader excellent value for money.

Issue one was launched on the 1st September and is available now. Its content includes CD32, 3 Monitors (The 1940, 1942 & 1960). PC 286 & 386 Bridgeboards, TT2 & MegaLoSound direct to disk samplers, an Eric Schwartz Special, plus an interview with AMFMs Riorne Lynne.

News includes details of a brand new Amiga Show. and a new service from EM Computergraphic. In this first issue you are also given the chance to win some

brilliant software from 10/10 Educational Systems, with a first prize worth over £100. the International Computer Show at Wembley So, why should you give Access Amiga a try? in November. Issue 2s coverdisk contains Well, apart from the amazingly low coverprice Solitaire Sampler from Tower Software and

Pagestream 3. Brilliance, AdPro, Maths

of £1.75 you also get a disk. Issue ones disk contains a full game from 10 out of 10s English package, and some brilliant music from AMFMs disk magazines.

For those of you interested in Issue 2, it will be available on 1st October, and we are already able to bring you details of its' content. Amongst other things two Idek 17 inch monitors are put to the test. Plus the Rainbow 3 24-Bit graphics board and the Fastlane Z3 SCSI2 controller from Chartscreen UK are under review. Also being reviewed are;

> Algebra, two new CDs from Almothera 'Demo CD2' & 'CDPD3', and a special European Computer Trade Show report, which will bring details of some future releases. Our readers offer in Issue 2 is 100 FREE tickets Show at the Novotel. Hammersmith on October 17th (Special telephone hotline code). Plus not one, There are 3 MegaLoSound

sampling packages up for

grabs, and in the second

competition 12 pairs of tickets to be won for

will be packed with some extra programs too. So order Issue 1 and 2 today, or take advantage of our subscription service that comes with a special guarantee. Take a 6 or 12 month subscription, and if at any time you are not satisfied with Access Amiga, we will send you a refund for any issues not sent out. That is how confident we are that you will love Access Amiga.

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fter designing your stationery pack, the first tool you will want to reach for is your publishing software. But before you do that, let's jump forward to the printing process to see how two methods of reproduction can change the way you lay out and prepare the artwork for each piece of

A popular method of duplicating artwork is photocopying it. This has the advantage of being quick, as there are fewer steps

produce black and white copies, so if you require colour you

Or you could go to a copyshop that has a spot colour copier. These work the same way as a normal copier except that the machine is fitted with different coloured toners which can be selected to replace the normal colour, black. In this way, any

elements on the page being copied will be printed in the chosen If your copyshop has a copier like this, find out what colours their machines are capable of so that you can go back to your design and see how these can be worked into the layout.

The drawback to adding colour to your designs like this is time a copy of the stationery needs to go back through the copier. You will also need to produce more artwork - one piece

work or have it reproduced.

for each colour used - so check with your copyshop before laving Another limitation to look out for is the quality of photocopying. which varies between copyshops, so try and get some examples

pliment slips you might like to try a woven paper like The other method of reproducing your stationery is on a printing press. This is suitable for long runs of 500 or more, and where higher quality is required. Your business card will need to be produced like this if your copyshop cannot photocopy onto

One thing both these methods of printing have in common is how they affect the size of the original artwork. You may, for example, have settled on a page size of A4 for the letterhead. Providing you have margins around the edges of the page that shouldn't be a problem when it comes time to create the art-

But if you were to run all the elements on the page up to the

# PUBLISHING

edge of the paper you would need to output the page to a printer that can handle paper larger than A4 because an A4-only printer cannot print edge-to-edge due to

hardware restrictions. This means using an A3 printer, or check with your convision, who may be able to output your page to an A3

One way to avoid having to use an A3 printer may be to use an A4 printer, but don't forget that even if you manage to run the elements to the edges on your

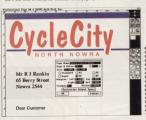
may limit the area of an A4 page it can



# Copy cats

be able to work out how many cards you can fit on a single Worth remembering is that some copyshops will be able to

ware think hard about how you want to lay out your designs and ask your convision a lot of questions to make sure there Ben Pointer discusses how the printing process can alter the way you prepare your designs



that go all the way to the edge o run the ing cut an A4



Before you can design business cards you will need to find out from your copyshop what size card they will be using to print the cards onto so you know how big to make the page

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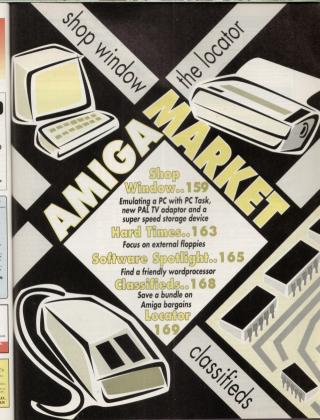
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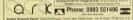
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# PC Task Supplier: Quasar Distribution Phone: 010 61 3 585 1074

ne of the things most Amiga users need to do at one time or another is use files created on another computer. Ideally, they also want to use the same software which means investing twice for the same product, once for each platform.

However this route is not always possible because developers of more serious software often neglect the Amiga market in favour of the bigger profit margins available from the PC and its

Fortunately the Amiga is a jack of all trades and apart from being able to read, write and format disks from other home computers, it is also able to emulate them.

There are two ways in which this can be achieved – by hardware add-one which carn the Arriga into a hybrid machine, or the soft option which uses curring programming to perform the same task. Obviously, having specialist, hardware will result in stater, and sometimes more accurate emulation but not enmulation will not invalidate your warrantee and is an ideal solution on accelerated machines.

PC Task by Chris Hames takes the form of the latter type of emulator and is compatible with all Amigas running Kickstart/Workbench 1.2 or higher with at least 1/2 meg of RAM, although some features do need a minimum of 1 meg.

Nacsard VV or Nacehol 1.2 or nighter with at least 1/2 mag or RAM, although some features do need a minimum of I mag, It will not turn your Amiga into an 80286 or 80386 IBM, but as long as the software you want to use will run on more humble machines, wou should be able to run it via PC Task. In order

to be as compatible with as many Amigas as possible, three different versions of the software are supplied.

These are tailored for the Motorola 68000 and 68020, the standard Amiga processors, plus the 68010 used in some accel-

Create HardDiskFile

# toraign authanga

Ever wanted to run your favourite PC package on your Amiga? Well now there's an ingenious new product that lets you do just that

erators. In order to use the emulators all that is required is to click on the appropriate icon for your particular Amiga. A configuration screen will appear so that the drives can be initialised to recopies the IBM disk format and the monitor mode and screen colorus set. Additionally, the partiel and serial ports can be used either via the emulator or by the Amiga so they are also confirmable.

PC Task allows two Amps flogsy drives to be used as PC drives. They are referred to as R. and B. and changing beat them is performed just as on a PC by typing the device name. Hard disks are also carrated for and it is possible to initiately system from a hard drive partition as long as it is bootable. Because form extraction of MS-DOS do not work on partitions that are larger than 32Mb, this is the largest recommended size.

The emulated graphic mode depends upon which graphics

Quit

adaptor has been selected and ranges from MDA to VGA. MDA is a mono text-only adaptor and allows the text and background colours to be user-defined using the familiar Amiga silder type gadget. The default is CGA which has the highest compatibility because it is the most completely implemented

EGA is essentially the same as a combination of MDA and CGA but has a few more graphics modes. The more modern VGA is also available, but only to users of AGA Amigas (ie Kickstart/Workbench 3).

Once suitably defined, the settings may be saved to disk better initiating the emulator by clicking on the start button. MSDGS is not supplied but as the intended user should allow have access to as IBM disk is no great loss. MSDGS 450 or 92.3 is recommended and can easily be copied arous from your PC. Instructions to produce a system disk are included, which will allow a family of essertial commands to be used. These are built into the emulator and include cd, dir, del copy and tree related that and did.

Files may be transferred between Amiga and PC disks using the two supplied utility programs CopyToA and CopyToI. These are initially on the supplied Amiga format disk and must be copied to a PC format one before they can be accessed and executed by the emulator.

A script has been provided to perform this task and is executed by clicking on an Amiga icon. There is no reference to this in the user manual which may confuse users who launch straight into the emulator without looking through the contents of the disk.

IBM PCS are limited to 640k of RAM while most Amiga owners have one megabyte. In theory it would be possible to have the emilator loaded with access to 640k. However, PC Task looks for a contiguous block of chip or fast RAM which will not be available on Workbench/Kickstart 1.3 Amigas with a half meg expansion.

This is because chip and fast RAM are in separate locations. PC Task works with either type of memory and will choose the one with the largest amount. To gain full use of the emulator, a hardware modification may be made to obtain a megabyte of

97-155 9 1992-9 Simis dames. All Figure reserved the Golde. This is westen 2.83 Serial#18538 Quesar Distribution	MOR Colors  Graphics Rdapter (†) (GR)  Use Serial V  Use Parallel V			The PC configu screen
R DF8: 8 DF1: HardDrive (		≤1 ≤1-1 ≤1648 ≤164	N	

Use Defaults

Save configuration



chip RAM. Alternatively, more fast RAM may be added which will have exactly the same result on the performance of the

PC Task does not take over control of the Amiga and is quite capable of multitasking. By default, it sets a priority for itself so that it gains as much processor time as possible. When is is not being used, the priority is changed so that it gains as little processor time as possible. This way, whichever task is being used, it will not significantly suffer due to processor shar-

Because the emulator will only read disks that have the IBM

former to use the Amies's hard drive takes a little bit of setting up. There are two ways that this can be done - the first is by far the easiest and involves creating a hard disk file.

Essentially, a large file of up to 32Mb is created from the configuration screen, the emulstor booted and the file formatted.

The other method is more complicated and the manual recommends that only advanced users attempt it. This is because mistakes could easily result in the loss of data from the hard disk. Strangely, the manual does not recommend that a backup is made before attempting to create a hard disk partition.

needy and

Presumably advanced users are supposed to realise that making a backup is a good idea and they don't need any prompting.

Although the emulator is limited to two hard drives at any given time, there is no reason why more cannot be created on systems with a large disk capacity or multiple drives. The two that are actually used are defined just before emulator startup. Because booting does not take very long it would be reasonably painless to exit emulation in order to switch drives.

As well as being run from Workbench, it is also possible to run PC Task from the Shell. Some configuration features are not available from the nations screen and must be accessed by invoking the emulator with command line arguments or by adding tooltypes to the icon.

#### Advanced options

Once the emulator settings suit your requirements you may become irritated by the settings screen which appears every time the software is executed. One of the additional options allows this to be bypassed which is a particularly welcome fea-

Among the other advanced options, there is one to change the four Most however are less cosmetic and allow the software to be used on and configured for as wide a range of Amigas as possible.

In this vein, there is a choice of serial and parallel ports on machines that have more than one of each and the ability to ignore a GoldenGate I or II board. There is even an option which allows the 68020 version of PC Task to be used with bad 68030 boards which can't read from odd locations

Despite the fact that the emulator is only capable of emulating a primitive PC, the product has one surprisingly forward looking capability - CD support. PC Task comes complete with its own CD-ROM driver which, when combined with the MSDOS CD.ROM extension software, should allow access to PC CD ROMs via an Amiga CD drive.

PC-Tack U2.83. Copyright 1992-93 Chris Hames, All rights reserved. To start the mouse driver press LeftAmiga-P. To quit press the left & right Amiga keys and Del. Memory Available: 640K (location \$88365DB8 allocated 1824K) bive A is: DF0 bive B is: DF1 rdDrive C is: Unavailable 20f-2M paites urment date is Fri 01-04-1980 uter new date (mm-dd-yy): 09-02-1993 urment time is 1:09:29.28a uter new time: 10:32 crosoft(R) MS-DOS(R) Version 6 (C)Copyright Microsoft Comp 1981-1993.

> ring the intervening period little has changed, MiniGen L500 with the exception of slightly better keying quality when using interlace. As for the design, the same story applies with only the most rudimentary genlocking controls providing three basic on/off keying states.

Connecting up follows the usual format with the en plugging directly into the 23 pln video-out on the rear of the machine. As for video signals, life couldn't be much simpler with just two phono connections handling the incoming and outgoing video respec-

On the top of the unit awaits the single three-way toggle control. Unlike most genlocks the MiniGen has no dials or faders, in fact control is strictly a matter of flicking between mixed, picture or graph Basically this means you can have the Amiga

graphics keyed over the incoming video, the video on its own or just the Amiga graphics minus the video. As you might expect this all or nothing

roach doesn't exactly lend itself to creative freedom, but for £49.95 it's still worth consideration if your

Replacement PAL TV and video adaptor Supplier: Lola Electronics Phone: 0858 880182 Price: £49.95

For those who've been kicking around the Amiga scene for some time the accompanying picture of Lola's MiniGen may look more than a little familiar This isn't exactly surprising as the basic design of MiniGen has remained pretty much the same for almost five years.

Although the look may be familiar the name may not as the original MiniGen was superseded early on by an almost identical unit from another supplier which profited from much better marketing and hence captured huge sales back when the Amiga video market





#### Lola L520 Adaptor

Replacement PAL TV and video adaptor Supplier: Lola Electronics Phone: 0858 880182 Price: 529 95

Although the standard Commodore adaptor is a pretty hardwearing beast, accidents do happen, and if the aforesaid add-on happens to be your only window on your Amiga – courtesy of a TV – your computing exploits can come to a sudden and very abrupt end.

Worse still, since the demise of the A\$00 finding a replacement Commodore original has become almost impossible. Eneer Lola Electronics, a company only too willing to step in and save the day with their very on designer replacement.

Although swathed in black, the Lola offering is very similar to the old smills Commodore Adaptor, being roughly the same size and with almost identical input/output options. Why Lola choose black rather than a subtle beige is a mystery, but if it works, who cares?

works, who cares?

Although the casing is slightly different installation is almost identical with the unit slipping into the 23 video slot as if it was made for the job – which furnily enough it was.

Once safely entrenched you can move on to the twin video/TV outputs and the tingle audio-in on the rear of the unit. For those who may be a tad confused as to why there's a audioin, the answer is all to do with television.

Alongside the audio-in sits another RCA/phono connection labelled TV CH36. As you probably guessed this provides the

ned the actual keying

quality is acceptable for home use. Obviously with the lack

of subtlety MiniGen is per

haps at its best when used in

from Alternative Image or perhaps Scala HVT – both of which retail around the £50

Either program can provide various wipes and

rolls adding a certain amount of glamour which

If you don't take your videography too seriously it's

trol the Roceen from Roctec Electronics retails for

than family footage. If however you fancy a bit mo

an additional £20 but does boast a fader and slightly

mable buy, but a bit too basic for anything other

oach of the genlock.

better image quality and keying

RF-out suitable for connection direct a TV via a phono to RF cable – which comes as part of the overall Adaptor package.

However in order to get the Amiga audio as well as the video combined within the RF signal yet another 5 phono connector is required again supplied with the unit — which takes the audio from the left and right phono sockets on the rear of the Amiga and combines them via the audio in on the adaptor to produce an RF signal complete with a combined mono audio.

All that's left is to select channel 36 on the TV and up pops the Arriga in all its monophonic glory. However that's not the end of the adaptor story as an separate video-out also lurks on the rear.

Thinks to this output you can not only use a TV as a surrogate monitor but also record the Amiga's output on video – without the need for an encoder or genlock.

Admirtually the quality isn't avverte broadcast it.

Admittedly the quality isn't exactly broadcast but if you want to put your animations or artwork on tape there's no cheaper way of doing it.

### HyperCache Professional

Hypercache Professional Supplier: Meridian Distribution Phone: 081-543 3500 Price: £46.95

Any product that claims to accelerate AmigaDOS storage devices by as much as 2,200 per cent has to be worth a look, particularly when it's done with software! Hypercache professional makes just such a claim but before putting it through its paces, let's see what it actually is and done.

To quote from the manual, "Hypercache Professional is an N-way associative look-shead cache system for any block-accessible device," Essentially, what this means is that it is a system that reads data from a backing store (whether that be disk, a SCSI tape system or CD-ROM) in anticipation of a request for that data by any program.

The technique that it employs is usually found on mini and mainframe computers to implement virtual memory, and it is unlike that any other such program is currently available on the Arnisa.

On such machines, programs like this are of little concern to users for the simple reason that they form a part of the operating system. They are transparent to the end user – their presence is not apparent and system peformance is often attributed solely to the hardware.

To test the software, we used the default settings on an



The Lola 520 – plug in and go

AS00 Plus, accelerated AIS00 and A4000/040 and measured performance with the Diskspeed utility.

Surprisingly, both the 86000 and 86030 versions of HyperCache caused the dreaded guru to appear when the hard drive was accessed. However on the A500 Plus and A40040 the program did run so here are a few results:

# Testing directory manipulation

Without Hyper	Cache	With HyperCac
le Crease:	16 files/sec	19 files/sec
le Open:	29 files/sec	42 files/sec
Directory Scarc	95 files/sec	182 fées/sec
le Delete:	44 files/sec	69 files/sec
ieek/Read:	43 seeks/sec	141 seeks/sec

# Testing directory manipulation

speed on A4000/040			
Without Hyper	cache	With HyperCache	
File Create:	31 files/sec	39 files/sec	
File Operc	69 files/sec	262 files/sec	
Directory Scarc	350 files/sec	1042 files/sec	
File Delete:	206 files/sec	348 files/sec	
Seek/Read:	73 seeks/sec	870 seeks/sec	

Based on this information we suspect that the claimed increase of 2,200% per cent is either a theoretical figure or cours under special conditions. Having said that, there is a significant increase in reading from hard drives and so HyperCache Professional could prove to be a useful utility for users with a spare half meg GRM.

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#### Roclite

If speed and style are what you're looking for from a floppy the Roclite is the drive of your dreams. The unit itself is by far the smallest, slimmest and fastest drive we had on test. At roughly twice the speed of the standard Commodore

internal it's pretty impressive - and barely makes a sound in Unlike some of the opposition, the Roclite comes with both

anti-click and anti-virus which when combined with its pure elegance and speed make it a very attractive buy. If you're looking for a stylish slim-line drive that can outpace the opposition but still retails at a very respectable price, the

> Price: £59 Supplier: Silica Systems Tel: 081-309 1111

Cumana drives have been around as lone the Amira and to their credit I'd be surprised if the very first unit out of the fac-

Sturdy, reliable, boring, noisy - that's the Cumana. In fact, we're talking the computing equivalent of the Volkswagen Reetle

If you're not after the whistles and bells of more modern drives but simply want an external that will last longer than you will, the Cumara is the perfect choice.

> Price: £49.95 Supplier: Cumana Limited Tel: 0483 503121

# Power PC880E

Rorline is the answer

Now here's a drive that's fit to burst with additional feature Aside from working as a standard floppy, the unit also boasts an anti-virus mode which immediately write protects all the your floppies by completely disabling the write-to option The next feature is a slightly dubious addition which takes

the form of a software/hardware cooving system entitled Blitz Copy. As you might have guessed, this isn't meant for normal

AmigaDOS copying tasks and that's about a far as we should go with this particular line of thought. Although rather long, the drive still remains surprisingly thin

considering the amount of hardware stuffed inside As an all purpose drive the PC8808 has to be one of the best buys on the market especially when its obvious flexibility is combined with a very reasonable asking price. Available in both black and vanilla.

> Price: £60 Supplier: Power Computing Tel: 0234 843388

This month the Market spotlight falls on perhaps the most popular Amiga peripheral - the essential external floppy

#### Zydec

If you're repelled by the designer label look the Zydec offering provides the minimalist styling and space conscious design that any environmental-friendly Amiga user would happily swap his Although small and amazingly quiet considering the lack of

any anti-click hardware, the Zydec does have a few faults in Because of the extremely slim design, Zydec have been forced to add vents on the top and to the rear of the drive. Although this may seem a perfectly acceptable design, a coffee spill could soon change your mind.

If you're looking for a basic but efficient drive the Zydec is fine, but considering the extra features on many of the opposition's models I must admit it wouldn't be my first choice unless desk space was extremely tight.

> Price: £52.99 incl delivery Supplier: Eyesham Micros Tel: 0386 765500

## **Power Dual Drive**

As the name suggests, this offering from Power Computing is a twin drive comprising two PC8808 drives in one amazingly small case. Like Power's single drive, both units offer the anticlick, anti-virus and Blitz Copy. The drives themselves are totally independent as far as the

Amira is concerned and like all the disks in the mundum through ports and on/off switches are provided.

Unlike all the other drives, the Dual Drive also boasts a separate power supply - an extremely useful addition if your machine is already heavily laden with additional

It's worth stressing that the anti-virus option does not actually check for a viral presence. Both the single and dual drives simply disable the machine's ability to write informa-

If you're in the market for a twin external system the Dual Drive offers a compact, economical and feature-packed answer that avoids the power problems often encountered on heavily expanded systems

> Price: £125 Supplier Power Computing Tel: 0234 843388

# Power PC88

With the everyday abuse the average internal has to endure replacement of your original drive is often essential - especially if you use a lot of commercial games which often drive the long-suffering internal to destruction, courtesy of sometimes brutal copy protection.

If you find yourself in the unfortunate position of owning a dicky internal, Power Computing offer replacement kits for both the A500 and A2000 which are simplicity itself to install and use the same basic drive unit employed in the external

> Price: £45 Supplier: Power Computing Tel: 0234 843388

# Power XL Drive

Last but not least comes a pinnacle of external engineering, namely the Power XI, high density drive. Once installed along with a small patch program, the XL allows any Amiga to

share the 1.76Mb storage available only to the A4000 In addition to high density use, the drive can also read standard 880k disks automatically. Better still, it will read and write PC disks whether they are high (1.44Mb) or double

(720k) density. Although rather pricey when initially released, the drive has had a dramatic price cut and now ships with ten high density disks for a very reasonable £99.95.

If you take your computing seriously and regularly need to transport large files, the XL is a real bargain.

> Price: £99.95 Supplier: Power Computing Tel: 0234 843388



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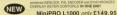
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