

# AMIGA

COMPUTING

The **digital** highway

As a digital day dawns

we plot the Amiga's

position in the new order

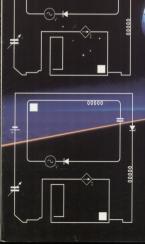
## **Product reviews**

Studio 16 - The ultimate in direct to disk sampling CD-Rom - The latest SCS drive taken for a spin Final Writer 2 - Could this be the ultimate WP? Digitiser - Get the best grabs in the business Distant Suns 5 - Explore

# SYSTEM

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AoAse CO35 back Wine Commander and Dangerous Streets



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This superb monitor offers a high quality 0.28 dot nitrh and low radiation total MPR-II compliance.

Monitor Comparison

Pitch Input Approval Price 0.28 Analog RGB £349.99 Commodore 1942 Commodore 1942 14" 0.28 Analog RGB MPR II nlus external Stereo Speakers

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4 pages per minute of crisp, 30% output.
100 sheet, multi purpose paper (A4, letter, legal and executive) 28 internal bitmapped fonts HP laserjet series IIP
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4) Continuous Paper 2000 sheets I part listing paper Parallel Printer Cable o be used when connecting Amiga to

Panasonic KX - P5400

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#### KX - P2023 Panasonio



Quiet printing 46.5 dila standard mode, 41.5 d Recently reviewed by Arniga Format \*A fine 24-pin dot



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## Laser Printing

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9 HP laserier III emulation, PCI. Optional 2nd input bin (total printer capacity 2X 200 she Optional memory expansis SMb (LMb as standard)

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OPAL VISION VIDEO PROCESS It's a high quality real time 24 - bit frame grabber which do

a man quarter real time 24 - bit frame grabber which does not converter, it's a professional quality gradicer which from such the converter is a professional quality gradicer which from such the converter is a professional quality and professional prof



Included with every Video Processor, the Qoal vision Rosset or disprovides at endless such as the control of th £899.99

AMIGA 4000 / 030 New Low Price

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legamix. Low cost, hi spec digital effects carridge plugs into the printer port of the Amiga

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mbo Vidi Amiga 12 (RT) Based on the ng Vidi Amiga 12. This all new version offers real

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Real 3D V2-1s 4 is faster with 3D selecation modeling and rendering program. With Real 3DV2 you can produce high quality images and animations of three dimensional models with an accounting level of realism, images centering an arimation other shows a handful of balls bounce down a flight of status to die bottom. Gravity, collision, defection and the earth by of the last are of a lactomication proclassed by the program. Intol Prefix 213:5-8.

BRILLIANCE "Brilliant "Graphics Paint Package" terms of design and sheer specifications Digital reations really seem to have done everything right. Fectiveness." 97%. "I really can't fault the end results"-CU Amiga Review
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The most powerful word processor grace the Amiga\_90% - CU Amiga DI PRICE 299.99 FINAL COPY 2 "About as close to being a desktop publisher as a word processor dare go" - CU Amiga INDI PRICE 662.99 107.77

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BATMAN RETURNS

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mance 4Mb 32 bit RAM expansion board with a 20 MHz Floating point unit to an Arriga 1200 and you performance potential, include a Rombo VIDI Amiga 12. The Worlds Best Selling digitiser - and limage in and Image Processing is all within your graps. Mono Images are captured in real time, colour images in

A1200 Microbotics Memory Expansion Boards and Acclerators

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# LONTENTS



FEATURES
SURVIVAL GUIDE TO DIGITISERS
Professional advice on how to get the best grabs in the
LONDON TRANSPORT MUSEUM

DATA REGISTRAR	74
We talk to the people who keep big brother in his place	
Пения Опинент	207

3F

44

RR

98

Denit a Linanture	107
Software inspired by the cinema: a sad excuse for box-shift	ing or just good business?
PROGRAMMING ROUND-UP	110
I NUUNMIIIIIIII NUUIIU-UF	115

Fancy learning a language? If so, why not take our expert advice	
UPDATES	127
Studio 16 v3, we explore the ultimate front end in direct to disk recording	

# REWIEWS

PAR	50
A new era for Amiga videography - digital video is here at last	
Bargain Buys	56
OCR on the cheap ● Inky solutions ● More sound for less money	
Ami CD-ROM	79
At last a CD-ROM for the big box machines, but alas no FMV	

DISTANT DUNS	
To boldy go a bit further than before.	The cosmic journey continues
FINAL WRITER	

As Wordworth 3 battles with the bugs, Final Writer turns up trumps The ultimate in optical technology you can share with any machine

Mo-mica ESI

# Next issue on sale MAY 23

# THE COVERDISK Page



### K-Spread 2

If you regularly lose control of your finances then K-Spread 2 is the program for you. This fully-working spreadsheet application will make sense of your financial worries and organise them!



#### Ilinus Charlear IIE 74

The Amiga's premiere virus killer from John Veldthuis, Fradicate any viral infection and remember - Safe Hex always!



Find out just how fast your Amiga really is in this powerful benchmark program

Take to the skies in your trusty biplane and deal death amid the clouds

Тапк

Collect the flags and return them to your base in this great multi-player game

# **RECULARS**

IICMA	a a
Amiga support assured as Commodore faiters	
Пент Моптн	14
Find out what's in store in our July issue	

Find out what's in store in our July issue	
Comment	16

Why do so	many	games	refuse	to	instal?	Paul	Austin	asks
-								

GETTING STARTED	19
How to get the very best from the Amiga Computing	CoverDisk

74	RREHH The language that almost every Amiga program can understand
177	Uideo Titing, editing, hardware and software, it's all here

	The language that almost every Amiga program can understand
177	Uideo Titing, editing, hardware and software, it's all here
179	Comms The audible side of the Amiga explained and explored

101	Make sure you're a part of the E-Mail explosion	
173	АПенн	

174	From pixels to paper - the definitive	e guide to DTP	
	From pixels to paper - the definitive	e guide to DTP	

DISK	OFFERS	27
Ungrades a	-ao-ao. If you've act the software w	hy not add a manual

ESP					61
For people i	who don't p	ull any p	inches –	the letters p	oage from he

ACAS	67
you need a hand we're here to help	

PUBLIC SECTOR Adam Philips provides a potted guide to the best in PD

AMI	GA GUIDE
Start a BBS	166

	Start a DDS	.00
i	AmigaDOS 3.0	170
-	Assembler	172

Classifieds 184

# CULLER



As we enter the digital age Paul Austin examines the Amiga's place in the new order See page 30



# Subscriptions



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Turn

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# HiSoft BASIC 2



Your programs can be written with the integrated, multi-window editor where there is a complete range of features that allow you to create, edit and run your BASIC

paste, bookmarks for quick reference, fast, case-sensitive search and replace, flexible organisation of your text windows, compilation at the touch of a key and much more. The editor takes full advantage of the new features of

## The Compiler

1656f BASIC 2 is a compile that field that an interpreter when you use it from which the integrated continues the field that the integrated continues the field that the continues the field continues that the continues that

#### The Debugger

This is a medium-code-level debugger, which displays the source code and object code of your program at the same time. You have access to all your BASIC sub-program and function names and you can step through the BASIC source code by line, setting breakpoints as appropriate.



HISOT BASIC 2 comes with libraries that let you access the leatures of all versions of the Amiga operating system from Workberch 1.3 up to Workberch 3.1. The standard Amiga names are used, as described in the ROM Kernel manuals, making it away to frandate examples from C. There are examples of using and displaying IFF files, Datalypes, Gadtools gadgets & menus, Tasks, Sound etc.

#### The Package

The Libraries

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an order using your Mastercard, Access, Visa, Switch, on receipt of your order which will be no longer than 28. days and usually within 5 days. For goods in stock we can offer a next day delivery service for £6.

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HiSoft BASIC 2 @ £79.95 + £2 p&p Upgrade from HiSoft BASIC 1 @ £39.95 + £2 p&p

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Name: Address:

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# Amiga support pledge N lasses conti

SOFTWARE and hardware developers have promised to continue supporting the Amiga even if Commodore fail to survive their cash crisis. With a massive user base for the com-

puter around Europe, companies are confident they can continue to make profit from Amiga products for several more years. Their commitment comes as financially-

troubled Commodore posted an \$8.2 million loss for their second guarter - traditionally the year's most successful sales period. But sales slumped to just \$70.1 million from \$237.7 million in the corresponding period a year ago and shares in the company sank from \$3 to 37 cents each on the

The weak performance was blamed on

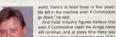
firm's ability to supply products and poor economic conditions in Europe -Commodore's key market.

Although the cash shortfall has been cut back considerably, the company had predicted they would return to profitability in

the guarter and now maintain negative equity. They have warned that without financial help they could be thrown into reorganisation or liquidation proceedings, and are talk-

ing with creditors about proposed restructuring Power Computing boss Tony Laniri's comments were typical of those from Amiga developers

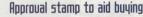
"With so many Amigas in use around the



speculation of an imminent take over of the But Commodore's managing director for finance and operations, Colin Proudfoot, is

confident the company will continue trading: "Commodore have the survival instinct," he higo "Market conditions will improve -

our restructuring programme has already resulted in reduced losses - and demand for our product will continue to grow in 1994.



have the survival instinct

The event will be at the Novotel Hotel in Hammersmith andon and according to the organiser has a line up of chibitors including HiSoft, Meridian, AlfaData and Power

Free tickets for Amiga show

They are expected to show several new Amiga ducts including a 12-bit sound card for the A1200, new Itware from the United States and a range of CD32

A SCSI hard drive controller for the A4000 will be shown or the first time and Microvitec plan to display their latest utilit-sync monitor, the 1438.

From German peripheral manufacturer BSC there will be a 1200 ROM drive and Golden Image promise to offer dis-

nts on their hardware. he first 200 people to call 081-345 6573 and quote rence AMC1 will each receive free entrance.

A SEAL of approval aimed at making life easier for Amiga owners looking to buy software and hardware is soon to be launched by Commodore

The manufacturer says the stamp will be issued only after third-party products have undergone "rigorous" tests in their US and UK offices.

Disk drives, scanners and TY SEAL OF memory expansions are expected to be among the first peripherals to be given the seal, and should be available within the next few weeks. WOOD

But already the scheme is facing difficulties, with several players within the market saving they are unwilling to pay hefty fees to Commodore for the use of the stamp "We want to give users reassurance

when they invest in a machine," said Commodore's David Pleasance.

"The seal of approval will provide that reassurance - a guarantee of quality for the best peripherals and software." But one industry figure, who didn't want to be named.

said end users could find themselves picking up the costs of getting products approved



# NEWS BRIEFS

# Aminet goes (D

A CD-ROM containing 3,800 Amiga programs from the Aminet Internet archive is now available from Gasteiner (081-345 6000).

Its 650Mb of software ranges from games to business applications and programming tools, and contains more than 100 demos of full price packages.

According to Gasteiner the Aminet

100 demos of full price packages.

According to Gasteiner the Aminet disc is in ISO-9660 format and can be read from most CD systems. It cannot be hosted from CDTV. Price, £49.99

### Handy colour

POWER Computing (0234 843388) will soon add an 18-bit colour hand scanner to their range of Amiga products.

to their range of Amiga products.

The £149 device will come with the full version of Migraph's optical character recognition software and should be compatible with all Amigas.

# 68030 comes cheap

VIPER will be the A1200's cheapest 68030 accelerator when it is launched by Bedford-based Power Computing (0234 843388) in the next few weeks.

The board will feature a 28MHz version of the 68030 and be able to accept up to 128Mb of memory. A battery-backed clock will come as standard and SCSI-II as an option.

Prices remain to be finalised, but head of the company Tony Laniri expects the unpopulated board to cost in the region of £150.

### Pegger spreads Jpeg

A UTILITY which has been designed to enable programs that don't support Jpeg images to use them automatically has just found a British distributor.

By monitoring drawers, Pegger is able to convert Jpeg pictures into a format compatible with most Amiga packages, and its compression is claimed to offer great hard disk saving.

It sells for £99.95 from Meridian Software Distribution (081-543 3500).

### Colour refills

COLOUR inkjet printer owners can now refill empty cartridges using Tri-colour Refill. The pack includes 20ml each of magenta, yellow and cyan inks. It is sold by ilford-based Jerome Russell (081-478 7771) for 99.99.

# CD-ROM likely for A1200

IT is now likely that a CD-ROM drive for the A1200 will be launched by Commodore this autumn

The device has been under development for around a year, but last Christmas the firm announced the prolect had been shelved because of technical difficulties.

Commodore are now considering the release of the CD1200 without

compatibility for Mpeg full motion video.
When plugged into an A1200, such
a drive would be able to lead many
CD32 games and audio compact
discs, but unable to play video CDs
or software containing video clips.
Release of the drive is likely to delight
the many A1200 owners who have asked

for CD compatibility, but CD32 players are worried that it will hold back FMV games.

They believe some games makers will hold back on developing titles containing video footage because they will be able to sell discs to owners of both

machines without extra work.

According to industry sources the drive has already gone into production for sale in Germany, and Commodore say they

sale in Germany, and Commodore say they
have not set a provisional price for the British
market.

CD1200, A1200 to
he alvan CD470M strive.

# London gets dealt an ACE

THE second Amiga Centre of Excellence (ACE) has just opened in central London.

The new centre is run by multimedia specialists Premier Vision and aims to provide a one-stop service for professional users looking for complete solutions.

It is hoped that ACE will spread nationwide and into Europe – with each centre combining advice and technical help with the ability to tailor a system to individual customer's needs. "We'll continue what we've always

been doing - but much better in central London," said Premier Vision director Andy Gould. "The concept of ACE is a very good thing for the Amica."

Commodore's multimedia sales manager Kieron Sumner added: 'More and more professional users are turning to the Amiga as a uniquely versatile and affordable platform. 'What ACE offers them is a dedicat-

ed, knowledgeable base to tailor a complete package to their particular needs."

Premier Vision are at The Foundry.

156 Blackfriars Road, London SE1 8EN. Tel: 071-721 7050.





# Music-X makes music easy

MIDI sequencing program Music-X has been improved with the addition of new modules aimed at making it easier for musicians to create songs.

Among the new features is a better Amiga Audio Player which gives more than a dozen extra Midi commands and recognises Attack Velocity when playing samples.

samples.

DeFlam module has been added to allow grace notes and finger crushes which occur during recording to be removed without quantizing.

An improved Quantise module aims to allow more accurate selection of what to quantise and has support groups such as Triplets.

And sequences can be printed to a file or

disk for editing using the new Print Event List feature. Version two also comes with Notator-X, a

Version two also comes with Notator-X, a wysiwyg notation publishing program which allows both packages to be run together to transform scores without needing disk access.

The £149.99 software is expected to go on sale during July from The Software Business (0480 496497). Upgrades from earlier versions should be available within the next few weeks.

# CD Amigas access PhotoCD

PHOTOWORX is the first Kodak-licensed software to enable Amigas fitted with XA-compatible CD-ROM drives to access Photo CD.

Images are loaded into the computer by the user double-clicking on the mouse and the program has support for all Amiga screen resolutions.

Owners of OpalVision EGS, Picasso, Retina and Piccolo will see the benefit of their graphics boards and there is a range of image processing capabilities.

Pictures can be saved in Amiga IFF file format and output to mono or colour printers. It sells for £89.95 from Blittersoft (0908 220196).

PhotoWorx: The first PhotoCD software for Amigas

Amiga Computing

JUNE 1994

# You can't use Software this Powerful, and produce Documents this Good...



Unless, you buy an expensive PC or Macintoshi, a high priced Colour PostScript Maser Printer, and a complex, costly Desk Top Publishing Package... If you're looking for a quality Word Processor/Publisher that performs as well as this, you may well start by searching through PC and Apple<sup>TM</sup> Macintosh<sup>TM</sup> software catalogues.

Even then though, you probably won't find a program that will combine the very best in Word Processing and... easy to use integrated DTP type facilities.

You certainly can't find software for your Amiga that's capable of all this...



...or Can You?

peripherals - NewTek's Video Toaster.

The system, which manipulates graphics, animation and text with video. has already become popular with television production companies across

Now, by combining it with Prime Image's Passport 4000 converter, the Video Toaster can be used with Europe's PAL broadcasting system. Although expensive for everyday Amiga enthusiasts, the device is a cheap alternative for traditional TV and film equipment needed to make too video effecte

The Video Toaster makes it possible for A4000s to perform a number of digital effects to progress from one video scene to the next. They include video frames which fly out of the screen, poured water.

shattered glass and torn page - in addition to the producer being able to

And animators will be targeted for its sophisticated Lightwave software. which can be used to render and sculpt images. Commodore's national multimedia sales manager Kieron Sumner said:

\*Every Amiga user realises the huge potential of the range. The Video Toaster changes potential into reality. "I'm convinced its availability here will propel the Amiga towards domina-

tion of the TV special effects market." Experts, however, say the conversion lowers the quality too

much for it to be used professionally by the European television and film industry NewTek, who deny rumours that they are working on a PAL version of

Video Toaster, can be telephoned in Kansas, USA on 010 1 913 228 8000 and Prime Image on 010 1 408 867 6519.



Video Toaster to Europe



£50 price cut

# CD32 price tumbles in summer promotion

otion aimed at stimulating sales of the

The move brings Commodore's new Spectacular Voyage pack down to £249 and according to the manufacturer makes the machine the best value games console in

he worth.
Inside the bundle, the CD32 is accompanied by two softwa
tles, Psygnosis' Microcosm and Renegade's Chaos Engine
nd, while stocks last, four games from the Dangerous Stree

Commodore's David Pleasance said: "Amiga CD32 is not just the world's most sophisticated games console – it's also a gen-

ne home entertainment platform.
"At this new price it just obliterates everything else on the arket. If you want to buy a console there's simply nothing else orth considering."

# Onalllision promised to set new standards

A COMPLETE OnalVision Desiston Video System which is claimed by its maker to set new standards was launched recently in the United States

The main board - which is already popular with Amiga owners - gives a true 24bit display with a palette of 16.7 million colours, and comes with leading paint program OpalPaint. Adding the OnalVision Video processor

provides hundreds of pre-defined 3D digital video effects as well as an unlimited number which can be usercreated. It features a real-time 24-bit frame grab

ber - which does not need a time-based corrector - and a genlock with chroma. luma and transparency keying. Software is supplied for the creation and editing of digital video effects.

Completing the system, OpalVision Video Suit is an audio and video mixing, switching and transcoding device

It is a rack-mountable video switcher featuring nine video inputs with Video In and Out available simultaneously in RGB or Y/R-Y/B-Y. Composite and S-Video

A linear transparency key provides control between two video sources on a pixelby-pixel basis, and the ten-input audio mixer is software sequenced

"OpalVision sets new standards for the desktop video industry," claimed OpalVision project technical director Gary

"The quality and variety of our digital video effects, the versatility of our switcher and the breadth of our functionality puts OpalVision way ahead of the nack "

Rayner.

The system self-configures for both PAL and NTSC modes and is available in Britain through Indi (0543 419999), The main board costs £349 and each module is priced £899

### 68060 heads for Amiga expected to increase the speed of applications by two

performance of an unaccelerated machine by doubling the processor's speed The 40MHz version is expected to cost

£250 and the 50MHz model will be priced just under £300. Gordon Harwood are ASS's British distributor and can be telephoned on 0773 836781

Speeding up with

German hoards

TWO boards designed to boost the

speed of the A1200 and A4000 are due

for imminent release by Germany-based

developer Advanced Systems and

Blizzard 1230-II Turbo Board comes

with a 68EC030 processor running at

40MHz, a SCSI-II DMA controller, a bat-

tery-backed clock and can be expanded

with a 50MHz processor and a memory

managing unit will be available for the

applications such as virtual memory or

remapping of the Kickstart operating sys-

tem to fast RAM instead of using it from

ASS claim their second board will give owners of A4000/030s twice the operating

The MMU is used by the Amiga in

A high-end version of the board fitted

with up to 64Mb of memory

Software.

speed hungry.

elower BOM

## Ramba maue

ROMBO, makers of video digitiser Vidi-Amiga, have moved to 2B Young Square. Brucefield Industrial Estate, Livingston EH54 9BX. The new telephone number is THE first Amiga accelerator to use Motorola's top-end 68060 processor is promised for release this summer from specialist Advanced Systems and Software. Cyberstorm 060/50 will use a 50MHz version of the

chip which the developer claims will boost the A4000's operating speed from 18 million instructions per second to 70mins

The £1,200 system will consist of a Cyberstorm Carrier Board fitted with a CPU module and a memory board that

can accept up to 128Mb of fast RAM. A4000 owners who do not need quite as much performance from their computer will be targeted for the £800 Running a 68040 processor at 40MHz, the board is

"significant" performance increase

and a half times compared to a standard A4000/040 Both products will have extension capabilities. A cache module which connects to the CPU is promised to give And a communications module still under development

will provide a SCSI-II interface, and Ethernet controller and high speed serial ports Looking to the future. ASS boss Wolf Dietrich says that

Cyberstorm based on a 68060 running at 66MHz should run top-end Amigas at more than 90mips. Advanced Systems & Software can be telephoned in

Germany on 010 49 69 5488130, and their British distributor Gordon Harwood contacted on 0773 836781.

Cyberstorm 040/040. Amiga Computing

0506 414631





# Put Your Finger on the Buttons of the Ultimate Amiga Word Processor Final Writer is not just a one-off product...



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is now available to you along with a list of fea-

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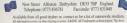
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# The If you enjoy Amiga Computing's balanced approat to the Amiga market, you won't want to miss July's crop of reviews and in-depth features

On sale 出 May

If you enjoy Amiga Computing's balanced approach



W9IU



Next month's Amiga Computing is a must for all serious Amina owners! Covering the first full expansion system for CD32, the long-awaited Imagine 3.0 graphics package, the latest version of the Amiga's premier music system Bars&Pipes, a roundup of the best video

digitisers on offer, and our usual blend of tutorials, articles, and technical advice we can assure you that your Amiga money will be well spent.

Add to this the hard-hitting System games coverage of Rise of the Robots King's Quest VI, and Heimdall 2 and you have a package that's hard to beat Whether your interest is in home office DTP, video, games, programming, or just messing around, Amiga Computing is your only all-round magazine



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hanks to information supplied during recent surveys it's became obvious that floppy-based Amigas are in decline. According to our research at least 40 per cent of Amiga Computing's existing readership are already devoted hard disk users.

Add these existing converts to the battalions of floopy users who intend to upgrade as soon as the cash becomes available and you have a strong argument in favour of installation.

Given these facts, it would appear a strange marketing plan to exclude the hard disk from any imminent software release. Even so, a fairly extensive straw noll of names enthusiasts came up with an estimate that only about 40

per cent of names sold ship with an installation This is even more annoying when you consider that almost every productivity package sold on the machine offers the option to install as standard.

Obviously in certain areas of the games market the situation is very similar, as most graphic adventures and simulations also ship with

In most cases such games usually - and quite rightly - insist on some form of password protection, either in the form of a code-wheel or via the manual. Great, I've got no problem with spending a second or two deciphering the occasional code, so why not extend the procedure to all Amiga games?

In their defence, most software houses would claim that due to the sheer size of such games, installation is almost a prerequisite. In addition, software which fits into this genre usually sells to the more mature games enthusiast who is - in their pointon - less likely to pirate

Add to that the complexity of such games and the subsequent dependency on a manual and you have a much more secure platform for sales. All fairly logical argument perhaps, but in my experience a pirate isn't likely to hang up his or her Jolly Roger just because they've This argument is bolstered by the PC mar-

ket, which is becoming increasingly ravaged by the scourge of software seas, and yet almost every PC program sold offers installation as standard, and when they don't, sales often plummet

Basically the problem appears be one of perception, Amiga users are obviously seen as potential criminals in the eyes of software

# Hard times



With the huge increase in hard drive sales why is it so many Amiga releases still don't install? Paul Austin outs some old excuses to the sword

developers. But if we're nothing more than computer-based kleptomaniacs, why is it that the Amiga still accounts for 50 per cent of total computer games sales in the UK?

This figure becomes even more impressive when you consider the Amiga is probably outnumbered by the PC by a factor of at least ten to one. I'm not trying to suggest that there isn't a piracy problem on the Amiga - of course there is - but the same is equally true on the

PC platfor

It's high time

that software

houses had more confidence in

Amiga users

This brings us back to the question of protection. If it works for flight sims and so on, why shouldn't the same be true for more conventional games like Desert Strike, and classic sports sims such as Goal or Sensible Soccer - all of which would have benefited immensely from hard drive installation?

The software houses would argue that once a game is installable it invariably becomes easier to pirate. In that case, why not pile on the protection with code wheels which can't be pho-

tocopied or whatever it takes?

If it's a matter of people backing into the code and actually cracking the game, there's little anyone can do except the programmers, and to be honest for such professional pirates installation isn't really a consideration. After all they've been doing the same to floppies for years so what difference will installation make to them?

OK, you may ask what all the fuss is about. If you can't wait a couple of minutes for a game to load, or simply aren't willing to swap the occasional disk, tough! If you can't handle a bit of inconvenience, who cares? Buy a different game or get something similar elsewhere

It's this last point which worries me more than anything else. If the buying public can't get what they want from the Amiga, why shouldn't they look elsewhere? After all, everything installs on the PC, doesn't it.

If you're not an existing hard drive user this may seem a rather extreme argument but believe me it's not a million miles from reality. Until you've used a hard drive it's hard to appreciate how dependent you become on them.

It's a bit like owning a car - when you've never had one they're just another means of getting from A-to-B, but drag a passing motorist from their cosy little hatchback and swap it for a bus pass and you'll soon discover what a bit of inconvenience can do to people. Basically it's high time that software houses

had a little more confidence in the people who keep them in their company cars. If not, this paranoia with protection could seriously backfire. Although many would have you believe otherwise, the Amiga market is maturing all the time, and if the software houses don't wake up to the fact that the expectations of the buying public are evolving too, we'll all suffer at the expense of lesser machines EN

> Paul Austin Associate Editor

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# De-archiving applications - Workbench 2.0 and above blank disk at the prompt

and before

pressing

Always boot from your CoverDisk when dearchiving applications. The installer programs can be located via the install icon with the appropriate name in the WB 2&3 Only drawer

The de-archiving procedure has been much improved and now combines the power of the official Commodore installer program with that of Workbench 2.0 and 3.0.

The installer program is designed to be powerful yet simple for the beginner and features a user-friendly interface allowing you to de-archive programs with a minimum amount of fuss. The installer programs for Workbench 2 and 3 users can be located via the icons named: Install[orogram name]

InstallPfM

To run simply double click on the icon

Using the installer

Ignore the buttons that appear when the installer program boots up and simply click

on the Proceed button. The program will

Once this has finished it will inform you that it is about to format a disk in DF0. Click

then copy the necessary files to RAM.

which will load up the installer program.



Once you have clicked on Proceed, the

Clair or fraged to lead found in-

on Proceed again to start the de-archiving

If at any time you are unsure as to whether you want to continue installing, you

Occasionally utilities may need to add



CoverDisk pages.



The Amiga Computing CoverDisk is designed to be as simple to use as nassible Fallow these instructions and unu'll he un and running in na time!

#### Installing utilities

The procedure for installing utilities is much the same as installing applications, except that you can boot from your hard drive or Workhench disk. As utilities don't need to be directory on your hard drive or Workbench disk where you would like to install them. If you don't want to install to the default

directory you can change it by clicking on Change Destination. The Show Drives button will allow you to select a new device and directory. You can create a new drawer for your utility to go in by clicking on the Make New Drawer button and typing in the name.

You can also make a utilities disk by running the MakeUtilitiesDisk1,3 program located in the WB 1.3 only drawer and installing your utilities to here. At times you may be asked if you want to install a utility's documentation. A tick box indicates that the documentation is selected for inclusion, but you can click on the box to ignore it or simply

dick on the Skip This Part button. The utility installer programs can be found in the appropriate program drawer in the WB 283 Only drawer



on Proceed, at which point you will be told to insert a blank disk ready for formatting. installer will indicate that it is formatting the disk in DF0. When this has finished, click

procedure. When the application has been de-archived you will be told where the dearchived files are. Click once again on

can click on the Abort Install button.

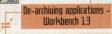
instructions to your User-Startup file located in the S directory so that they will function correctly. If you want to add the instructions, click on Proceed when prompted. 2.0 and 3.0

The Workbench

staller icon



Simply click on the Proceed button



Always boot from your CoverDisk when de-archiving he formatted into DE0 and either press v to continue or applications. The installer programs can be located via the install icon with the appropriate name in the WB 1.3 Only drawer

Install[program name] 1.3 eg:

InstallPFM 1.3 When you load up the 1.3 installer the program will first prepare itself ready to de-archive the program to a



Berling Williams

formatted and the application de-archived.

blank disk(s). You will then be asked to insert a disk to Provided you answer y, the disk you insert will be

#### Installing utilities You should first run the Makel ItilitiesDisk 1.3 to format

a blank disk called ACUtilities which will be used to store any utilities you eventually install. This disk can be used with future CoverDisk utilities

until it becomes full. The Makel MittesDisk1.3 program will be a permanent feature of the CoverDisk To install any utilities, boot your machine with your CoverDisk inserted in DF0. Utilities can be installed by

clicking on their install icon found in the appropriate drawer in the WB\_1.3\_Only drawer. You cannot specify their destination and any additions to the Startup-Sequence must be done manually.

When installed the utilities are copied to a drawer called ACUtils on the ACUtilities disk.

# De-archiving uaur CauerDisk

Workbench 2.0 and 3.0

Lisers of Workhench later than 1.3 can program which we have especially adapted to de-archive the contents of the CoverDisks with the minimal amount of fuss

The installer is simple to use: click the buttons. Make sure you boot from your CoverDisk with the disk I write enabled when de-archiving Personal Fonts Maker and Fnoch Master.

When installing Spooler and disk or hard drive as the programs are installed onto these disks. although any auto-booting disk

#### Workbench 1.3

Users with 1.3 machines should double click on the InstallPFM 1.3 to de-archive the Personal Fonts Maker adapt the Commodore installer so that it works on 1.3 machines in the

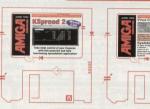
#### Hard drive installation Hard drive owners should simply

copy the de-archived programs across but will need to make an assign for Personal Fonts Maker to work

Load up Ed then load the startupsequence file located in the S directory. Just before the LoadWB command

Assign PFM: [pathname]

Save the startup-sequence by pressing Esc - x and then Return



# Lake contro **40ur finances**

If your finances need a shake up look no further than HiSaft's fully working K-Spread 2 spreadsheet

and graph creator, says Steup Illhite



When you have finished entering the example sheet it should look similar to this nicts

Spread 2 is a fully functional spreadsheet that will allow you to keep your finances in check without the hassle of dragging out the calculator and folders crammed with documents.

The program is ready-to-use and all you need to do to load it up is to insert CoverDisk 1 into drive DF0: and reset your Amiga.

The advantages of a spreadsheet program such as K-Spread 2 are many. Spreadsheets offer a clear and concise way of storing financial information without the need to keep hold of bills, statements and

transaction papers. Also, when you have created a spreadsheet you can use it over and over again as all the calculations are performed by your Amiga.

When K-Spread 2 has loaded, doubleclick on the disk icon. Inside the window you will find the main KSpread program and the graph generator KSpreadG.

Printer is a preferences program that will allow you to specify the type of printer you are using. We have already included EpsonQ, EpsonX, Star24Plus and Star9Plus as these are the most common printer setups. Double-click on the KSpread icon to load up the main program. You will be presented with K-Spread's main display window made up of the spreadsheet cells, the Edit window and the main menus. All spread-

# Disks

You can select cells simply by clicking and dragging the mouse. You can only do this with the solid cursor



sheet applications are made up of cells as they make it far easier for the program to perform calculations. The cells are referenced by letters across the top and numbers down the left-hand side. Therefore, every cell can be quickly referenced - B6, A3 for example.

You will also notice that there are two dif-

You will also notice that there are two difierent cursors on the screen - an outline cursor and a solid cursor. The outlined cursor indicates the cell presently being edited and the solid cursor indicates the copy and paste destination.

Take a look at the small window to the top-left of the screen behind K-Spread 2's main window. This is called the Edit window and it is here that you type in your cell data.

There are four different types of data that can be stored in a cell and these are Value-ordinary numbers, Text - a description, Formula - a formula for calculating the contents of a cell or more, and Label which is used simply as a heading or inside a formula as a reference to a row or column.

You can change the data type in the Edit window by pressing the Tab key. The present data type is displayed in the window title bar. Before we go on to explain the more advanced options in K-Spread 2, let's find out how we can create a basic spreadsheet.

Position the spreadsheet cursor (outlined) on the cell BO by holding down the Shift key and clicking on it. The Shift key selects the spreadsheet cursor which you can also move with the cursor keys. After the data type in the Edit window to Text with the Tab key. Now type in January and press Return. January will apoear in cell BO.

Move the cursor to C0 and this time enter February. Do the same for cell D0 entering March instead. Now we need to enter the Row Headers.

Hold down the Shift key and click in cell A2. As the Edit window is still in Text mode simply type in Sales and press Return. Click on A4 and enter Margin, Gross Profit

2007 Harry Far.

Cells are easily copied and pasted by dragging them either to the row or column headers



where you enter cell information such as formulae, text and values.

The Tab key switches between the data types

in A6, Expense in A8 and Net Profit in A10. You will notice that the text you have entered bleeds across the margin. To change this click and hold the left

mouse button on the right edge line of column A and move it across to the right slighthy, so that the text fits into the cells. When you release the button click on This in the requester so that you affect only the A column.

Move to cell B2 and press Tab until you see Value appear in the Edit window. Type in 500 and move the cursor to the next otto the right. Type in 550 and 570 in the next two cells. Next select cell B4 and change the data

type to Formula. Type in 0.22" then point with the mouse at oell B2 and press the LMB (left mouse button) with the Ctrl key held down. This will add the cell reference B2 to the formula. Press Return.

We wish to repeat this formula in each of the cells to which Margin refers, so move the solid cursor over B4 by clicking on it. Release the LMB and then click and hold it down again to select and gat the cell. Drag it across to the row heading 4 edge line until all the cells in that row are highlighted. When you release the LMB you will be

presented with the Row Range requester. Global will copy the selected cell formula across all the cells in the selected row. Window is defined by the value specified

in the Set Slider Range option in the Options Window menu and Cursor will set the limit to that defined by the cursor. However, we wish to define the range our-

selves so type in C:D in the line below the option buttons. This tells K-Spread 2 that we wish to copy the formula across cells C4 and

D4. When the program asks Do you want formula amendment? answer Yes and any changes to the formula will be made by the program automatically.

This is important because we want C4 to contain the formula 0.22\*C2 rather than 0.22\*B2 and cell D4 to contain the formula 0.22\*C2. To complete the entry of data, move the outline cursor to cell B6. This is Gross Profit for January which we define as 0.85\*. Point to the cell B4 with the LMB and Clri held down so that B4 appears in the formula. Press return to enter the data.

To copy the formula across the other cells in the row select cell B6 by clicking once and then drag the selected cell to the row header, making sure that the remainder of row 6 is highlighted before releasing the mouse hutton.

Specify the range as C:D as before and make sure that the answer to Do you want formula amendment is Yes.

Now enter a set of values into row 8, Expense. Remember to select cell B8 and

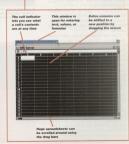
set the data type to Value.

Once the three items of data are entered, move the outline cursor to cell B10. We are now going to define Net Profit to be Gross

Profit minus Expense.

Change the data type to Formula, move the mouse pointer to cell B6 and click the







LMB and press Ctrl. This will copy B6 into the Edit window formula

Type a minus sign, move the mouse pointer to the cell B8 and Ctrl click once. You should now have B6-B8 in the Edit window.

Press return to fix the cell formula Replicate the Net Profit line in the same way as the Gross Profit line by dragging it to

the row header. Remember that the range should be C:D. You have just designed your first spreadsheet using K-Spread 2. You can save this

as Example using the Save .SPD Data File options from the Project menu. The SPD is added by the program so that you know it is a spreadsheet file

In order to use the graphs you will need to guit K-Spread 2 and load up KSpreadG From the Project menu load up your Example spreadsheet and highlight the cells from B2 to D10. Do this by clicking on B2 and then, with the LMB held down drag the mouse to D10 and then release.

#### GRAPHS

We have now selected an area for which we can draw a graph. Selecting text may cause an error to occur. From the Display menu select Graph and then Vertical Clustered Bar Chart

The graph will open up its own window along with a new set of menus. The menus allow you to alter things such as text formatting, which fonts are used for text and text entering.

If you wish to add text to your graph select Edit from the Text menu and type in the text you wish to add. When you click on Okay the text will be placed on the graph area and can be moved into position with the mouse button.

Once you have finished designing your graph you can then save it down using the Save option from the Project menu. All the graphs are saved as IFF so you can load them into documents and print them out

Try experimenting with the other graph types. Click on the close window gadget to guit the graph display.

We will now take a look at K-Spread 2's other features which will help you to create powerful spreadsheets. K-Spread 2 manipulates data by moving,

copying or using the cells on the sheet. Before the cell can be moved or copied, the program must know which cell (or which block of cells) is being used, or to what

# Uirus Checker u6.34

#### Author: John Veldthuis

Virus Checker holds the title of the Amiga's premiere virus killer due to a ability to eradicate all known virus programs without intervention from the

#### Workhench 1 3

Workbench 1,3 users should install Virus Checker to their ACUtilities disbefore using it.

If you want Virus Checker to be loaded every time you switch on you Amiga you should type in the following command in your startup-sequence:

run Inath namel Virus Checker

When you load Virus Checker you will be presented with the VC window bar If you insert a disk Virus Checker will report any found viruses and ask you By clicking on the menu bar with the left mouse button you can select the

menus from the top of the screen by holding down the right mouse button. These menus contain VC's more intensive virus checks. Link/File scan Scan memory and Saddam damage scan are independent checks for those particular types of virus infection.

If you insert a disk with a non-AmigaDOS bootblock. Virus Checker will tell you that it cannot recognise the bootblock and that it could be a virus. Sale

If you wish to use the graph

facilities you must load up the KSpreadG propram

range of cells the block is to be copied. This is done by selecting the cell or block of cells. This means, for a single cell, a single click on the cell. The cell will be highlighted to indicate selection.

To select a block (a rectangle), or a column or row, position the mouse pointer on one corner, hold down the mouse button and drag the corner diagonally opposite (for a row or column just drag in a straight line). Release the mouse button when the last cell

You will see an entire row or column. starting from the current first row or column. You can copy and replicate cells by following the procedure listed below

1. Select the source cell by clicking once It

Tanx - 42° South

lancre from the menu buttons as this is invariably not a virus. Selecting Remove could damage the disk if it was not intended to be AmigaDOS compatible, such as most games software

#### Workhench 2 & 3

Workbench 2 & 3 users can run Virus Checker from the Files drawer on the CoverDisk or you can install it to your Workbench or ACUtilities disk.



For a rundown on the basic operation of Virus Checker read the Workbench 1.3 instructions. Note that you can install Virus Checker to the WBStartup drawer so that it loads every time you boot your Amiga By clicking on the re-size window gadget in the Virus Checker bar.

Workbench 2 & 3 users can bring up VC's advanced options screen.

There are a multitude of options that you can set here but only a few are important at this moment. Click the Use Window button off so that the tick disappears. This will stop

the Virus Checker bar appearing every time you boot your Amiga. You can always bring the bar back again by using the Exchange Commodity on Take a look at the window on the far right. In this window you can add files

for Virus Checker to automatically check when it loads. The most common virus victim is the startup-sequence.

Click on the Add button below the window and then type the following in the requester:

s:startup-sequence

At the bottom of the window you can select which drive you would like VC to check when disks are inserted. If you had a second drive you would click on the DE1: button so that a tick annears

Click on the Save button to store your settings and then on the close window gadget to close the Virus Checker bar.

will appear highlighted.

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2. Position the mouse pointer on the cell and drag it to the destination cell by holding down the LMB. Release the LMB when the destination cell appears highlighted.

You can also copy cells to entire rows or columns. Before you perform any copying select the source cell - releasing the LMB once the cell has turned black.

Drag the cell to the column header, positioning the source cell image so that the entire row or column turns black. Release the LMB and a requester will appear giving Range options. The Range requester options are explained above. To insert and delete complete rows or

columns, press down the Shift key and click on either a row or column header. A requester will open (Column and Row Edit). This requester asks for the number (Amount) of rows or columns to insert or delete and gives the options of Insert. Delete or Cancel. In Insert mode the rows or or column. In Delete mode the current row or column and rows or columns to the right or below are deleted

As mentioned earlier, one of the data tunes allowed in the Erlit window is I shale A label is text within a formula which is used to reference another cell.

columns are inserted before the current row

#### LABELS

Any cell can be designated to be a label by entering some text into it and choosing its data type to be Label (L). Any other cells below and to the right of this cell may then use this label to build up a cell reference. Let's say we have some column headings

of the months January, February etc., with January in cell B0 and a row heading of Sales in cell A2. To refer to cell B2, which would be Sales

for January, in a formula or range, we can 1. Refer to the cell as B2 from the keyboard.

2. Click on the cell with the LMB and the Ctrl key

3. Make the column and row header's data type Label and refer to the cell as January. Sales. Note that a label is case

sensitive - the program will not recognise a reference to january or sales. If there is more than one label of the

same name the label which is nearest to the subject cell will be used. When you copy a cell that uses a label, you will be asked if you want to amend the formula to refer to a new column or row label, or not. If, at any point you delete a label any ref-

erences to it will be replaced by the corresponding row or column title e.g. A, AE, 34 etc. However, you cannot use these titles as label names. Note also that you cannot refer to a label unless the cell you refer to is below and to the right of it. Let's now take a look at some of the

menu facilities in K-Spread 2. In

the joystick left or right quickly releases a mine. For the full list of controls see fig 1.

The terrain icon to the top-right of the control icons allows you to select the terrain on which the ensuing battle will take place. The default is tanks over land. Clicking on the icon change it is quested and the takes with the icon with the control icons. and you are returned back to base. If you die when you are carrying flags they are released and can be collected by other players.

advance left advance right
advance up
. advance down
fire shell
rotate left
rotate right
advance
reverse
fire shell
vance or reverse
or advance down
ft or advance left
or advance right
fire shell
drop mine
quit game
pause game

Options/Window menu the Set Slider Range allows you to make the windows sliders operate on any range of cells.

For example, if you set the range B56:BB80 then when you move the window sliders, the cells you can move to will lie within the range B56-BB80

The Grid option allows the spreadsheet to be displayed with or without the horizontal and vertical lines. This affects the window that is currently active. Find & Replace offers the facility to find

and replace a value or text string. Click in the Find bar to select the contents you want to search for and then in the Repl bar to select what you want to change it to.

You can select which cell type you wish to search and the area in which they will be affected if found.

#### PRINTING

When you are happy with your spreadsheet you can then print it out for future reference. To print, select either Print Sheet or Print Listing from the Printer menu. Print Sheet allows you to print the required range. Print Listing lists all the cells to the Below is a list of the printer options that

appear when you select one of the above menu options PRT: Translated codes sent to the Printer

Device selected in Preferences PAR - Codes sent untranslated to the paral-

lel port SER - Codes sent untranslated to the serial

port File - Send untranslated to a file, the name of which is entered by the user

Sideways - Sent untranslated to a 100% compatible Epson FX80 or equivalent (which supports downloadable fonts). Note the printer buffer inside the printer

must be disabled. On an FX80 this means setting the DIP switches 1-4 to Off.

# Dagfight

#### Author: Dan Rhodes

DogFight is a classic aerial combat game that first appeared on the VCS in the form of Combat

Up to four players can participate at one time but only one will survive to be called champion. The game is set during World War I when all that men could fly was a clumsy biolane

However, these biplanes can turn on a sixpence and have immense speed capabilities. Climb into your cockpit and let's take a flight through DogFight.

On loading up the game and pressing Space you will be presented with the pre-game options. By pressing the key F1 to F4 you can toggle the amount of players and which control methods they will be

There are five methods of control and they are Joystick One, Joystick Two, Cursor Keys, Z, X and Shift and Out To Lunch. To gain a better impression of the flight controls and in-game keys take a look at fig 1.

#### DARING

The basic idea of the game is to shoot down the other players while remaining intact and safely out of harms way. This involves pulling some fairly daring stunts and using the clouds as cover

Each player begins at his or her airfield ready to take off. You begin with ten lives indicated below each hanger and these deplete as you are hit.

Press the fire button or fire key to start the engines and begin take off. When the biplane has enough speed use the left or right control direction to take off. Don't try and pull up too early otherwise the plane will blow up on the runway

When off the runway, climb gradually to

gain some height and then dive straight down, pulling up at the last moment to gain

eneed If you pull up too steeply the plane will stall (known to DogFight aces as Floating Death) and you will find yourself hurtling back to earth. If this occurs push the nose straight down, wait for the engine to cut back in and quickly push either right or left

As you improve you will find that you can easily pop off other players while falling hence the name Floating Death.

to recover the etall

Once you're comfortable controlling your

# SysInfo

#### Author: Nic Wilson

If you ever wondered how fast your Amiga really is SysInfo is the program for you. You can load the program from the Files drawer or install it.

When you load SysInfo it will inform you that it is evaluating your machine after which it will display the main panel. If you look in the Internal Hardware Modes window you will see the hardware information about your Amiga. SysInfo will tell you

what CPU you have on board, whether or not an MMU or FPU is present, the speed and a humorous comment about the results from the author. You can check your Amiga's speed capabilities by clicking on

the Speed button. After a few seconds while your speed is compared against other Amigas the results are shown along with a bar chart.

Click on the Expand or Shrink button to enlarge or reduce the bar chart display. As well as the speed of your computer you can also find out information about memory, boards such as RAM expansions and drives. You can even print the result as a permanent record. Just don't start a "my computer's faster than yours" war with the neighbour.





Joystick One Left - rotate left or right

(depends on selected Right - rotate left or right (depends on selected

Fire - fire cannons

Joystick Two Left - rotate left or right

(depends on selected Right - rotate left or right

(depends on selected plane) Fire - fire connons

Cursor Keys

Left arrow - rotate left or right (depends on selected

plane) Right arrow - rotate left or right (depends on selected

plane) Up arrow - fire cannons

# Keyboard

Z - rotate left or right (depends on selected plane)

X - rotate left or right (depends on selected plane) Shift - fire cannons

#### Out To Lunch select this for any non-players

P - Pause on/off Q - Quit to options screen

Esc - Quit DogFight

#### AGA owners

If you own a A1200, or any Amiga equipped with AGA, please select Enhanced from the Boot-up options screen. To get to this screen reset the Amiga and hold down

both mouse buttons until it appears.





biplane you can start to create you own attack manoeuvres. The clouds provide excellent coverage and a well executed attack from them can prove devastating to the enemy.

Yaka to the skins in

your trusty biplane and destroy you opponents - all

#### ANNOYING

nin

na

ut

Strafing planes that are taking off can tip the balance in your favour but it does prove annoving to the other players and you may find yourself under attack from everyone else playing.

makes this an impractical exercise.

Avoid spinning doglights because you are more likely to crash into your opponent than shoot him down. If you do get into such a fight dive away at the best moment and try and entice your opponent into the ground

Beware of wrapping bullets. If you fire across the screen and then turn and reenter on the other side you may find yourself being shot down by your own bullet - a waste of a life and very embarrassing.

The last player remaining is considered the victor. If there are two players and they shoot each other at the same time (it can happen) then the game will be declared a

\_\_\_\_\_\_

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#### FEATURE

uring a misspent youth among other aspiring musicians, a conversation broke out revolving around the future of the music business. In a fit of exuberance I immediately adopted the technological banner, only to find myself

instantly in a minority of one Undaunted, I stated my case: "In ten years time everything will be run by Midi. and what's left over will be nothing more than a series of ones and zeros on a giant hard drive."

Believe me, this wasn't a popular theory in a roomful of musical die-bards determined to "keep music live" no matter what the cost. At the time hard drives were still very much a rarity, while Midi was nothing more than a blasphemous four-letter word more often used as an insult than an option.

Ginging musicians are notorious technophobes and on the whole wouldn't - at the time - touch a computer with a Stylophone. As a result things soon got fairly heated as the enemy circled the wagons around the

Fortunately the conversation eventually turned to the usual obsessions of young men and my seemingly hysterical opinions were soon out down to a dodgy pint

As it turned out my estimate was conser vative to say the least. Now just five years latter the digital age is definitely upon us. and in almost every walk of life analogue is in terminal decline. Albums have been crushed underfoot by

CD, cassettes are at the mercy of DAT and even video is evolving into a digital medium with FMV CDs and direct-to-disk digital video recording.

All fairly predictable; after all, you can't stop progress. However the really interesting point isn't the change in format, it's the fact that all these elements are no longer

# The optical option

Without doubt one of the biggest stumbling blocks for computing in general has been the incompatibility between the various machines and their operating systems.

It's true that things have improved over the last couple of years with Commodore finally embracing PC disks as a transfer option.

As a result the two machines can now enjoy fairly uninhibited communication - as indeed can the Mac - courtesy of its ability to read both

double and high-density PC disks. Unfortunately although a big improvement, floppies are becoming ever more inadequate due to the pure volume of data which needs to be transferred. A classic example is ray-traced animation, which has been saved out in a 24-bit format before to single frame recording.

In such circumstances, floppies are almost useless. As a result some form of mass media transfer is essential

In the past the SyQuest removable hard disk was the only answer, although this has been challenged recently

the islands they once were

Audio is becoming ever more synonymous with video, and information in general is inexorably making the difference between the haves and the have-nots in science.

industry, economics and education If information is indeed power, what part can the Amiga play as worlds collide? After all, what can a jumped-up games machine

offer that the PCs and Macs can't match? In my opinion the clue lies in the Amiga's humble beginnings. Unlike the opposition it has evolved over the years while the others have for the most part rested on their corwill be run by Midi. and what's porate laurels

Take the PC = although it's been the staple diet of the business community for over 20 years its basic architecture has never changed. It's true that power PCs in the 486 and Pentium bracket have become much faster, but essentially they're still dinosaurs in disquise

No matter how quick they become, PCs will never multitask, and certainly won't suddenly develop the natural affinity with video that the Amiga has enjoyed since day one.

#### DORMANT

left over will be nothing more

than a series of ones and

their e no enres

hard dring

It's true that more than one program can be loaded into a PC, but only one can ever running. The others simply sit dormant in the background - not exactly the perfect multimedia approach The same is true for Macintoshes; just

like PCs they can load multiple packages. but again only one is ever active. Obviously the Mac is a more worthy challenger courtesy of its idiot-proof point and click interface and existing kudos in the media -

extensively in publishing However, no matter how glossy the brochure, a Mac simply isn't a multimedia machine. That particular mantle is exclu-

sively the property of the Amiga. At this point you're probably resigning yourself to a few pages of biased, and probably unsubstantiated twaddle from a selfconfessed Amiga fan. As little as a year ago. I'd probably would have agreed wholeheart-

rate review. Not only

Paul Austin charts the — Amiga's position in the new arder as the media worlds collide



does it provide double the normal storage of a 5.25in optical by delivering a staggering 1.2 gigabytes per disk, but it also offers totally transparent transfer between Mac, Amiga PC and even Unix

Obviously any transfers require the actual drive unit, but the disks themselves simply appear as normal DOS volume regardless of the machine using them.

Not surprisingly, the actual file format has to be supported by the source and destination machines, but that's about it. As a result you can transfer data to just about any system so it's even possible to communicate with Silicon Graphics Indigos when necessary

As you've probably guessed, Mo-Miga uses its own proprietary file system to achieve compatibility between platforms. With this in mind you'd expect the actual transfer time to be fairly slow, but surprisingly they're pretty quick and can sustain 2Mb per second stretching up to 5Mb in

Unfortunately 2Mb per second is still too slow for existing digital video systems, the PAR included. However it's more than adequate for most applications - including the AD516 and other direct-to-disk samplers.



with the arrival of various optical drives - the most suc-

Unfortunately both these systems rely on an identical

Fortunately these barriers are finally coming down with

the arrival of the Mo-Miga optical disk drive - see sega-

drive mechanism and more importantly an OS-compatible

cessful being the 128Mb 3.5in variety.

machine at the destination.

# digi tal highway

edly, as there was no real reason to expect any serious corporate interest.

any senous corporate interests.

After all, no matter how good the machine, nothing sells into the corporate market without the proper exposure, and in that particular department the Amiga has always been disastrous.

However over recent months the machine has finally begun to received the serious attention it deserves. As you may recall from the last issue, Commodore – along with a number of third-party developers – have established the ACE initiative.

Admittedly it's still early days with only one Amiga Centre of Excellence established. However with another five set to spread the Amiga's corporate message across the UK, the potential is there.

Add ACE to the sterling efforts of independents such as Premier Vision – a company responsible for hosting regular seminars which introduce the best in Amiga technology to professional markets – and the future looks brighter than ever.

Although the basic Amiga has obvious benefits as a potential multimedia workstation, the machine itself is only the beginning. It's really the third-party peripherals that lead the charge, and if sold correctly they could make the machine the cross-roads at which all the digital highways con-

Before moving on to the tools of the trade, it's probably worth clarifying what makes up this almost mythical digital ether.



The new drag-and-drop approach of Studio 16 3.0 makes The most obvious example is email. As you're probably well aware this can take many forms, with perhaps the most egalitarian example being the Internet.

Unlike many comms systems, the Internet isn't a BBS, in fact it's much more akin to a peer-to-peer local area network which you may already use at work. However in the case of the Internet the network is on a truly massive scale.

Aside from offering direct connections to thousands of research facilities, universities and companies, it also offers links to 110

# Digital video

Above all else, the Aming is best known as a videographic tool, mainly due to its natural affinity with video and its ability to generate a sync – a factor which has made it the ideal choice for genicoking, titling and computer-generated animation sellaring for tape.

Tranks to these basic skills and the artistic nature of the machine, some

Thanks to these basic skills and the artistic nature of the matchine, sort of the best animation and ray-tracing software available on any platfor has emerged on the Amigs. However although capable of generating asto ishing graphics it has always suffered when it came to recording.

In the past the only option was to invest in an SP edit recorder capable of recording trames individually. Unfortunately this had two more of Firstly such in machine retails at around 55,000 and words still a punishing schedule of single frame recording invariably means hundreds of oounds a vest simply to maintain the tape heads.

Fortunately the dark ages are at last coming to an end with the arrival of decidated digital video recording. At present there are at least three systems in the final stages of development, no or hard him to enable the sime you read this article. At the forefront of the clamour to capture this massively lucrative marks it the must published Personal Animation Recorder -alias PAR -from Digital Processing Systems.

Alternative Individual restormer as a final replacement for similar forms and the stage of the

Recorder - alias PAH - from Digital Processing Systems.

Although initially designed as a simple replacement for single frame recording the PAR - like the Amiga - has evolved into something of a monster.

In addition to simply compiling single frames into 24-bit Joeg animation the system can also digitate live video – again in real-time – using the AD000 TBC/digitage card. As if that waster impressive enough, 16-bit audio has also been adder vide has 25-bit direct-bo-disk sampling system. As a result, the PARA, AD0000 and AD516 combo busiles video the first truly broadcast quality audiovideo system to appear on any desktop piderio. Although it is hart to believe that such power can enable thore a single

Although it's hard to believe that such power can emanate from a single machine, I can confirm it works perfectly – see the Personal Asimation Recorder review for more information.

sibilities (again, see the Personal Animation Recorder review) the AD515's initizal affinity with Bars & Pipes Pro 2 could well allow additional hardware and software south as Scala to become yet another element in a PAR audiovideo setup.

As you may already be sware, B&PPro2 can be much more than a

As you may already be sware, parrioz can be much made straightforward Midi sequencer. In fact, courtesy of its Media Madness module, any Midi sequence can be used to trigger both external hardware and additional software.

Thanks to the SMPTE timecode generated by the AD516, it's theoretically possible for all the element to share a common timing reference and sequence their efforts accordingly, making the Amiga the heart of the most powerful multimada system on any oldform.

countries and an estimated user base of over ten million.

In terms of data transfer the figures are quite likerally mind-boggling, with an average of ten terabytes of information being shunted around the world every month. Add to that 4,600 news groups and over 130 gigabytes of PD and you're looking at a real monster.

Initiated in 1969, and still subsidised, by the US Federal government, it's rapidly realising vice-president Al Gore's dream of a "data super-highway".

Obviously the Internet isn't the only comms option, and in fact there's a whole host of networks such as CompuServe and CIX which offer similar global access, sometimes in combination with the Internet, but all from the comfort of an intuitive menu-driven front end.

As you can imagine the global village —

As you can imagine the global village – alias big brother – has big advantages, not least of which is the ability to side-step compatibility problems between various operating systems.

#### TRANSFORMATION

Assuming you can read a particular file format – not usually a problem on the Amiga – literally anything can be transferred, regardless of size and all in a matter of minutes.

Another imminent link in the evolutionary

chain is the arrival of optical fibre as the standard in telecommunications. Once in place, video conferencing could well supersede or at very least transform email as we loom; if

know it.

Again, the Amiga has a headstart in such an environment courtesy of its affinity with video and the profusion of

cards such as the IV24 and FrameMachine which already support PIP – picture in picture – displays. Add a camera and

some additional connections to this existing technology and the Amiga is in the perfect position to jump on the fibre-optic bandwagon. Although still a few years away from



With the PAR card the Amiga is becoming the most powerful video tool on any platform

general use, BT are already shipping videophones and video conferencing equipment – the times they are a chang-

ing...
Although much of the above has dealt with the potential of the Amiga, the future is already at hand courtesy of products such as GVP's PhonePak.

As the name suggests, this is a dedicated telecommunications card which provides message redirection: "Press 1 for customer services, press 2 for sales and distribution", and so on.

You can also use a similar pre-recorded approach to specify what kind of communication you wish to make: "Press 3 to leave voice mail, press 4 to send a fax...".

It's also possible to add time/date stamps to incoming messages and set up scheduled transmissions for your own faxes, thereby avoiding the expense of peak rate calls.

When employed as a network server you can also set up private mail areas. It's even possible to specify that the number of an incoming fax





imple but Hicient. he PAR sterface in

card, real-time grabbing and a TBC to boot!

Amiga Computing

should be interrogated and if necessary mored, thereby avoiding junk faxes comething which is already a serious probin the States.

However, PhonePak is by no means the univ telecommunication option on the amina. Like video cards, the variety of fax modems is growing almost by the day with companies like Supra leading the field with combined fax modems that ship with propristary software

Like GVP's PhonePak, they can schedule fax transmissions as well as automatically detect incoming fax information - and of course they can still operate just like a normal modern when you feel the urge to get on-line The only obvious limitation of fax

modems is the lack of voice mail and call re-direction - but to be honest if you siready have an answer phone and don't operate as part of a network it's not really a Combine the potential of comms and the

Amina's existing multimedia skill and vet more promise is revealed. Existing Amiga

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software such as InfoChannel can already update satellite information centres and noint-of-sale sites from a central control Because the Amiga offers true multitasking changes can be made

regardless of whether a presentation is aireadu rumino

As a result a single operator can update an infinite number of machines simply by dialling direct into the satellites to automatically replace or update existing presentations, add new ones, alter display times or download new pages. And of course, because the Amiga offers

true multitasking, changes can be made regardless of whether a presentation is already running. As you'll discover in the digital video sec-

tion, the possibilities offered by recent innovations are finally providing the pro hardware platform that the Amiga has been building towards for the last few years. Although excellent software has been around for some time, use of the Amiga in a

broadcast environment has always suffered from the limitations of mass data transfer single frame recording being a classic example - combined with communication difficulties between other machines (see The ontical ontions) Fortunately even these sticky problems

are now resolved, and all that remains is the perennial problem of speed. Although the Amiga is just as fast as a 486 PC or Mac Quadra, it's still pretty slow in comparison to dedicated graphics workstations.

However, this stumbling block could soon he removed with the imminent arrival of at least four 4000/040 accelerators, the Warp transputer, and a planned 060 from Advanced Software Systems, which if claims are correct will easily provide workstation performance on the only true multimedia machine. EN







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## Digitiser uses

Video digitisers have many uses, including grabbing stills for use in animations, graphics or titles, or to incorporate into desktop publishing

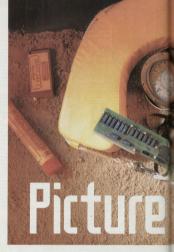
With the right kind of digitiser entire sequences can be grabbed and subsequently animated to provide video clips which rould be used in games, CD-ROMS, interactive presentations or desktop video presentations. Digitised images can be used as the basis for morphing sequences.

Video clips can even be used as a basis for hand-drawn animations through a process called rotoscoping, where each frame of a sequence is redrawn from the original grab to give a new style or dimension to a character while still retaining its natural movement.

Even traditional cell animators can make use of digitising, grabbing each individual frame under a rostrum camera and then using the Amiga to play the sequence back.

This is especially useful when "line-testing" – that is checking that the line drawings which will be used to produce the finished, coloured, cels all animate smoothly together.

And of course there's the digitised porn that today's school-kids are reputed to be swapping in the playground. How do you think that gets on to disk? Yes, that's right – it's digitised!



Gary Whiteley looks at what is needed to get real pictures into your Amiga, and what to do with them once they're there—

Video Spirter B Analog Analog Storage Amiga Software

Here's a typical capture and conversion path that a video signal will take during the digitising process

or almost as long as the Amiga family of computers has been in existence, video digitisers have been available for them. The trailbazer was New Tek's compact, direct-to-your-Amiga Dig/New - recubedly designed and built in a garage by Tim Jenison, the man who later led his own destop video revolution with the famous Video Toaster. But every doy has its day and increasing-

But every dog has its day and increasingly powerful digitisers incorporating more and more features have since supplanted DigiView to help Amiga owners exploit their artistic and creative talents and make capturing images from video a piece of cake.

Today there are over a dozen different Amiga digitisers on the market, including those which are integrated into other hardware, such as NewTek's Video Toaster or Digital Creation's DCTV. This month's Survivors' Guide takes a look at the technology, types and uses of video digitisers, and offers a few hints and tips on getting the best from them, as well as a mini round-up of some top digitiser

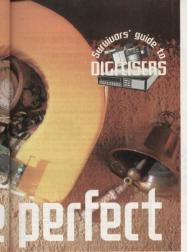
Broadly speaking, a digitiser is a piece of hardware which attaches to a computer to enable external data to be first sampled and then converted into information which the computer can understand and utilise.

#### GRABBERS

Sound samplers are also digitisers, but in this article we're going to concentrate on video digitisers – sometimes known as frame graphers.

frame grabbers.

Unlike flatbed or hand scanners, which are used to capture images from paper or thin films (such a transparencies), video



## Hints and tips

There are several simple measures which you can take to improve the quality of your digitised images. The first three apply only when grabbing from a video camera.

- Ensure that the digitising subject is evenly and adequately lit by using portable lighting, such as Anglepoise lamps or fluorescent strips or by reflecting daylight onto the subject using sheets of white paper or polystyrene sheeting. Obviously there's little you can do if your subiect is outdoors but wait for the natural light to improve - unless you have suitable lighting, of course.
- Don't forget to White Balance your camera to get the truest colour representation. This is particularly important when using artificial, or mixed natural and artificial, light sources
- Use a stable camera mounting, particularly when the digitiser is a slow scan model. A tripod, copy stand or simply placing the camera on a solid base will help enormously in removing any unwanted motion blurring which might otherwise mar the digitised image.
- · When digitising from videotape with a slow scan digitiser it is essential to use a VCR which has a perfect freeze-frame facility, otherwise the resulting image will almost certainly exhibit tearing or other artefacts caused by any slight movement which might happen when the tape is paused at the required point.
- · Use good quality tapes and keep your video deck in top working order, taking particular care to keep its heads clean. Where possible (ie if your VCR and digitiser can handle it) use YC signals instead of regular composite ones, as these will give significantly increased digitising quality.

digitising variations which need explaining I've already mentioned slow and fast scan digitisers, but what exactly are they? Well, there's certainly a clue in the names!

Slow scan digitisers grab and convert the incoming video signal (let's think of it as a single, full-screen image) in small chunks and the whole process can take from several seconds to over a minute, depending on the Amiga, the digitiser, and the grabbing resolution.

#### STATIC

Since the grabbing takes time, it is essential that the image remains absolutely static during the entire operation, otherwise blurring or image break-up could easily happen

This can easily be achieved with a wellmounted camera, but digitising from video-

digitisers need to be fed a video signal usually composite or YC - to do their magic. But, as with scanners, the quality of the output reflects the quality of the input: the old maxim of garbage in, garbage out applies to digitising as much anything else.

#### SPLIT

The video signal may be a still from a camera or VCR or a live, moving image, depending whether the digitiser used is a slow or fast scan model. This analogue signal is then electronically split into its three colour components - red, green and blue (RGB) - before being converted into digital data which can be sent to the Amiga. Almost all external digitisers transfer this data to the Amiga via the parallel port. Internal digitisers communicate directly to the digitising software can then instruct the Amiga to recombine the digital RGB data into an image which can be viewed on screen, either in a native Amiga format such as IFF or - if a suitable display card is fitted - it may be possible to see a fullcolour. 24-bit version (though this largely depends on the digitiser's software as well

as the display card). There are a couple of







**Amiga Computing** 

of

tape requires that the source VCR has a rock-solid freeze-frame facility.

Fast scan digitisers contain a frame buffer – a dedicated memory area – which is used to continually sample the incoming video, frame by frame.

When the digitating process is triggered the video frame currently stored in the frame buffer is frozen and held as long as required. Consequently, the captured frame can be digitated very quickly because the video picture is already stored in the frame huffer.

However, even these real-time digitisers cannot capture continuous sequences of video frames in real-time because of the data transfer rates required, so I prefer the term "fast scan" to "real-time".

#### SLOWER

grabbing.

Also, it still takes time to convert the grabbed image into a format which can be viewed or stored by the Amiga, especially where the Amiga has a slower processor, such as a standard 68000 chip.

The greatest advantage of fast scan digitisers is that they can easily grab images from moving video without suffering the blurring or break-up associated with slow scan models.

Occasionally though, some motion jitter may be evident in a displayed image get may be cause of marked differences between the because of marked differences between the two interfaced fields. which, make up the complete video frame and it may up the complete video frame and it may up the complete video frame and it may up that so necessary to de-interlance the image quence, loss some of the contained picture information). But this is a small price to pay the property of the tribute on overvience of fast scan

There are two main considerations here – first cost, and then the type of Amiga which you own. A top-notch fast scan digitiser such as VLab VC or Vidi Amiga Z4RT will set you back upwards of £250, but will provide great grabs in up to 24-bit quality, along with other benefits, depending upon the digitiser model.

Slow scan digitisers are much cheaper, but lack the linesse of the fast scan models. Nevertheless, perfectly acceptable images can be grabbed with such hardware, provided that you have video equipment capable of rock-solid freeze frames.

The type of Amiga dictates whether the digitising hardware can be externally or internally connected. Amigas without Zorno slots (the A500, A600 and A1200) can only accept external digitisers but other models can use either external units or internally-mounted

The advantage of internal cards is both speed and tidiness; data transfer is improved by utilising the Amiga's data bus and there are no extra boxes to squeeze onto your If you're in the market for a digitiser then here are three which provide both good value and top-quality grabbing into the bargain.

#### Vidi Amiga 12 ● Rombo Productions

A slow scan digitiser priced at well under £100, the Vidi 12 is an external model which connects to the Amiga's parallel port and draws its power from the disk drive port. Grab quality is very impres-

sive at the price and the unit is easy to set up and use.

With both Y/C and composite inputs Vidi 12 should satisfy the needs of most hobbyists – and
even some professional apolications. AGA Amiasa are fully supported and there's a black and white

preview screen to let you see the images you want to capture.

Requires at least 1Mb of memory and works with all Arrigas (some models may need a gender changer or extension cable).

#### Vidi-Amiga 24RT Rombo Productions

Rombo's newest digitiser is a real-time, fast scan model capable of grabbing from either composite or YIC video and saving an image in impressive 24-bit hi-res overscan (as well as other formats, including ILBM, AGA and TEF).

The 24RT attaches externally to the Amiga's parallel port and takes its power from an external 9V supply. Grab quality is nothing short of stunning, though you really need a hard drive to store the 24-bit digitised images that can be produced, as they tend to be rather large.

The software even includes a range of image processing functions which could well come in handy when you need a special effect or two.

Yid-Amiga 24RT works with any Amiga (may need extension cable/gender changer) and requires

at least 2Mb of RAM. RRP 2299, though should be available for less.

There is also a cut-down version of the 24RT – the Vidi-Amiga 12RT. The only difference is that it cannot grab interlaced images (maximum size 720 x 368 pixels) but it does cost around half the

price of the 24RTI.

The only major drawback I could see with the RT models was that the preview screen worked rather slowly, though Rombo have just released a new version of the software so perhaps this has now been cured.

## VLab YC ● MacroSystem VLab YC is a fast scan digitiser which accepts either composite or Y/C video. Unlike the Vidi mod-

els, this one installs internally into an Amiga Zorro slot, which gives it the edge for speed over the Violi-Amiga 24RT. It also performs a few clever tricks, the best of which is to grab continuous sequences direct to hard drive. VLab grabs at extremely high quality (up to 24 bit) but, like Violi-Amiga 24RT, it cannot capture.

Vicab graps at extremely ring dainly (up to 2 kil) but, like Vici-Hinga 2441, it cannot capture images in full video overscan – only up to a maximum of 720 x 625 pixels.

Vicab requires at least 1Mb of RAM and AmigaDOS 2.0. A hard disk is almost indispensible – and

a definite requirement when grabbing sequencie.

VLab Y/C costs a little error than Vid-Amiga 24RT but it does provide the convenience of internal
mounting and sequence grabbing, among other benefits. On quality though, there's title to separate

the two.

There are, of course, a number of other digitisers on the market – some which are standalone, others which are part of another device (DCTV for example).

Those mentioned above are my personal recommendations but of course you should do some research of your own to find out what best suits your needs and budget.

wnich digitiser for you?

Three of

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The slow scan

digitisers are

much cheaper, but lack the

finesse of the fast scan

mrdols



Two different styles of digitising software (VLab and Vidi-Amiga 24RT). Outwardly quite different, but actually very similar in function

#### The video digitiser

The video digitiser or frame grabber captures an image which is in the form of an analogue video signal and converts it into digital signals which can be used and manipulated by the computer.

At the simplest level the digitiser samples the video signal waveform and describes the high and low points of the wave in rumerical data. This produces a black and white image on the computer. To get a better image with more grey levels the video signal waveform is sampled at faster speeds and at more levels in between the darkest and lichtest opinises.

and lightest points.

Colour signals are split into their red, green and blue components and each of these individual signals are sampled as if they were monochrome. Once in digital form the red, green and blue data is

#### Composite versus component

Video signals come in two main types, Composite and component signals. Composite video is most widely used of the two but component video provides better quality.

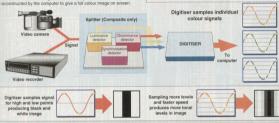
component video provides better quality.

Composite video comprises a luminance signal (brightness), a chrominance signal (Red, green and blue) and a synchonisation signal all sent along the same cable.

Component video sends red, green and blue signals along different cables.

different cables.

Before a composite colour signal can be digitised it has to be split into its component parts so that each part can be sampled.







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#### MULTIMEDIA

seums have suffered in this new age of hi-tech customers demanding exciting and involving handson experiences. Walking round a mausoleum to history, not being able to touch, manipulate or participate with the exhibits is fast becoming an historic event in itself

Fortunately for British culture and heritage as we know it, enterprising individuals and teams have started to change this perception of museums, and now, after nine months of redevelopment, the London Transport Museum has opened its doors with an exhibition that tells the story of the past in a refreshing and modern fashion.

Situated in Covent Garden, the museum underwent a complete facelift for nine months during 1993. Four million pounds later, and the building that houses the array of different transport machinery has changed into a plush, up-to-date interactive learning experience.

#### Interesting

New floors have been built and a multitude of displays, video walls and simulators installed to make the visitor's tour as interesting and informative as possible

In the impressive-looking building with its high walkway and spiral staircases, the exhibition is broken into several sections on different elements of travel - from 1930s. buses and horse-drawn trams to the latest minibuses and underground system

Each is a story in itself that builds up like a ligsaw puzzle into a full-blown picture of how Londoners travelled in the past and

This may sound similar to other museums but very soon you begin to sense a difference. Walking through the display of horse-drawn trams, you start to smell that distinctive odour of horses and hear their hooves as they hit cobbled streets in full quadraphonic sound. As you pass the first tram, a screen

placed on a stand looks back at you. On closer inspection, it reveals a picture with a set of options at the bottom of it. Pressing on one of these flicks the next image on. revealing another part of the story. Indeed,

installed on racks out of sight, with expan sion units, three high-powered Amigas and further plans to expand the range, the LTM has more than its fair share.

The two principal men behind the develcoment of the museum's new technologcal look are Mick Tinker, of Index Information and Rob Langdown head at communications and displays for the

It all began four years ago when Index an Amiga-specific multimedia company were brought in to help with two simulators to be included within the existing exhibits. These were so successful (and reviewed by this very magazine in 1990

that when LTM began to hunt round for

re-launched Landan Transport Museum has entered the technological era giving visitors the chance to smell see, touch hear and taste landon's past. Adam Phillins reports

With £4 million and 65 MARS the

continue walking and you'll see, hear smell, touch and taste your way around all of the exhibits, making the experience all the more interesting and - more importantly

- involving. Because of this attention to detail, there always has to be a high performance, multimedia machine driving it. With 65 CD32s ideas and people to carry them out, Index Information were the obvious choice

Mick Tinker, technical director for the company, was asked to make a presentation. With the likes of the Philips CD-i hiting at his heels. Tinker realised that Commodore's CDTV, while having the ability to provide the graphics required, could not deliver the clarity of text needed.

Having heard about the CD32 and its highly useful expansion port, he drew up a rough design for a module that would expand on the machine's basic facilities and suit all the museum's needs. After successfully outshining rival

machines, the CD32 was selected as the tool for the job, and plans for its installation

Rob Lansdown came on board to work out how the CD unit would be used throughout every aspect of the museum. Each human sense was to be given full attention - what people would hear as they moved from exhibit to exhibit, what they would smell and how they would interact

## Technofear

With this influx of technology, there are bound to be people out there who are a little nervous of touching a screen, simply because it's new to most In fact, Rob Lansdown believes that there are quite definable age

groups who will use the screens, or won't unless prompted. For three to 16-year-olds it's no problem. They know their Sonics and Marios so why should touching a screen bother them?

Sixteen to 25-year-olds are embarrassed a little to touch the screen while the middle-aged are reluctant at first, stand back and watch and then step in to have a go. The elderly won't touch without plenty of encouragement.

Fortunately, any misgivings about people shying away from technology have been well and truly trounced with the latest attendance figures showing an increase in popularity since the museum's re-opening





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with what is usually a hands-off experi-

LTM as I ansdown enthusiastically points out:

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Transport is all about movement, so it was up to us to create the illusion of movement brough the technology." ndex The first step was to install the machines

in one room for efficiency and effective r the mouble-shooting management. "We were initially given three months for installation. This was reduced to eight weeks and then

finally down to eight days - the pressure Next up was the CDx that enabled gen-

locking, networking all the machines to their respective places, the ability to sense

right

over 40 monitors around the building, each displaying information about a particular exhibit and its history

Photographs from the past are shown and text can be viewed in either French. German or English: more languages will be included when the system is finished.

Reading through the text, you'll see a particular word highlighted by a box. Press on this and you'll enter a sub-section giving further details on the particular subject selected

The disc accessing time is around two seconds and the usual number of sheets to look through ranges from 15 to 20 per vehide Lansdown hones to increase this to 50 in the future.

Continuing around the museum, one of the most impressive and interesting exhibits is the computer-displayed Underground hyperman. It shows the Underground's development from its early beginnings in 1863 with the opening of the Metropolitan Line to the 1990s.

#### 3000 screens

Pressing on the date counter at the bottom, the CD32 adds the train lines at the time they were built. Touch one of these lines on the screen and you'll be shown a close-up of that particular segment. Press on an underground sta-

tion and information about its history will be displayed depending upon which year was chosen. Any photographic images will also be

flashed up for your perusal. This system runs from a 550Mb data file that includes 3,000 screens and a program to run it all. This is all put on three disks and played via the CD32

To add to the Underground experience even more there are three simulators to lay your hands on. The first is of a 1938 train that is housed in an authentic train cab with fully operational controls. The front window has been replaced by a

computer screen that displays real time 3D graphics provided by the highly powerful Amiga 4000. The player must accelerate down the tunnel and then come to a stop at the station so passengers may get on and Sounds like simple stuff when compared

to the likes of TFX but given the realistic setting and the highly attractive graphics. this is an well executed idea. The other two



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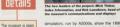
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istered disabled.



simulators, run by A2000s, show the 1890 and 1992 models of underground train with the latest being fully computerised, even down to the speed the vehicle travels in the tunnels The aural side of the museum is well

catered for too - stepping on to a old train and sitting down, you'll begin to hear the sounds of wheels on rails as they clank their way towards a non-existent destination. Speakers under the seat add to the experience to give the visitor a feeling of motion without ever leaving the platform. Go over to the country display which cat-

alogue the vehicles once used by the commuting public, and birds can be heard chirping away in the background in clear digital recordings. Move upstairs to the minibus sound sim-

ulator and the user is able to sit in the driver's seat, go up through the gears, flash indicators and open and close doors, all accompanied by the relevant sound effects.

The wave of progress has not stopped here, though. There are plans to enlarge the amount of information to the visitor, to increase the number of screens and include full motion video displays as well to maximise user involvement. Coming away from the new look London

Transport Museum leaves you with the feeling that at least one part of our British heritage will remain in years to come because the owners and curators decided to move with the times. And if you're wondering what taste can

be sampled at the museum, then try their café after you've finished your visit.

track touch screens and other highly useful fea-

After attaching these to each of the

CD32s and putting them in a rack system, 680 cables were fed from the room to various points all over the museum and 572 hours were spent soldering and crimping the leads The end result is that all sounds and

like the numer

stands which.

visuals, other than the video walls, are controlled by the CD32s and Amigas. The software used in the exhibits ranges from simple touch-screen information bases to three underground simulators. There are





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#### HARDWARE

Video Toaster, nothing has generated so much excitement as the imminent arrival of the PAR - alias Personnel Animation Recorder - from

> As the name suggests, the PAR card was initially designed to bridge the gap between rendering and actually recording Amiga graphics. In the past the only means

to achieve full-frame 24-bit video was to record each frame individually onto tane with an SP edit recorder. Unfortunately this kind of hardware costs

around £5,500 and if used heavily demands another £800 a year in maintenance. In won't suffer from drop-out or other imper-

#### SOUL LITION

As a result every serious Amiga artist has been praying for a solution to this irritating not to mention expensive - problem. As a result, DPS set to work developing a digital video recording system which would provide superior quality, security and speed at a much more affordable price

Fortunately they didn't stop there, and what was initially a single frame recording system has now become a complete digital audio/video system capable of grabbing. editing and playing CD quality audio and 24-bit live video as well as compiling 24-bit animation from the Amiga.

As you may have guessed the PAR card is by no means the only element in this seemingly impossible equation. In fact to build the complete system you require two



The entire system worked perfectly right from the off, but I did find one aspect of the system rates difficult to master. As you already know the PAR can work in concert with the AD516 sampler However the manual only managers to lavish a couple of paragraphs on m subject of combining the two. As a result I was forced to figure out the best way to sync the two

cards together Thanks to the SMPTE option on the PAR control software you can tell the PAR to pause until

particular SMPTE number is read internally from the SunRize board.

simultaneously. Unfortunately the end results were invariably disastrous Fortunately in a rare spark of genius I remembered that v3.0 of the Studio 16 offers a pure

Initially I tried in vain to dive between the two programs in a desperate attempt to trigger the two in/out facility. As a result I simply matched the SMPTE trigger and recording duration in the Pall software to the punch in/out time within Studio16 then hit record.

The SMPTE count started, the punch-in began and the pause record on the PAR transport con trol was releasedsimultaneously; providing totally accurate sync between both audio and video.

addition cards. For sound you'll need the SunRize direct to disk recorder and for live video recording the DPS AD3000 capture card If you flip to the System Essentials box

you'll see this adds up to quite a sizable investment. However the system is completely modular. If you don't need sound or live video capture the PAR will function perfectly without them After adding the appropriate hardware,

the first port of call is the PAR control software. From left to right you have the list of projects, a selection of animations within the current project and a list of available AmigaDOS volumes that you can download frames to or compile animations from.

At the bottom of the project window you're provided with various options to initiate and control them as well as a format the dedicated IDE hard disk/s In the central files window await the tools. Assuming you've already recordvarious animations, it's here where the o

Courtesy of the assorted buttons you can join various anims to create finished movies, split existing files into small scenes, export frames as individual stilled ranges, fields or frames as either IFE Targa or PAR files

PAR's own version of non-linear editor

#### FRAMES

You can also rename anims as well duplicate them. Like all the other process ing tools, duplication will work on both a frames and ranges as well as offering the added bonus of optional ping-ponging and

Not surprisingly the copy and move com mand permits anims to be shared with other projects while the append enable new live footage to be joined directly on



capture live video with a





Bars & Pipes Pro 2, Studio 16 and PAR all



udio 16's drag and drop

s a puni

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ed with

enables

To add a new scene you simply repeat the process on the next track and when all your edits are amplete you just drag the sound samples onto the same track, butt them up against each other and on the various anims together in the PAR software. As a result you can build an entire movie from countless video sequences and still retain perfect lin

To cut the system to the ultimate test I then loaded Bars&Pipes Pro 2 and added Studio16 as an

accessory. Again the AD516's SMPTE timecode was used as a common reference to link the programs Widi output with the sampled sounds

then recorded a matching CD quality stereo audio and video sequence on PAR and SunRize boards, loaded in a Mid composition and sat back in disbelief as the anim played with perfect lin sync In the Midi instruments added the backing music Twenty-four bit, full frame, full motion video, a CD quality stereo sound track and live

accompaniment all from a single machine and without a single offich. Impressive almost sounds like

r editing an existing file

Last but not least comes the delete command which again can be applied to ranges or entire animations. Like its counterparts. you can me AmigaDOS window bristles with buttons which enable you to navigate the Amiga's directory structure, add stills from disk, build animation from pre-rendered sequences and even load individual images for viewing.

A narticularly pleasant touch is the inclusion of a colour filter which will automatically ione-down hot colours - making them compatible with the colour limitations of video which if exceeded can cause real problems when recording to tape

While on the subject of anim compilation, one of the most important aspects of PAR's affinity with AmigaDOS is its ability to compile animation direct from rendering

When the PAR software boots it automatically creates a virtual volume entitled DDR:



Yo move let's not backing from Bars & Pines As a result it's possible to completely automate anim generation. Simply tell the soft-

ware to render direct to the DDR volume and PAR will automatically compile the animation as it progresses, saving you time and better still massive amounts of disk

And because the PAR hard drive can be

live video and 16 bit audio from the same

That's what I said Bishon, it's all strightforward SMPTE link

addressed as a normal AmigaDOS volume.

it can also be backed-up using software such as Ami-Back or Quarterback Although direct render-recording is easily

the most efficient approach it doesn't mean you can't compile from existing files; in fact as long as the files are saved as 24-bit IFFs anything goes, with an average conversion time being one to 12 seconds for each At the bottom of the scene we come to

the heart of PAR control system with an array of tape-deck-style transport controls All the old favourites are available including play, pause, single frame advance, first and last frame, slow motion and of course record. However buttons aren't the only

Installation made easy



I must admit on first unpacking the complete system it does look rather daunting with three cards, the essential IDE hard disk plus connecting cables. However after connecting the IDE and capture card to the Par

and sliding in both adjacent Zorro slots along with AD516, things soon looked more friendly After replacing the lid and connect up the necessary audio and Video Ins and Outs I sat down to install the software fully expecting

countless teething troubles.

However much to my surprise the system was completely plitchfree right from the off - and remained so throughout the entire review

Not once did the system let me down, not a single frame was dropped or sample misplaced. OK, you might expect nothing less from such expensive hardware, but believe me total reliability is a rare thing and stands as a testament to the excellent build quality and software development that's gone into the system

For the technophiles in the audience the combination of the capture card and PAR provide composite, S-VHS and component video ins and outs respectively, while the AD516 sampler provides eight track recording and playback via twin stereo ins and outs.

Amiga Computing

manne of control A elider has also been added enabling the mouse to become a graphical ion shuttle Simply click a hutton and drag the har to the frame of your choice - all in real-time of course

Ahove the transport control sit aroughly the most important elements in the entire interface. On the left you have the frame served in the DAD format while the right shows its equivalent in SMPTE timecode.

By referencing the two you can cut and paste frame accurately and mirror the edits in the CupPine campling software to maintain lin super with the audio track

Below the transport controls await a further eight buttons plus the FPS - or frames ner second control. When the transport is in slow motion mode the EPS window allows any slow-motion speed to be applied

First up in the button bank comes the grab option which allows you to take a sinale real-time areh from the incoming video Alongside is the curiously titled E/E button which enables a live preview of the video source - this automatically activates prior to recording

#### CONTROLS

Next comes the frame or field selector: hasically this tonnies the PAR hetween full interlaced video and individual video fields which is very useful when running in slowmotion as interlace flicker can often be a

Alongside field and frame control comes the GPI button which apparently stands for general purpose interface. Basically this allows limited remote control from either a second mouse or edit controller

Unfortunately the GPI demands some hasic cable construction to make the necessary connections but once established nause and play can be topoled directly from the edit controller - unfortunately that's as for no it open On the second row lurks the mono button

which surprise, surprise toggles between colour and mono. Alongside this awaits a film/video button which enables playback of your creation at 24 FPS - alias movie speed. Following this comes the field selector for

der for the Amiga and videography in general.

and PAR is no exception

In the bottom right await

effects thanks to a bit

Live colourisation

control using the

the PAR and an external genlock sync - if selected Next un comes Proc Amp control

built-in proc ame on

the cature card

Our illustrious aditor moments after the

of a place of wadks

As you've probably gathered I'm impressed if not amazed by the power flaxibility and reliability of the system. However nothing is ever completely perfect

First of all the manual could do with some attention. At the moment it's slightly vague in some key areas - with the connection between the PAR and SunRize board being the most notable example. In fact the audio link could be made a little simpler in general. Fortunately

SunRize are aware of the problem and have promised a virtual PAR track in the next software undate. Hopefully this will completely automate the audio/video connection, but until then you'll be forced to note SMPTE times and cut and paste the audio

and video separately. Another omission is the lack of an RS244 control port on the PAR card. Without such remote transport control it's impossible to totally integrate the

PAR with an edit controller or A-B roll system However, leaving these two curable problems aside, it must be stressed that the PAR system is nothing short of the next step up the evolutionary lad-

the field or frame butter diseastly above Lastly comes the all-important SMPTF button which produces a requester into which you add the SMPTE trigger time for simulta-SMFTE trigger time for simula-

recording when running in conjunction with the SunBize

> another four controls which combine to fine tune the incoming video and aid colour correction. First up is the prefs requester which allows afteration of ecreen colours and artiustment of the sunc between

Basically this only applies to systems running the AD3000 frame grapher. In addition to heing a capture card it doubles up as a TBC which can colour correct the incoming video. In addition, it's from here you coloct the video source whether

it he Composite V/C or S-VHS/Hig and CAV - othonwise known as component. It's also nossible to freeze the incoming video and define a range of ten colour correction presets which can be recalled to improve the colour balance or generate colourising effects

which are then passed onto the PAR during recording With the excention of the Ouit button all that remains is quality control In the case of the PAR this is solit into two elements First comes the O-Factor which as you've probably guessed refers to image

quality. The higher the Q-Factor

the higher the image quality in the subsequent animation However to achieve higher image

quality you must increase the number of blocks used to store each frame. Obviously the bigger the block setting the more space will be required for the subsequent animation.

In addition the speed of the target drive also affects the maximum possible Q-Factor, Basically the whole process is a balance between image quality, disk space and hardware speed.

#### RAI ANCING

Fortunately you're aided in the balancing act by a requester which pops-up at the end of each recording telling you what the maximum block size was in that particular As a result you can adjust the block size

accordingly and re-record to attain the maximum storage space in relation to the required Q-Factor. The maximum possible Q-Factor is 23 which is akin to MII. In other words as close as you can get to D1 alias true digital video - without a digital camera

To give you a better idea, Composite video is roughly Q-Factor 10 while S-VHS lies between 12 to 14, and to achieve SP

Although PAR is a spectacular development It's worth remembering that it is the first of its kind to fact there are already two surfame from Masso Customs and Halfsish - which are in the final stanes of development and promise a similar bland of 24-bit video and 16.hit quein

Ratter still both plan to retail at a significantly lower price and unlike PAR claim not to require a dedicated based disk. However, 1 find it very difficult to see how they can out perform the PAR when it comes to overall quality and, perhaps equally importantly, reli-

quality you'd peed a O.Eactor of maybe 15 to 17. When grabbing, live video time is of the assence and the maximum reliable () Factor I could manage was 18 with a maximum block limit As mentioned this translates to image quality above that of a Retacam SP player - however due to the block sizes this would only allow about 5/6 minutes of footage on a one gigabyte drive

However when you're compiling animation from rendered images the O Factor could be pushed even closer to the maximum - as the system has much longer to process the data and compile the anim If you're willing to set your sights a little

lower, at lets say S-VHS/Betacam SP quality. I'd say you'd squeeze between nine and ten minutes from the same one gios-

byte drive. Of course you're not restricted to this particular drive size and if necessary a second drive can be added as a Slave # space becomes a problem.







Product PAR Supplier: Premier Vision Tel: 071-721 7050

Fax: 071 721 7109 PAR: 61 675 Micropolis IDE drive 1 gigabyte: £743 AD3000 real-time capture card: £895 AD516 direct-to-disk sampler: £999 (all prices are EX vat)

> Ease of use: 9 Implementation: 9 Value for money: 8 Overall: 9

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However Inrome Bussell are determined to revenue the appeal of the refill. Unfortunately they can't avoid the age old problem of syringes but they have done a remarkable job of bridging the divide between hassle and expense. As you

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used with Amigas. Some more modern (Digital Memory Sizing) which automatically resizes the screen to cone with extended video features such as overscan etc

Without this feature, it is necessary to adjust the picture sizing and position with the controls available. Multiscan monitore are generally the most expensive of all types of monitors

You should expect to pay more for DMS. When buying a multisync monitor. make sure it is able to scan down to borizontal frequencies of at least 15kHz for

## MiGraph OCR software

OCR software on the Amiga for less than £50, surely not? Well unbelievable as it may seem, the Amiga's leading OCR software has taken a dramatic price For those unfamiliar with the term, optical character recognition guite literal-

ly teaches your machine to read. All you need do is provide the text in the form of a scan which is then interpreted by the software. If all goes well it should then produce an Ascii text file which can be loaded into any word processor, DTP package or text editor.

As you'd expect such a system relies heavily on the quality of the scan, but assuming you can provide the necessary IFF. TIFF or IMG image the process can be surprisingly fast, and better still accurate

As you may have guessed via the reference to the various file formats it isn't even necessary to own one of the scanners directly supported by the software. In fact any scanner that can provide a reasonable resolution mono scan can be used with the software

As far a resolution is concerned the higher the better, with the optimum level being 400dpi, although having said that I've tested the software using a JX100 colour scanner which has a maximum resolution of 200dpi, and the results were still very respectable

However no matter what scanner you choose it's a good idea to have a

fairly reasonable amount of RAM on-hand - around 3 to 4Mb is probably a It's not that the program demands a lot of RAM, but unless you can scan

Considering the complexity of what's going on in the background, the proability to rotate and flip the scan to achieve the correct orientation Assuming you're happy with the scan, what's next? Well that depends on

the scan itself. If it's pure text you can simple process the whole page Fortunately Migraph have come up with a solution in the form of a selection

of basic drawing tools which allow the creation of boxes and polygon regions which can be drawn around specific areas of text. Obviously many publications - ours included - present their copy in

columns or legs, which if scanned from top to bottom would generate an illegi-However with the assistance of the drawing tools you can isolate each section, column or box out. If you then select them in the appropriate order before

#### Multimedia speakers

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offer the

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on

ge.

r in

Add-on speakers are nothing new to the Amiga but in the past the vast majority have been rather shabby creations which on the whole would look more at home on the back shelf of a

However GoldenIMAGE are set add a little glamour to the Amiga's audio output courtesy of their new Multimedia speakers. Unlike most addon speaker systems, this new range appear to be decided computer speakers rather than cheap are speaker converts.

As you can see, styling has been taken very seriously with obvious results combining good looks with logical design. Controls are pretty basic with a simple off/on switch, and volume control controlling both speakers.

The only minor annoyance concerns connecting them to the Amiga. Unlike most add-on speakers these rely on a stereo mini-jack for input rather than the usual phono configuration.

As a result you'll probably be forced to buy additional cable from your local Tandy to make

necessary connections.

However in my opinion they're well worth the

that the speakers are basically a port-across f rom the PC which often uses such connections for the various PC sound cards. As for sound quality there's no complaints whatsoever – especially considering the price.

Two classic signs of dodgy construction are speaker rattle and signal distortion at higher volumes. But in this case there was no sign of either, even when they were cranked up to full volume.

However before you rush to the phone it must be stressed that the Multimedia range are dedicated computer speakers and aren't really much use for anything else. The impedance is very high and as a result they do need to be driven fairly

In addition they are slightly lacking in bass department and have a marked tenancy to buzz slightly when used with anything other than comruter output

Basically they look great, sound good and retail at a very affordable £29.95. If you want to add a little glamour and improve your audio at the same time they're a big improvement on the conceilion.



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Teaching the Teaching the recognise amount words

There are ample preferences preferences exception easier

the nearier is a giant first from which up in even studed positions are rules from exactive in low propiet the health position for the first position in the propiet of the health position for the first position of the fi

initiating the OCR, each is processed in sequence and compiled into the output file in the correct order.

When the OCR is initiated it relies on mathematical definitions to identify each letter in combination with an optional interactive learning. In the past

OCR software relied on raster-based processing which demanded a huge database to which scanned data could be cross-referenced; fortunately this isn't the case with the Migraph software.

ant the case with the Migraph software.

Thanks to Omnifont mathematical definitions, the database isn't required and as a result much less space is needed, while accuracy and flexibility have improved considerably.

Of course, interactive learning hasn't been abandoned and after every OCR pass you're presented with a screen which scrolls through the text picking up any dodgy characters, symbols and grammatical marks that the software doesn't recomise.

As a result you can train the software to spot irregular words or typos which can be appended to the existing dictionary. If you can't be bothered editing the text manually it's also possible to let the software automatically scan the data and correct any obvious mistakes.

Not surprisingly, the process isn't perfect with a common mistake being the failure to spot capitals and grammatically misinterpret marks. However if you

tend to process particular fonts on a regular basis even these errors can be

All in all I'm pretty impressed. It did fall down on serif fonts more often, atthough on sans serif typefaces it was often near-perfect. Basically if you've got a lot of text to convert and suffer from particularly poor typing speed, it's just what the doctor ordered.

Add together a decent scanner, a reasonable amount of RAM, the Migraph software and a good word processor, and plagiarism couldn't be simpler.

software and a good with processor, and pregiamin colorist to earther.

Personally I found by far the fastlest working method was to process the scan, run the automatic recognition sequence and then load the text straight into a word processor – preferably employing the Collins Linguibase proximity soell checking system.

Once safely installed into the word processor, a quick spelling check usually corrects any remaining errors. Finish off with a quick read through, and Robert's a close relative – so to speak...

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Amiga Computing
JUNE 1994

# Get the power...

The PowerPlay video, presented by Dominic Diamond, reveals the wealth of crucial skills and techniques which led to Danny Curley becoming the former dK and European games playing champion Danny is now a product evaluator for a company involved in developing new games. He tests them, identifies faults and suogests improvements.

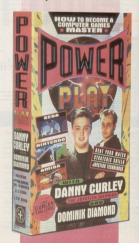
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# Ruckets



I'm writing to say that I think the debate over pornography has unfairly left the other areas of concern in the shade. Yes, we need to know about the danners, and yes, our police should have better

ways to stop this going on, and I agree that the tacky pictures you printed were necessary to raise awareness (though only just), but what about violence? Your raised the issue a long time ago in an article called Seditions Sorites, but it has

been a dead area ever since then I for one have a 15-year-old on who has seen some of the softer computer porn and it's not something I'm over-concerned about

The images he has on disk are no worse than those in the tabloids, but some of the names he plays are much more worrying. There are some in which the blood flows by the bucketful, and characters scream very convincingly (I think it must be samples from actors), and these are his favourite. It seems that the more violence the better

as far as he is concerned, and the look of concentrated glee on his face when he plays some of these games is reminiscent of a sold film nois Some of the language he is prompted to

use when he "kills" his opponents has caused blazing rows, particularly when he's shouting something like "die, you b"""!" at the screen This area of computer software might in

the nast have been less worrying, but now he wants a CD32 and one of those video cartridoes so he can play CD movie games.

I worry that the games will be more violent than most films, and I don't want my son killing real people and enjoying it, even if they are only on-screen.

Shouldn't there be more said about computer violence? Parents such as myself would welcome more debate and some sort of guidance.

Mrs Gilly Weston, Cardiff

The question of excessive violence in computer games has never been taken very seriously because up until recently very few games contained anything

other than cartoon violence. Any attempt to address the issue was met by comparisons to Tom and Jerry and to be honest the comparison is a valid one. However as Video CD takes off and

CD-ROM titles come to contain more and more enimetion - much of it digitised from real life - the industry will have to look long and hard at its policy in this James Ferman of the British Board of

Film Classification told us two years ago that as soon as CD-ROM games contained real-life images, they would come under the remit of the censors and would be age rated. With the current problems at the

BRFC, however, and the pressures of classification on thousands of videos. never mind a whole new medium, it is difficult to see how the present system will cope.

Titles such as Voyeur on the CDi and Demolition Man should, by Mr Ferman's criteria, be subject to classification, but as the TV, movie, and computer industries gradually merge, the dividing lines will be blurred beyond belief We will be looking at this subject

egain in the near future, examining the extent of computerised violence and how parents and others can be assured that games are safe for their children. but for the moment the only guide you have is Elspa's new system and good old common conce When in doubt over a game's content.

hold of it?

While reading your March issue, I came across your advert for a book called Understanding Imagine 2 by the author Steve Worley (page 157). However, on making enquiries at my local bookshop I was told that this book is not on record, but if I could

give them the name of the publisher, they might be able to order it for me. Could you therefore please let me have this information or who I should get in touch with so that I can get

Peter Sheldon, Bradford

The advert you refer to was in fact a mini-review designed to remind new and old users of past



sible take a look at the software in the shop before buying it.

#### COTIL loft out Being a CDTV owner I am getting sick and

tired over all the hype about CD32. Yes it is a great machine but what about its prede-0000001 CDTV owners, like myself, have been left

high and dry by Commodore. Whatever happened to the rumoured trade-in offers where existing CDTV owners could possibly upgrade to the A1200 or CD32? All we are left with is a bloody expensive

A500 with a CD drive shoved in a black box. and a rapidly diminishing software selection I have written to Commodore on several

occasions regarding upgrades and tradeins, and I am still awaiting a reply, so on behalf of all CDTV owners I would like to ask your 1 Are there going to be any trade-in offers?

If so, how much and when?

2 Are there any upgrades available to bring

products which are still good value for money, but we neglected to point out just how difficult the book is to come by these

Sorry folks, but as Imagine 3.0 is on the way. Steve is working hard at the next edition of the book to incorporate the new features, and as soon as Understanding Imagine 3 is available, we'll let you know.

The previous edition has been discontinued for the moment, and we can only suggest that you look for a US advertiser in a copy of Amiga World. which can be found at some larger branches of WH Smiths.



a rapidly dating machine up to the current

snec2 3 Is it worth ditching my CDTV and eaving 3. Is it worth disching my CDTV and saving

Finally, I would like to thanks Commodore for showing CDTV owners the kind of supnort we showed them when we bought the

Mr G Pollard London

We asked Commodore on your behalf, and the answer was that no such ungrade was in the nineline. To be fair to Commodore the rumours you refer to would have been just that, and no Commodore statement has ever actually promised an upgrade, even though they should really have done so

Software support, as you point out, is dwindling, but there are still a lot of available titles, even if the vast majority of CD developers have moved lock, stock and barrel to the new 32-bit wunderkind

You will find that as the year drage on the CDTV will be more and more a forgotten relic of the past, if it hasn't acquired that status already

The idea in the first place was over-ambitious and the attempt to kick start the CDTV market by releasing the A570 was an ignominious failure mainly because it was expensive and most users saw it as old technology.

As for existing upgrades, the only one I know of in the UK is offered by ZCL (0543 414817) who will fit a 2Mb chip RAM upgrade, but it's not cheap

Your final comment about PCs not becoming obsolete is a bit naive, considering the move the PC market has made from 8086 through 80286, 80386 (with the various SX options) to 80486, never mind the huge variety of conflicting sound. video, and interface standards, all of which will be obsolete when the Pentium machines arrive in force

The Amiga has used only four CPUs and three chip sets in eight years (unlike



the DC with its musical Rice sustame) and has retained a better record of downward compatibility than many BC fane would believe

Ask a BC owner how many Windows programs were usable on the 295AT if you think Amina owners are hard done by

#### Amiga lauguts Firstly I'd like to thank you all for being

Amiga anthusiants - it's nice to know that a leading Amiga magazing ign't gup by a lead of husinessmen. However, if you are Amiga enthusiasts prove it by switching to the Amiga to produce Amiga Computing when PaneStream 3.0 is released Having received an information pack

from Soft-Look PageStream 3.0 has about 60 new features which aren't present in Quark Xpress With the superior multitasking Workheach 3.0 operating sys-

tem which far out-performs System 7, and the blinding speed of the A4000. I suggest switching to the Amina

I respect the fact that the manage er of AC may not want to dump his beloved Macs, even though PageStream 3.0 is the best DTP package available but get the message across nicely, and beg if

necessary to use the superior Amiga - I'm sure you'll get your way in the end. Imagine a network of Amiga 4000s all linked to each other all running the premier DTP package, OK, I realise the Mac's childish operating system and one hutton mouse have a certain charm, but seeing as Amiga Computing is always ahead of the rest wouldn't using A4000s and PageStream 3.0. give you that extra boost over your

competitors?

Nathan White Walsall

You aren't the first reader to suggest that we use Amigas to produce the magazine, and you won't be the last, but to suggest we switch from a program (Quark Xpress) with thousands of hours in a professional environment under its belt for a new and as yet untried pack-



in favour of PageStream 3.0?

age is nothing short of madness Even if PageStream 3.0 were available on the Mac, it is highly unlikely that our art editors would be switched from a package they know to one which they don't until it had undergone at least six months of intensive testing by our systome manager. One bug in the wrong

place could cost us tens of thousands of In addition, Europress is a large group nublishing over a dozen titles, all of which are laid out on the Mac, and we need the great degree of flexibility this

offere us We need to know that if we have an art editor off sick or on holiday we can switch one from an Acorn, ST, PC or Nintendo manazine to an Amina manazine with ease. Are you suggesting that all these highly trained and highly skilled

layout specialists are retrained in the use of a new program? If PageStream 3.0 lives up to its press releases, we will have no hesitation in recommending it to anyone setting up a DTP or magazine business for the first time, but the program is a latecomer and can't hope to break into Quark's existing

user base. Sorry if you think this is in some way unpatriotic, but it makes more commer-

cial sense than Amiga tunnel vision. bit on the too quality software and maybe go for more shareware stuff, and

Your Comment article "A disk too far" in April's issue may well have been a valid point of view, but I felt it came across as an unnecessary apology Without doubt you have given away some quality software on CoverDisks

over the years that I have been reading you mag, and even though some of it has been of no interest to me whatspever. I still think that I get value for As for the free distribution of programs on CoverDisks causing damage to

the software industry, is this strictly true? It could be said that many of these programs are in fact past their sell-by dates For example, you said that Kindwords and The Publisher are worth £40,

vet they are both advertised in your mag at £29.99 It's always possible that these freebie CoverDisks may even help the soft-

ware houses. I mean you usually give away early versions of programs, so when readers use them they may well decide to upgrade What about the offers of manuals that go with most disks? As most of

them are around the £10 mark I would imagine this would generate a fair bit Anyway, please carry on with CoverDisks even if you have to cut back a

remember the old adage; you can please all of the people some of the time Vic Storey, Dereham I think I should point out to the rest of the readers that we didn't pay you to write this letter. Yes, we will carry on with CoverDisks, and use commercial software if we can find suitable packages, but though you are correct in pointing out that a single software house will benefit

from a disk giveaway (they wouldn't do it otherwise), the point made in our comment article was that the market as a whole might be suffering One manufacturer of, say, graphics packages might make a tidy profit out of a disk promotion, but the number of such packages sold in the six

months after such a promotion must surely be minimal, and this can't help retailers or other software houses. The policy of other magazine publishers is out of our hands, and the expectations of Amiga users likewise, but there isn't a single Amiga journalist (especially those who have to put these disks together) who

wouldn't welcome the chance to drop free packages altogether.



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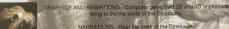
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#### Paint nrohloms from nuter snarp

I have an Amiga A1200 with a 4Mh unorade maths co-processor and a 1954th hard drive. I have tried to install Star Trek and Delive Paint IV came free with my Amiga

execute neither of them contain an areas areas so I have dranged all the and I get an error message "unable

money your tool Deluxe Paint IV/Star

and on checking them with SnoopDos. the swing have failed - Ram Disk - Italities Bayyo Sustam S Profe Was on earth can I do to get these to run? A Removemen West Sussey

I find it very strange that neither of the programs you describe have installer programs for them I know for a fact that Deluxe Paint IV uses the official Commodore mstaller Ah well!

What I would do is to create two drawers on a partition of your hard drive rolled DPaintlY and Star Trek I would then conv the contents of these programs into their respective drawers using the window menu and selecting show all files.

These programs use their own fonts so you will have to copy any fonts in the drawer to your hard drive's Fonts sirectory. The programs should men work successfully (famous last morrie)

If they do work you can then delete any unwanted directories from each grawer, Directories such as S, C, Libs, Dave and I can be deleted as files from mese drawers are called from the hard drive system I find the SnoonDos seneste a little evenieleus. If the proexamp fail to work after trying out the share procedure I would suggest you reformat you hard drive and re-install the system software (Workhanch 3.0)

If all this fails I would advise you to send the products back to Electronic Arte and sek for copies that include the inetaller program



DRaint IV should come complete with a hard

#### A toothy grin

I wish to produce professional I wish to produce professional jects. This comes in IBM and Manintoch formate Will I be able

to use either of these formats directly or failing that, what other hardware would I require? I have an Amiga 500 Plus with extra flon-

py drive. GVP 42Mb hard drive and 5Mb RAM expansion. I also own an HP printer which I use to print graphics. I hope you can R Parlitt N Ireland

Let's clear up one point first I presume you want to use clin art rather than produce it in which case your best bet for clip art material is to check out the many PD (nublic domain) advertisers in Amiga Computing.

They normally contain a vast amount of clip art although if you want to find IBM and Macintosh artwork you will need

Hauing nrahlpms with unur -Omina? Look on further than . OFOS for solutions to all unur Amina\_related nrohlems



The price of compatibility

I currently own an A1200HD and desperately wish to add CD32 capability. I seem to have two choices - wait for the muchdelayed CD32 add-on for the A1200 or buy a standalone CD32 console and a suitable interface between the two machines.

I would be grateful if you could tell me what the likely release date for the CD32 add-on or console

I am fed up with waiting for the add-on, but am nervous that if I buy a standalone console I won't be that the add-on might subsequently have proved a cheaper choice. Any advice?

F Fitch, Ipswich

There are two possible options for CD32 and A1200 compatibility and at the moment only one of these has been realised. Commodore considered building

some kind of interface connector that would allow the A1200 to plug in to the CD32 but apparently came across problems with the FMV and decided to drop the project, However, other hardware manufacturers have taken an interest.

The second option was taken up by Microbotics and consisted of building a specialised keyboard, external floppy drive, printer option and memory expansion unit that could be manufactured to fit around the CD32 The keyboard fits to the CD32 via an external

expansion device that connects to the CD32 SXI port. It may seem a bit extreme but you could sell your A1200, buy the Microbotics expansion module and start from there. You can find out more information about the

Microbotics expansion module by calling Indi Direct on 0543 419999. The keyboard will cost you £45.99, the external Zappo drive £49.99 and the SXI Expansion Module £139.99.



#### INIIIA anns AIIIA

Luse on Amina 500 with two floory drives and a recently added hard drive. I have installed Marielan note my hard drive but I cannot get past the "I need explode library v4"

I remember this was mentioned in an earlier copy of Amiga Computing but I have extracted all the pages I wanted to keep from past magazines and destroyed what remains due to lack of space Unfortunately, I did not keep the solution to the Explode library

Could you kindly point me in the right direction either with instructions or with the date of the manazine in which the correction was

J Woodcook Dayon

All AmigaDOS disks such as Workhench and most commercial packages have the same structure. That is to say that certain directories and files need to be present on a disk for the programs to work. When copying programs onto a hard drive it is not always

enough to simply copy the main program across. Any other files that the program needs, which are invisible from Workharch may also need to be copied. In your case, explode library v4. Libraries are stored in the LIBS directory of your hard drive.

The explode library is in the LIBS drawer on your Maxiplan disk so you need to copy it across to the LIBS drawer on your hard drive. Insert your Maxiplan disk into the internal drive - DFO, open up

conv dffirlibe/avalada library to libe-

the CLL or Shell and type in the following: This should solve your problem.

to purchase magazines specific to these

Scouring the Amiga PD libraries, I was unable to find any clin art on the subject of dentistry (I presume this is why you're after clin art on teeth)

If you manage to get hold of clip art in IFF form, which is the image file standard for the Amiga, you should be able to load it into any reasonable word

IBM and Macintosh-related clip art may need to be converted to IFF if you want to use it so you will need some kind of image manipulation program such as AdPro 2 or MornhPlue

Remember, most clip art is two colour only - black and white. Colour clip art is available but is normally only AGA-compatible so you would need to own an A1200 or A4000

If anyone has any knowledge of clip art related to teeth, write in to ACAS and I'll pass the information on.

#### Missing set-up

Having just purchased the April issue of Amiga Computing, I am somewhat disappointed to find that the copy of KindWords 3 on the CoverDisks does not perform as suggested in the magazine.

True, you offer a very good word processor but there appears to be no way to print graphics from it as you cannot access the





window described on page 22 (Printer Setup). Please tell me if I have overlooked something or if my assumptions are correct that the CoverDisk is not as complete as implied. I await your response with interest. A Skipper, Lincoln

is to read the CoverDick instructions fully Take a look at the apportated disgrams on page 22. Look at the top pic ture and locate the button labelled Next When you click on this button the Printer Setup requester will annear.

Likewise, clicking on the button Ishelled Prey in the Printer Setus requester takes you back to the Print Document requester 'Nuff said!

#### A fountain of worry

I wonder if you could help a novice with the following problem? I use an Amiga A500 Plus with an extra floopy drive and a Star LC20 printer. I boot with Workbench 2 04 and am trying to get the

There have been quite a few let-

tere of complaint about the miss.

ing Printer Setup, but I am afraid

you are all wrong. My first piece of advice

Fountain program to run off the Extras disk When I click its icon all I get is the message "Cannot open diskfont library 37". I have tried using the Diskfont library from

off the supplied Fonts disk but it is the same What am I doing wrong? I know my way around the keyboard but as I say I am a learner so could you explain how to cure this problem in a simple way?

Fountain. However there is a mistake.

S Flynn Newpastle



Diskfont library if Fountain

According to Commodore's technical support chaps and chapesses you will find the information that you need in the Workbench manual page C-2 entitled Installing

Boot up your Amiga with Workbench 2.04 and with the AmigaFonts2.0 disk in DF1. Open the Shell and type in the following:

#### copy >WIL: df1:Libs/diskfost,Library to Libs:

This will copy the Diskfont library v37 over to your Workbench disk. The reason that v37 is not on the Workbench disk is simply because there was not enough space for that and the lesser version Diskfont library.

To enable the fonts directory on the Fonts disk you will need to add the following command to your User-Startup in the S directory of your Workbench disk:

#### assign FORTS: AmigaFonts2.0:fonts DEFER

The Defer option tells Assign not to request the AmigaFonts2.0 disk until the system needs it. Your system will then access the disk every time it needs to access a font file. Now when you run Fountain from the Extras disk it should load without any problems





#### Epson Scanners The GT-6500 and GT-8000 24-bit colour

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owerScan 4 (Colour)	2	2	3	9
owerScan 4 inc. OCR	2	1	5	9
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owerScan 4 upgrade software		3	2	0
CR Full version		2	4	9



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Software HD backup Track Display FastCopy	At extra cost No No	Yes. Software inc Yes Yes
Copier Hardware Synchro Express Bitz Cyclone Clone T2	At extra cost At extra cost At extra cost At extra cost	Internal emulation Internal emulation Internal emulation Internal emulation

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#### FEATURE

he Data Protection Registrar Eric Howe CBE, is the man who watches Big Brother and were it not for the efforts of his husy offices in Milester Charlies Occasion eighteen for visitisiow, Criestille, Orwei's highlinare lig-

Since the office was set up to administer the Date Protection Act of 1994 it has grown in stature and profile from an organisation whose sime few could understand to one of the most important watchdone of the digital ane employing over 100 staff and answering thousands of enquiries every year. Last upar alone a record 5.068 complaints were received from individuals concerned that data on them was being misused.

The role of the registrar is to monitor the extent and use of data held on computer under the terms of the Data Protection Act and to enforce the law when companies or isations over-step the mark

This involves both ensuring that companies register themselves as data users and proceedings either to the

courts or to the Date Protection Tribunal To begin with, when com

puterised mailing lists became one of the big growth industries of the 80s most of us were worried only

about aggressive direct marketing campaigns and the often mysterious ways in which organisations we'd never heard of suddenly not our addresses and started shoving garbage through our letterboxes.

lottorhaups.

These days however there are many more serious issues which take up an increasing proportion of the Registrar's time. Lately, for example, we have seen tribunal and court cases over the use of data by policemen, accountants, and cases where people found out that they were, according to their own mortgage lender, officially dead. Schools. GPs and hospitals have also come under the Registrar's microscope and

been instructed to tighten up their procedures, with the general aim that we treat personal data with the respect which is due to it rather than as just another commodity.

The process of protecting us from comput-

Policeman illegally

apped into computer



As the information revolution gathers nace the amount of data about pach other up store on computer increases every day. Stevie Kennedy talks to the man who regulates its use .

required to register as data users - a status which can apply to any organisation which keeps personal details (just a name and address are sufficient) on computer concern-

ing living individuals. Upon registration, the uses to which data will be put must be clearly stated, and data

must thereafter be used according to general data protection On the other side of the coin individuals have a right under the Act - a right which the

Registrar will enforce by law if necessary - to know of all data held on computer concerning his or her personal details, the so-called subject access right. If the information is inaccurate, you can have it corrected or deleted, and claim compensation for any damage or distress caused in such cases or by the unauthorised disclosure of information To find out what information, say, your bank holds on you, simply get in touch with the Registrar and find out the name of the person who the company has designated as their Data Protection Officer, Next, write to

that person using words similar to these: I wish to make an application under my right of subject access as covered by section 21 of the Data Protection Act (1984). Please supply me with any and all information which you hold on me and to which I am entitled, or

The letter should be sent by registered post so that in the event of non-compliance you can prove that the company failed to respond within the statutory time limit of 40 days. A fee of up to £10 can be charged by the data holder, so it is always best to check before writing and to include the correct pay-

confirm that none is held



Data watchdog to meet bank chief

**Data Protection prosecutions** 

over privacy Registrar to probe data allegation

merous test cases have resulted in success for data protection

> **Amiga Computing** JUNE 1994

# Drathpr



computer about you... ment if any If the

company fails to reply, or you discovor that data is either completely wrong or inaccurate, the Data Protection Registrar will help by forcing the company to provide the information or change it where needs be

#### STIEF FINES The Registrar can't arrest or imprison

with

the

40

by

under the Act, but stiff fines can be levied, or the company can be de-registered, which stops them processing personal data and effectively puts them out of husiness Such sanctions will usually out the fear of

God into even the most reluctant organisation. Test cases heard either in the courts or the tribunal process have, since the Act was passed, clarified, and in some cases strengthened the application of the Registrar's powers. Cases involving direct marketing firms are

the most numerous nerhans but there has been a gradual spreading of the Act into new areas

data ('deita, 'doita) n 1, a

or facts information

protection (proteklan)

For the future, as computerised data use becomes more and more an everyday problem, probably the most limiting factor is that from one office comprising mostly of staff answering telephone calls, the Registrar is expected to monitor the whole of the UK. In addition, public awareness is low, and few people realise just how strong are their rights in this area.

This was greatly improved by an advertising campaign in the early part of 1993, and by the increasing suspicion of people that someone somewhere knows too much about them, but there's still a long way to go. It is estimated that about a quarter of companies who are required to register still have not, and without an enlarged staff it is difficult to



avanaure to

it on if you have

double see been doubts, you know



## The European angle

need for freedom of expression and a free press, and matters of public interest such as criminal investigations, but the drift sack towards putting ordinary people's interests on a leve

good news.

Arguments are going on at European level over several
sticking points, for example over how exempt the press should
be and the power of the EC Commission in this area, but we
should see agreement some time next year and a new Data
Protection Act in 1997.

Let's hope they get it right, and the balance between privi-cy, personal rights, and the interests of a free press is struck a a sensible level.

Eight golden rules Europeand repositorion must shide by these principles laid out in the Data Protection Act

which aguern the way in which information can he collected stored and weed

There are fairly broadly stated, but innoving or breaking them can result in legal action, and if an omanisation has done so in relation to your own details you can make them nov. All nerconsi data hairi on computer sustame must be-

1 collected and processed fairly and lawfully 2 held only for lawful numoses described in the

omanisation's register entry 3 used or disclosed only for those numbers or

in a manner compatible with those numbers A adequate relevant and not expersion in relation to the numoses for which they are held 5 accurate and where necessary kent up to

6 held no longer than is necessary 7 accessible to the individual concerned who.

where appropriate, has the right to have information about themselves corrected or erased 8 protected by proper security

For example, if you pay your Council Tax by credit card, the local authority minht keep your name address, telephone number, and details of your cord on record However, they would be hard pressed to jus-

tify keeping your card details, or even your phone number on record, as neither is strictly necessary for the maintaining of a record of tax navers and would therefore fail to satisfy princip ple four

If you moved away from the area, the council would be obliged to remove all personal details they had collected on your thus adhering to princinle six and the council would not be able to use the data for any other purposes, such as passing details to another department for a second purpose.

see how the Registrar can quickly turn this A surprising number of people don't fully

appreciate just how much extraneous, inaccurate, or downright damaging data can be held on them and how quickly this can be sent from one organisation to another with sometimes disastrous results. We've all heard stories about those who

were listed as dead, or whose credit rating was wrongly altered, but the few cases to reach the media are only the tip of the iceberg

Just about everything we do these days can be affected by computer data, whether financial such as when a loan application is turned down for no reason we can fathom, or social, when everything from criminal records to ex-directory phone numbers can go astray in the electronic jungle. In an age when the world is becoming one

huge information network, it is only through the efforts of public watchdog bodies such as the Registrar that the rights of otherwise powerless individuals can be protected.

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266	FOR A COUNTY OF	(N) Create your own adverture games
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	Want Power	Check your Amiga System
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	Stock Analyst	Analyses the share market
38.	Fort Farm	Variations of fonts available
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40.	Little Office	Word Proccessor, Galabase & Spreadsheet
91.	Wineruker	
142	Budgets 1.34	Accounts Manager
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144		Educational spelling game
44_	Lookpic V2.0	
45	Pielo Kick V1.4	Latest D Grader for A1200

## DEMOS

Girls of sport	Pretty shots of talented oiris
The Run (1 meg)	.T. Richter's car-chase animation. Good
Star Trek Animations	Anims, of USS Emergrise
Star Trek Animations	Agatron no 17 More like above, Good
. Odyssey (5 disks) (N)	Excellent space adventure animation
Desert Storm	Information on Gulf War
Jesus on 'E's' (2 disks) (N)	
How to skin a cat.	Amusing demo
Calendar Sirts	Sideshow
Rave Vision	Rave music & Graphics

### .....

	Hugo's Eccentria (N)	Nine house mixes
	Random Access (N)	Four speas including Art Of Noise
	Jis Limits (2 Disks)	Quality music compliction
	Diberray	Excellent music compilation
	Door	Classic by the Beat Master
	Motiv-R	More ratchy tunes
44	Sound Tranker Samples	(4 Disks) 100's of sounds for sampling
40	Sound Fiflects	Different samples for music making
25	Moine Campine	Decree & Continuous sta

062	House Samples	Drums & Synthesisers etc.
	GA	MES I disks I USS Enterprise classic. Best one
7005	All New Star Trek (2 cross )	disks) USS interprise plassic. Rest one
		Classic but & ball name
		Gassic bat & ball game Horizontal shoot-em-up. High quality
		s) Leads of hints of commercial games
	Dungeon Delver (2 disks)	Difficult adventure quest
	Demolition Mission (1 meg)	Similar to Balloonacy, good fun Construct own train set
	Electronic Train Set (1 meg)	Construct own train set
2043	Learn and Play 1 G	and for the kids. Blackboard maths, etc.
2044.	Learn & Play 2	More fun for the kids
047	Letrx (N)	Tetris game involving letters
053	Mayhert	Brillant shoot-em-up
7065	Pivie Kingdom (2 disks)	Tricky adventury game. Good
271 286	Raturn to Earth (1 meg)	Space adventure
D86		Good general knowledge guiz
		ecommended. 5 games including Metro
109	Wheel of Fortune	TV Quiz, corriputerized
124	Napoleonic Warfare	High-quality simulation
143	Card Shop	Well presented card games Officult platform adventure
149		
	Growth Mexico X	Destroy an expanding brain
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he CD-ROM format has had a colourult history in the Arniga marker. CDTV sparked is off before promptly oying, followed by the AS70 which suffered a similar fate, and now we have the more successful CD32. However, unike in the case of PCs and Macs, there has never been an official Commodore CD-ROM drive for use with all Arnigas.

Taking Frank Munkert's PD filing system, AmiCDROM v1.4, and adding a user-friendly installer with plenty of additional utilities, First Choice have put together a CD-ROM package which any owner of a SCSI interface can plug sreacht into the Amisa.

To avoid the usual hassles with new fling systems, installation is more or less automatic, and after a few minutes of head scratching over SCSI ID numbers, most competent users while he used numbers.

Mountlists are created automatically, and the only complication occurs when the SCSI host being used is not directly supported by the

Five cards — Commodore's A3000, A2090, A2091, and A590, and GVP types — are catered for, but if using another card such as IVS or ICD, the user must supply the device name, which could terminally confuse the non-SCSI literate among us.

Settina termination and SCSI IID numbers is:

meatly taken care of using a row of easy to meach jumpers on the rear of the drive casing, memoring at least one traditional area of hassie. In most cases, therefore, installation should be relatively quick and easy.

The CD unit supplied is an internal Toshiba of the type usually seen inside PCs. Manufacturer's claims aside, it is no faster than one would expect of a CD-ROM drive, managing around 140 to 150k per second on large lies and under 100k per second with smaller iss, but this is the norm for the medium. Access times of over 200ms (as opposed to

and drives with under 20ms) mean that CD-ROM discs drag their heels when used with workbench, but again this is no worse than CDTV. With its four times oversampling, audio asily won't impress hirl buffs, but for most amputer uses it is perfectly adequate.

The two audio player programs included on

be setup disc are PlayCDDA, a cranky CLI stry, and the excellent Workbench-driven alkeBox player. PayCDDA uses the Amiga's audio channels

and plays music via the monitor speakers, which is not a great listening experience, which is not a great listening experience, which was a subject of the speakers which is not a great listening experience, while was a subject of the speakers which is not a great listening to the front of the driver from where sund can be passed to an amplifier. There's



two supplied player programs



tu-num sturage tudio

transform the way we use the Amiga, Stevie Kennedy looks at an offering from First Chaice Computers

also a CD ripper program to grab samples from CD at up to 44kHz quality, but the second disk will be of most use to non-musical users. It contains a variety of utilities to enable the unpacking of 12P and ARI arthwes both vary common on PC CD-ROM discs) and the viewing of GIF graphic files, among other formats.

#### ORMATS

Most ISO 9660 standard CDs currently available include images in GIF or one of the other formats popular outside the Amiga world, and viewers for these types are most welcome.

and viewers for these types are most welcome.

The file system will read Mac HFS and Rock Ridge International Protocol as well, so there should be plenty of material to choose from.

Users aren't stuck with data files, however, and it is possible to play a great many CDTV thes from the drive. You can't auto-boot from



Much of the old CDTV software doing the

CD0: (the device name the drive works under), but nuning CDTV programs from Wockench is as easy as running them from floopies, and often a matter of clicking on an icon. Some CD32 games will also run from the drive, but in most cases only if it is plugged into an AGA machine. In all, this is a tidy package and a well thought

out CO-ROM bundle. Despite the potential for chaos when attaching an internal SCSI device, the on-disk documentation and the Toshiba manual should see the average user through, and once set up the device becomes a steady and reliable AmigaDOS drive. I would have liked a I would have liked a more exhaustive Amiga-I would have liked a more exhaustive Amiga-

I would have liked a more exhaustive Amigabased manual, and a help section for those new to SCSI and CD-ROM, but the friendly installer removes much of the need for these.

Given the right audience – multimedia, DTP, and music – this solution to the CD-ROM problem should do well.

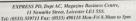
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**Amiga Computing** 

#### FEATURE

he steer the planets and aron the mans have loss been a source of terrestrial fascination to the human race Early civilizations from the most sociologically advanced to the most escentifically retarded, stared with wonder at the night sky

Thou revoted bodies like the sun and moon as not deities and even from very early times embraced a relationship hetween the solar system and nurselyes.

While the night sky has changed little humankind's perspective of the universe has drastically altered. The earth is no longer flat, the sun no longer revolves around our tiny dustball, and the moon (alas) isn't made of cheese

More importantly, studying the night sky as larger affects the gravity of your nockel to astronomical proportions. A cheap refraction telescope costs year little and computer power has meant the home anthuriaet can calculate movements and dietancee using something humble = like a 68000 processor

#### HEAVENLY

With all this computational power available it comes as some surprise that there's very little software available, short of shareware and PD, that covers this area However, back in 1989 Virtual Reality

Laboratoriae unwailed Distant Suns Since its inception, programmer Dave Schreiber himself a keen setronomer - has sought to combine accurate data with colour graphics in a hid to recreate the heavens inside the

confines of a monitor The letest modification v5.0 allows the user to view the heavens in dorious 256 colour for the first time. Before any of this can take place however, you're going to

have to install Distant Suns on to your Anything lower than an A1200 carrying a

## Stars in **40Ur eyes**

Name	Constellation	Magnitude
Sirius	Canis Major	-1.4
Arcturus	Bootes	-0.1
Vega	Lyra	0.0
Rigel	Orion	0.1
Capella	Auriga	0.2
Procyon	Canis Minor	0.4
Altair	Aquila	0.8
Aldebaan	Taurus	0.8
Betelgeux	Orion	variable
Antares	Scorpio	0.9
Spica	Virgo	1.0
Fomalhaut	Piscis Australis	1.1
Pollux	Gemini	1.2
Deneb	Cygnus	1.3
Danidie	Inc	1.3



Computers are used constantly in modern exploration of space and -Nistant Suns uS A claims to be thenerfert romnanion for a starru night . Simon flaus stares through the viewfinder -

68030 will take in the region of 40 minutes to install to, so you'll have plenty of time to brush up on your constellations

Once the program has completed its installation, re-booting displays whatever you've set up as the default. It's probably as well to configure Distant Suns in Planetarium mode, which displays the whole of the northern hemisphere, and by this virtue is an excellent base to begin any

Displaywise, Distant Suns contains all stellar activity down to a magnitude (brightness) of 5.8 in its Core Star database. Movement in addition to these 4 000-odd stars. Distant Suns contains a second database composed of small files.

These allow you to access more accurate, compressed regions of the sky, and make more detail available, while preserv-

ing both RAM and hard disk space. But by far the most impressive feature is the Hubble Guide Star Catalogue Originally constructed to allow astronomers to find stars which are close to brighter objects in the night sky, the Hubble Guide contains over 16,000,000

objects down to magnitude 16. To give you some idea of the power of Distant Suns and its ability to display objects our own sun serves as a fine example. Placed at ten parsecs, our own sun would shine at a measly 4th magni-

#### Comprehensive

turdo

Conversely, sixteenth magnitude objects can only be seen by moderately powered telescopes and are two or three times beyond the range of human eye-

sight. Found within the protective packaging that accompanies Distant Suns is a comprehensive manual that has as much to



Distant Suns uses a combination



about the science of astronomy as it about menus and icons The manual's layout serves as an

manual's layout serves as an and knowledge of the program and knowledge of the program. respection into various projects. Distant The same a closer buterial custom to eduand because of this depth even an

accomplished astronomer will feel more attend using the tutorials as a quide for a

litter a few years basic operations undermedian the fundamentals of astral menu mechanics the user is left to priore the rest of the galaxy at the flick of Evenything within Distant Suns is mouse

and menu driven, although in v5.0 an iconmuch tool palette has been introduced to mant extra speed to the options more mobile used.

#### Time travel

agni-

tude

ately

accessing your favourite objects or findne new features, can be achieved in a variof ways Because Distant Suns has mer 14 000 years of galactic activity stored within its core (dipping as deep into the annals of history as 4 500 BC, and sparing for forward into the tenth millennium), you are witness any given event.

The most accurate and concise method of finding objects at a given time is by using the environment feature. This not only allows you to type in the exact date and time that you'd like to witness, but also the the ascension and declination of the object (the 0.000 system astronomers use to pinpoint spiects, which is analogous to latitude and er of play ionaitude).

Taking matters one sten further you can also change your local co-ordinates using the azimuth and altitude settings. But what rines it mean in layman's terms? Basically if for example you wanted to wit-

ness Orion as its two red giant stars lumbered into the Giza sky above the pyramids # 2 500BC or witness the planetary alignment of the eighties (which was incidentally meant to have caused the destruction of Earth), you can, by simply entering the correct information into the environment bar.

Once you've accessed a particular zone of space you can zoom or pan out of any



The proper motion ontion allows you The proper motion option allows y

given area. Again this is accomplished by using the death of field option from the menu or using the newly implemented icon

There are also a full range of other facilities which will forcingte onthuringte and novices alike Distant Suns allows you to plot the motions of the stars and track their movements using the star trails

While performing such a task, the user can display the constellations as they would appear in the night sky, add lines to aid their recognition and print every star's name

Stare can also be centred on the monitor and all relevant information such as size distance, luminosity and in some cases a nicture obtained

Taking matters one sten further the program includes a facility which allows you to renlicate dawn dusk and even lets you distort your view with a city glare effect

As an added treat and the author encourages turning out the lights you can ask the computer to simulate the twinkling

#### Deen snace

Distant Suns also encompasses facilities to view deep space objects like star clusters, nebulae and galaxies. Included on the menu har is an option to turn on the NGC (New General Catalogue) and Messier Again, once centred using the mouse.

information pertaining to them can be dragged from the menu bar. Closer to home. Distant Suns has plenty

of features to satisfy observation of the solar system. The user can observe sunspots, lunar eclipses and a whole host of planetary motions in action.

The key to this device is through the use of a clock, which is situated within the menu. This allows you to speed time up, or slow it down, depending on what you are

As you can imagine, some of the images that can be simulated, like the orbit of Pluto. take hundreds of years to complete their course. Whereas, a solar flare during an eclipse will last only seconds, and needs to be slowed down.

Distant Suns also incorporates comets and asteroid bodies, and allows the user to do everything, and view everything in the same manner as the other aforementioned phings But one of the most enterprising features of the program is its shifty to create your own real-time enimations. The process involves using tools from the menu and or ARexy commands

For the most part animations can be completed with ease using the programs own devices for more complicated anima tions ARexy scrinting is required



## In canclusian

In terms of features, Virtual Reality Laboratories have included just about every object that lights up the night sky. It's also impressive that every facet within the structure of the program is accurate and faultiess.

The images if a little scarce (considering it's an AGA version) are concise, and the rendering of the stars particularly impressive. The same can be said of the animation creator and the planetary orbit and motion animator

Since v4.0. Distant Suns does feel as though it has matured somewhat, and the inclusion of an icon bar, for the more regularly used options, seems like a natural progression.

Distant Suns is involved enough to keep even the keenest of amateurs at the technological sharp-end of astronomy for quite a while. As a tool for the keen observer. Distant Suns can't be faulted, in fact its even been adopted by leading space writer and expert Arthur C Clarke

But, aside from enthusiasts and schools I see little mileage in Distant Suns for any other user. By the virtue of its subject matter, Distant Suns has to tackle complicated astrophysics, and can in no way be deemed

as a nackage with which to learn The bottom line is that Distant Suns is a first-rate astronomical aid to the amateur, the lecturer or the determined novice with a fascination but

no practical experience, and is probably a waste of money to those who just fancy a slide show. While v5.0 for the Amiga is still a disk-driven affair, CD32 owners may read with some interest that a CD-ROM version for the Apple Macintosh

range of machines has just been released Intrinsically, the program is the same, but the number of images that

a CD can store has meant that a much more diverse range of images are available to the user

As well as different views of major objects within the solar system, the CD version boasts photographs of deep space images, like the Crab

As an added bonus this version of Distant Suns features movie sequences of all the planets in our system. While there's no news from VR Laboratories about a CD32 version, watch this "space" for updates.



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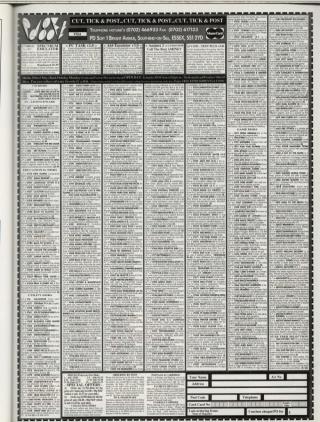
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oftWood's Final Writer word processor was launched last year to the acclaim of most reviewers and was held by many to be the best word processor around

However, perfection is hard to come by. and the program had a few failings. With the release of Digita's Wordworth 3 SoftWood couldn't have picked a better time to hit back If these two competing packages could be pigeonholed, Final Writer has always been

the better DTP and layout specialist of the pair, and Wordworth more of a word cruncher Poor graphics performance from the Digita program and flaws in Final Writer's text han-

ding reinforced the distinction, but since the initial launch of both word processors, the line has become a hazy one. Last month's review of Wordworth 3 showed that, though the first release was

badly bugged, Digita had taken a leaf from SoftWood's book and converted to the school of alitzy design With new layout features such as flexible text frames and templates, Wordworth threatened to pull the rug out from under SoftWood's feet when the bug-fixed version

was dispatched to users To be fair. Final Writer v2 is not a new version of the program but a relatively minor upgrade which deals mainly with improving the user interface. The only new feature is a revamped Undo/Redo which now works with

will reverse any text editing action, but it will now work in a similar fashion with the program's built-in drawing tools. However, no Undo is allowed for actions carried out on imported images, and as Worrhworth's facility to retain the original image's proportions when scaling on-screen removes much of the need for a graphic Undo. Final Writer doesn't have an edge in this department. Where the SoftWood offering has always

II The new toolog

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been in front is in its approach to style tags and user-defined button bars. Unlike Wordworth, Final Writer can utilise up to eight fully-customised banks of buttons, though it would be a rare user who needed more than two man a little abultares when all the toolbares

A new touch for this release is that the button hars can be detached from the ruler bar and placed anywhere on-screen in a floating toolhox. The main advantage of this is that

instead of using the usual button to flick from one bank to the next, the user can resize the fination toolbox so that all tools are available from one window

Some users will never need to make use a floating toolboxes such as this, and there are those who detest the things, but it is always hetter to offer the ontion

By hiding house behind documents so the ask the dooth reducts can be seen it is not sible to keep them out of the way but s instantly accessible, so there's no reason to make use of them

With the tool strip out of the way on its out toolbox, the snace it occupied in the top rule can be used to display the new drop-down menus for paragraph style and font control.

#### TRADITIONAL

In almost exactly the same way a Wordworth 3 fonts font size and text sha can now be selected from quick and east drop downs rather than the traditional manual unord in Final Writer v1

However the way in which the font sa drop-down is presented makes it a pain use. Rather than present the four or five more common font sizes, the huge menu when annears shows every point size you can imagine, forcing the user to scroll through

To test how far this ridiculous feature wou on I tried scrolling up the sizes to the large available, but gave up at about 230. There

# Writer





no facility to just type the required foot size eto a string gardnet as in Wordworth 2 On a brighter note. Final Writer's style

ton a brighter flote, Final Writer's style ags, for which wordworth sail has no equiva-... of their own for easy use during document inemattion

The style tag approach is by far the best The style tag approach is by fail the bost she as any style the year likes for hearlings inchars and notes and so on can be assigned to a style tag which can then be applied to any piece of text with the click of a

CHAIR As v2 retains the ability to define function waystrokes for each style tan Final Writer sers now have three different methods to choose from

Keyboard lockeys with good memories can stick to F-keys, traditionalists can use the old menus, and bright young things can fiddle ohás. nary

Another new toolbox is provided for the tools which normally sit on the ruler bar, but which most users will want to replace with the new paragraph formatting controls. Once oin to outed from their old position, they can be placed in a meirable tool how or just left in the widerness as the user sees fit.

can

roest

Containing the rotation, master page, cut paste, and other useful tools as they do. these are top-often-used features to relenate In the old menus and it is a nice touch that the designers allowed for a toolbox option so

## A missed annactunity

Final Writer 1 had few damaging faults, but those which it had have not been changed or improved with this release, and it has to no down as a missed apportunity

to enable the year to view corrigns returns enames and tabs. In day-to-day use this is a feature which would be rarely used but when it is required, such as when text is imported from another narkane or from another machine it is an essential basic feature for any word processor

dream-like. Another annoving feature is the auto-case, which simnly reminds the user when a certain amount of time has nassed rather than automatically save the document as it should Warrhardth 3's equivalent can be set for either true auto-cave or just a reminder, making it much more useful

Graphics scaling on-screen, though much faster than any other nackane has always suffered from the lack of a proportion ontion and it still does

Few imported images come in at just the right size, and usually have to be essled to fit the document. When this hannens though the Enal Writer uses is forced to mass around until the image is back in its original shape.

As the disk on seasond from distributors Corden Unraned in a Reta test version, it is nossible that these tweaks will still be carried out but there's nothing to suggest that they will. Fingers crossed folks

> tans and master pages is still better equipped for DTP on AGA machines than Worrtworth 2 but the letter's new feet yeer encure that the decision to buy one or the other will be based more on simple user preference than on any definite lead one package has over the other For

## Jargon buster



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Of most note is the fact that there is still on Show Codes ontion

Beformation an alien document and having to guess where the double spaces, tabs, and carriage returns are can be a nightmare to make Michael Portillo as prime minister seem almost

that we can have our cake and eat it Configurability, already a great strength of the package has been further enhanced and the program's modern feel is now even stronger. In addition, Final Writer's huge advantage in graphics handling speed has not been reduced so far by Digita's

However given that no new newer fea tures have been added and that Wordworth 3 (once the bugs are fixed) now has many layout advantages over its rival, it looks as though SoftWood's thunder has been well and truly stolen

Final Writer with its fast granhing style

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(an Final Writer 2 make up the ground it haslast to Marduarth 3? Stevie Kennedy finds out-





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icensing is hig money. From sports and arrade games to films and comics software companies are regularly vying to lay their companies are regularly vying to lay their Academ and Jurancia Bark from Ocean have been moneringly successful worldwide, the names themman colling the product by the truckand to coper fone

in theory at least, the idea of licensing s a sound one - programmers, graphic

and name designers have access as a wealth of characters, stondines and other notential seems offering the opportunity to exploit the material for

what it's worth and give the punter an addictive and miswahle title in return More often than not though the reality seems to be austomers walking away from their computers after a

five-minute play on many of these tip-ins feeling more than a little rinned off

Any notential has been swiftly replaced by a bangard and ancient name design flaccid graphics and lasting

anneal of the type usually associated with a funeral The end result is a product that looks as if it has been thrown together in a week, and is sold purely on its name to the unsus-

necting games-player Ocean have a long history of (mainly

film) licensing, from the low standards of Darkman Donnis and Terminator 2 to the highly playable likes of Robocop 3. Addams Family and the

The Manchester-based company have achieved a financially europeeful series of products, but have they been fair to their customers?



# H licence too l

Why have Ocean involved themselves so much with licensing, and do you intend to continue investing in this area?

We will continue to involve ourselves with film licences in the future but to a much lesser extent than we have done in the next. The simple reason is the length of time it now takes to develop a quality

Has that been a problem in the past?

It has been a problem in the more recent past, but in the future, with certainly the CD platforms coming brough, the length of development is minimum of two years. Now, you don't pick up a film licence sometimes until within a year of the intended release of the You desperately try to coincide the

release of the game with the film. That's become an impossibility. Is that one of the reasons why some

licences can be so had - because they are rushed jobs? Depends how you define bad, but yes...

As in clichéd, unplayable?

"Clichéd", "unplayable" - nice strong terms there. Yes, I accept that some of them have become clichéd, they were probably the perfect vehicle in the beginning, such as the Batman titles.

I also accept that the time constraint which is put on developers must invariably stub creativity. If you take the old adage - a game is never finished - then they are developing a game in a shorter period of time than they would like.

The computer game has become big husiness a money-spinning and -

accented part of merchandising but is the rustamer aptting value for -

maneu? Adam Phillins internieurs Orpan's marketing manager — Simon Altu about their past track

corned and what the future holds .

Is using licences simply a safe route to financial gain? It isn't a safe route, nothing in computer

games is a safe route... M le it enfor?

It is eafer in terms of marketing but we pay a substantial amount of money for a licence because it quite simply provides a massive pre-awareness of a product before we've even started. I say Jurassic Park to you, you don't need to know anything about the computer game except what the content of the If I say to you, for example, Jelly Boy,

which is game that we've got to sell this year, it's an excellent critically-acclaimed game but I have to start at square one which means - again - we have to spend more money on the physical marketing of the product

Do you think, then, that there is a better chance of people buying a game if it

Yes certainly, especially in the peak Christmas periods when a parental purchase becomes paramount - a parent pops along to the local store and wants to get a game for their son or daughter

They usually have no knowledge of comnuter names. If they're lucky, they've honefully managed to suss out which games machines they have to buy for. They then look around They've heard about this nasty Mortal

Kombat thingy. So, for example, [they'll sayl: "Oh, there's Jurassic Park, now that was a great family film," or whatever: "Home Alone, that was another great family film I'll pick that up "

There are certain values that people attach to films, for example Jurassic Park quality, entertainment - that are then subliminally associated with our product.

® On a more personal note, they go into the shop and buy the game. The kids get it and it's a poor game. Does that bother you or is it a case of "this is business

and that's the way it is"? That could be very crass to say "this is business, pal. that's the way it is" because the proof of that pudding is that this market

is now completely driven. It has changed, it is completely driven by market... err, by school and playground buzz. We might receive great day one sales for a poor product, but it will then fall apart

Hids are so

sonhisticated

now that you have to get the

nonfurt right first so that any

licence you pick up is just

an aid to the

marketing

#### INTERVIEW

were avioldy. What we managed to achieve with Jurantic Park was great day one sales because of parental purchase, because of the "must-have" huy because of the reviews that were already established in the

Then word gets around that it is a good name. Kirls see their mates playing it and want to get it themselves and so you continue on a line

You can draw exactly the same analogy these days with films themselves having massive first weekend sales before dving because the public don't like them

You can't kid the public, and kids are so conhisticated now that you have to get the product right first so that any licence you nick up is just an aid to the marketing

That sounds quite nomnous from where you're set coming from Ocean who have produced both good and had games over the last few years in relation to film licences but our attitude has completely changed

If companies do continue to produce poor licensed games, do you feel that they will do the software industry more harm than good, with customers becoming wary and less eager to part with their cash?

I think that those companies would be tools to themselves. I don't believe that it Jurassic Park has performed exception Being a classic game, the right direction

> will damage the industry because the kids have plenty of other choice from original product coming through to vote for with their nocket money

So you'll continue to get vast amounts of money paid out on film licences, but then they'll get dumped somewhere along the Are there any promises you'd like to make about the standard of licensing in the future?

We will pick up a licence where we feel that we already have a project in development that can be associated with that licence.

For example, let's say we've been working on a space game for a year and then a space movie comes along the lines of Star Wars. We would pick up on that and could easily adjust the graphics having got the gameplay right first in association with the

You cannot release a film licence product these days which isn't going to get a 90 ner cent review. We do work on such small marnins that we have to see a return

#### Mow has Jurassic Park been selling?

Due to it being a good game and receive ing 90 per cent reviews, it has been our best selling game of all time, and that was a combination of the ability to market a high profile licence, and having a good game. working together in the toughest Christmas market we've ever had.

#### Thank you for your time.

. If you have any comments or questions about this month's interview then send them to us at the usual address. If you know of any area in the computer industry that you feel would benefit from a visit by the Devil's Advocate, then drop Amiga Computing a line at the usual address.



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isten - pick up the phone, dial the number of the program of your choice and order it. You pounds you spend. The Amiga public domain is alive and kicking

## Gunfighter

#### Programmed by: Overdose Software

I don't remember any game ever attracting quite the attention that this title received people crowded round the monitor to witness two games-reviewing gunfighters struggling to be the guickest on the draw.

Might sound like nothing special; in fact it's based on an ancient arcade game. The main differences between the old version and this update are the digitised graphics of each cowboy as they face each other, waiting for the digitised voice to cut in saying

On hearing the command, the quickest player to pull out their gun and fire wins the round. The opposition collapses in a pool of blood and it's time to move on to the next go. There are five shoot-outs in all and the person who wins the most is the overall winner. There are variations on the theme - East reflexes are vital in Gunfighter -

## ANIMATION

## of the MONTH Flying Lessons Attowns!

Created by: Steve

We receive many animations Those are usually 3D raystraced wonders which requi larly take your breath away with swishing angles and plush

shading but sometimes lack any real character or life that makes animation such a interesting and vital medium. These demos also usually last about five to 30



## Watch Rob learning to fly in this

seconds where refreshingly Flying Lessons hoasts approximately a twominute 30 second humany filled coulful animation that shows real talent

The main character is called Bob, who looks like a blob. One day, while settling



it's possible to choose a short cowboy fr the library of two characters: when shot for

the first time, his hat will simply fly off and another volley from your apparently semiautomatic machine gun is required to finally out him to rest. This is hugely simple stuff but with the attention to detail and individuality on offer. with the Plasticine cowboys and their

humorous look, this is a great two-player title that deserves a look in. Available from: 17 bit PD



history of the role that they played on the Titanir

#### Produced by: Paul Thompson

Disasters, and especially the human variety, have on regular occasions snawned grammes, books and, in some cases, films, Most exploit, but some highlight the human strength and courage that it took to overcome the trapedies. It's good to see as ever - the public domain showing its metal in dealing with a horrific incident in a responsible and professional manner.

Titanic is a comprehensive and extensive telling of the ship's birth and subsequent death. As well as this, there entries on other aspects of the now legendary ship that its makers said could never be sunk the media reaction, the people on board and even the list of the food used in the galleys. This is all supported with music, digitised stills and diagrams

Produced on the Scala multimedia package, the proceedings have a very professional and polished look, with many useful options and help keys. There is also a wealth of text to plough through which is well written and, to be honest, gripping and horrific in places. The package's main

Titanic is an

extensive educational package - on

this screen it's possible to

given a bries

foun for a sunbathe he sees a hird and dreams of flying himself. On waking up. means of thing timison. On making opmir fantasy a reality

is faritasy a reality. attempts to fly shown in Rhubarb and Custard style with flickering constantly shifting line drawings and a basic colour

There's a seal feel of comic timing

through out most of the piece and the and in which it is drawn is ideal and full of character Rob's movement's are subtie and well planned and shows its creator's talents in a very good light Elving I areans is an imaginative sim-

nic breath of freeh air and deserves to be part of any serious animation collector's selection. Highly recommended.

Augilable from: C Atternal

strength is the accessibility - with its good looks and an involving operating system. this is simply more interesting, especially for a younger participant, than a book, and shows off how a computer can be used as serious teaching tools.

Of all the educational titles I've had the fortune to review over the last few months, Titanic is the best I have come across.

Available from: Educational Software Disk No CLF 54B

### Sonir Drum

#### Programmed by: Malcolm Lavery

One of the most exciting developments of the computer age is the opportunity for everyday people to flex their creative muscles. Through the use of technology, subjects are demystified and in many cases, made more simple to us, because a computer is ideal medium for laying ideas out in a clear and thorough way.

Sonic Drum is one such facility for venting your artistic yearnings in to a constructive and satisfying end result. Presented in simple and easy-to-use icons and symbols, the user has four tracks to fill to the brim with sampled



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downs cumbale triangles clans and unice samples among many others. Simply click on the sound you want and

place it in one of tracks graphically reprecented in the order needed. Then, hit the play button and off the computer goes. thumping out your heat at any speed you ehould desire

Available from: M I avany

### Maxilife & Spenduise

#### Programmed by: Marc Fontein

Thanks to some healthy right-on thinking New Zealand programmer, we now have the pleasure of two positive thinking forward planning, burying-the-past utilities that are actually rather useful

Maxilfe may sound like a coffee brand but is in fact a future financial planner. By entering your monetary details such as your salary rate interest and any debts that you might have (shame on youl), the program is canable of working out your money and how

much you'll have after certain period of time (five years and so on). Each option has a useful help feature that explains exactly what you need to do in that particular section. There's only one real

problem - instead of entering balance per year like you're supposed to, you can't - the program actually asks for any debts you might have which is a little confusing.

Once all details have been entered, hit the

## Calling all PD libraries

and individuals with anything remotely worth my while having a neek at If you want something released as PD, or you're a library with stacks of hot new shiff that you haven't seen reviewed in these pages yet, why not drop me a line with a copy. full documentation and even thing clearly labelled? I promise I'll at least look at your mont.

Adam Philling PD submissions Amina Computing Furona House, Adlinaton Park Macrieefield SK10 4NP



#### Scan is Lame

Produced by: Syntex/Tenebres Available from: Joroile Rublio Domaio Diek Ma CC0202

Coming on two disks. Scan is I ame is nresumably a tribute to the artist's handdrawn talents rather than relying on a piece

of equipment with no artistic merit whatsoever to do all the work

Syntey/Tenebres's attempt at making a 256-colour AGA pictures that are of a very high standard. If you're expecting Francis Bacon or Monet then don't look here, but if you're after some commercially-priented nictures then this package is worth its weight in gold.

There are seven images that can be chosen from the main screen. Each is named and it on a part of a linear - sim-

ply press on the one you want and sit back and enjoy the view Names include Woman, Top Model

Future, Jurassic, Easy Rider, The Car and Spirit of Ecstasy. A few of these images are a little risqué but no worse than anything you might find on the walls of some hip restaurant in Camden Town. Highly



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Select different drum beats for nd play them back at full vol



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of seven 256-colour

of work

pictures. Scan is Lame

offers a high standard

#### Timo Runnors

#### Programmed by: Simulmondo

There I was quietly sitting at my desk going through this month's offerings from the libraries and individuals and coming across this disk. On loading up. I was presented with addresses for Italy, which instantly generated a strong feeling of curiosity: I rarely receive anything from Italy and after viewing this game I hope I'll he receiving a lot more

On loading a manu none up seking if vou'd like to see the video story or plough straight in to the game Choosing the name a series of reasonably drawn nictures annear telling the story of the hero and how he and his various friends travel through time until one of them Jessica is held hostage by the Blue Skunks

The basic premise is to find your lost time-travelling scooter, fill it up with petrol and get her in the right time period. After this interesting plot. I was eager to press on with the game itself!

Once loaded in, the player is presented with a large central sprite in the vein of Conrad out of Flashback, the platforming classic from last year.

The man can be made to jump, leap, run walk and crouch - albeit not as smoothly as Delphine's creation but for PD. it's impressive stuff. As far as I could tell the object is to run around hitting the enemy, that come in the shape of robots when inside the complex at the beginning and caveman when outside in the jungle

Chasms need to be leaned and on discovery of the scooter, a logic puzzle game poos up where you have to work out how to get the wretched thing started.

Dinosaurs are another common occurrence, with tyrannosaurus rex and triceratops making appearances in a couple of cut-away scenes encountered during your travels.

The graphics are of a high standard, and although no way as smooth as Flashback. are still pleasing to the eye. The main criticism for most of the game is that there is really not that much to do other than hit. leap and run along. Having said that, there is enough here to warrant a purchase to see a large title with some excellent touches. Keep it coming, Italy.

Available from: Jorvik Public Domain Disk No GAO 158



Walk, run, jump and leap your way through

## Hoading for Homo

#### Produced by: M Bareham You may recall a counte of months back when I award

and the Animation of the Month to a title called Dee's Co. in the Collectivat I referred to the maker as a American Imagine my horror and humble apologies when I received a phone call from Basildon that in fact the author is an Essay man called M Barnham. So now you

know Fortunately here's another connectunity to witness some more of his revutraced 3D work in the form of

est lived but good

raft coming in

looking anim. Heading

for Marris abaum

to dock

Chart supplifies that

stay alive in Blaster, a

Heading for Home. The actual anim is very short indeed about too accords in all and share a suspending coming in to dock at a space station. The work is certainly accomplished but the legath of the piece (under standable really given the power and memory needed to run it) is a hit of a let-down, especially after his latest niene Pon't Go into the Cellar. Identify early this, if uniter after a show that house the

usual high standard that the Amiga can achieve in all things Disney and if you have a machine with at least 3Mh of RAM and Kicketart 2 or higher, then includes in this luvury

state key and you'll get a full pun-down of your olittering financial future. Also included on the disk is Snendwise, a program that helps analysis avanutay expanses and supposts items that you can cut down on to save money

The utility is presented as a series of lists with the names of evnences such properties petrol and so on. These are all fully changeable and you simply enter via the keyboard how much you spend each week on each item. You then prioritise it by entering a number from 0 up to 10, which indicates an essential expenditure such as having to catch

the bus in to work in the morning. Once all this has been inputted the user can call up a stats list with a breakdown of what money is being spent and suggestions

for where money can be cut These are both interesting and useful planning tools which in the words of the author.

help you live life to the fullest. Hmm... Available from: Scribble PD Disk No 11298

#### Blaster Programmed by: J R Evans

Whatever people's tastes are in games. whether it be arcade, strategy or adventuring, there always seems to be space for a good. hardcore shoot-'em-up that boasts addictive and exciting gameplay.

Take Blaster - it looks from the screenshots as being a pretty average looking title but put the disk in the drive, pick up the joystick and you won't put it down for guite a while. There are no frills, just thrills as you guide you ship through a vertically scrolling blast fest that nearly reaches the frenzier boiobte of Llamatron

There are apparently 140 different types of enemy to take not shots at and this alone guarantees that there's always comothing a little different to see on each planet - even if they are difficult to see sometimes against the background

The action is fast and furious and name lets up for a second. Throw in a nile of nower-ups that descend from the top of the screen increasing frenower lives and manuother features, and you've not a name than you must buy - so why are you still reading? Available from: Scribble PD Disk No LIDGE

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20 Shakespeare Av, Orgill Egremont CA22 2HF Make cheque out for £5 payable to Malcolm Lavery

letter, with a small, healiny-fenation, to Steve Attewell



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will not your purposes. You also need for those a language water you may see fashwartened with your lack of progress. If, for example, you are need to progress and the form of the progress o

# leainners

Microprocessors, such as the 680x0 chins used in the Amiga, work by executing instructions built out of binary numbers. Although it is possible to program the 680x0 at this numerical machine code level most programmers use something called Assembly language that allows 680x0 instructions to be written in terms of meaninoful names

For instance, to move a number from a processor register to a particular memory location you would use a Move instruction. Assembler programming is still closely related to the underlying processor chip and for this reason it's called a low-level language.

On the Amiga this type of coding requires not only knowledge of the Motorola 680x0 chip but an indon'th understanding of the Amiga's gnerating sys-Make no mistake it is a big challenge simply

Make no mistake, it is a big chanting shiply said that. Assembler programming is addictive. A ---- the more dedicated Amica programmers 680y0 coding is very popular indeed!

### ERROR PROME

This type of programming is, however, time consuming and error prone, which is one of the reasons why a variety of so-called high-level, easier to use languages have been developed.

Pasic is a high-level language that was originally designed specifically for teaching programming to beginners - the initials actually stand for Reginners All-purpose Symbolic Instruction Code. At one time almost every available version of Basic was different, so it not a had name for portability

N, so it got a bad flame for portability. for as the core Basic commands are concerned in recent years the language itself has also improved immensely (it's become far more nowerful) but a icstill an easy language to learn and use, and that is ite main claim to fame The C language gets a lot of coverage in the

Amiga world - namely because it is the most important of all Amina languages (much of the Amina's custom software was written in it).

C is a compiled high-level language that is flexible enough to allow programmers to do things that were previously only possible with Assembles

This plus some portability advantages is the reaenn that C is popular as a systems programming language

As many people are now discovering, learning to

# (/(++ packages

### SAS C/C++ v6 50 HiSoft

Price: £329 Studente': \$250 v6.xx upgrade: \$59.95 v5.xx upgrade; \$149 v4.xx upgrade: £209

Version 6.50 of the SAS C Development System has just arrived and the most important news is that SAS have decided to bring the C++ language into the SAS C environment at no extra cost.

The software comes supplied on six disks As well as the editor. C compiler and C++ translator, linker, debugger, function libraries and the Amiga header files, you also get a whole host of other utilities for tracing program execution, performing direct file editing and so on.

There are global and peephole optimisers that can improve the efficiency of the generated code, a disassembler, and even a 680x0 macro assembler thrown in for good measure. The compiler itself is fully Ansi-compliant and also extremely fast,

..... ... ... important SAS C/C++ defaults can be set via the SContions

An ovell an about 1.500 pages of documentation. torofffet meate o. 1007 presults c. 1007 maderanes e) eas con affers em ties help

due in part to the fact that the compiler driver called sc. loads shared libraries to handle the various phases (instead of invoking multiple programs) and uses Global Symbol Tables (GSTs) which remain in RAM between compiles.

Other recently added enhancements make it possible to designate auto-initialisation functions that are called prior to the main() function being executed, and autotermination functions (executed when the

main code returns). The compiler can also generate code to allocate a new stack to be created if the old stack runs out (good news for coders who

write a lot of recursive code) and do a lot of other clever things besides. All of the important compiler options concerning compiler operation, error message

generation, file listing, code optimising, linking and so on, are done through an Intuition-based (gadget and menu-driven) interface called SCoptions The debugger, called CodeProbe, has

been given a number of additional enhancements in the latest release but the main one is that it can now be used to debug C++ files The compiler's front end (called sc)

which previously accepted C source code, Assembly language files, object files and libraries, now accepts C++ files as well. Although the C compiler parts of the pack age can be used with a floppy-based system, you need a hard disk in order to use the C++ translator.

If you are contemplating moving to SAS C/C++ then you ought to assume that a hard disk and a couple of megabytes of RAM are essential - the package will then

SAS C/C++ is a brilliant package with superb documentation (about 1,500 pages of tutorial and reference material) and an exemplary record of user support. There is nothing to touch it!

### Many's Aztec C No current distributors

Price: £not known

This package is still used in the States but seems to have vanished from the UK market Basically it's just being mentioned for completeness because Azier

tition to Lattice C - the package that became SAS C Aztec C had many good points and lim Lattice it came with its own set of programming utilities (editor, librarian, debugger and so on) and a comprehensive function library.

Amiga Computing

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OFTIMIZER OFTIONS...

a C compiler package is quite a big commitment. The majo problem is not understanding the C language s fairly easy to get to grips with), but learning about The way you interface with and use the Amina's library

Evou've not used a compiler before you'll need to hard and even experienced programmers can we up to a year to come to grips with C on the Amiga.

### BRILLIANT

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Once you're over the initial problems, though everyme save the same thing it's a brilliant language but do have to be fairly disciplined as far as your anneach to program design and coding goes

incidentally has changed in recent years and the mininal form is called K&R C after a couple of chaps alled Brian Kernighan and Dennis Ritchie, the lanmane's creators. There is now an American National Chandrada Institute (ANCI) atmoderal for the C lon guage and this improved form is called ANSI C. Given the choice it is ANCI C that you should learn to use

C .. (eronounced C plus plus) is an object orient ed programming language developed during the early

80s by Biarne Stroustrup's language team. Throughout its development there has been a strong commitment to keeping C++ compatible with the C lan augan Cas supports a construct known as a class that allows programmers to define objects which

have their own data characteristics and The end result is that the programmer can work

at a much higher level of abstraction and so avoid the nitty-gritty details that make the programming of larger projects difficult in other languages. You should not attempt to learn C++ until you are barny with C itself



# Compilers versus interpreters



een these two app the jargon buster. To elaborate: It you've got a loop which contains instructions that are executed 500 times then the interpreter will trans-500 times as well as executing them 500 times. A compiler-based equiva-lent does the translation once and

When the program runs, all the translation stuff has been done already – so compilers produce pro-grams which in general will run

have to write the program (the source code) using a text editor, then compile it.

### EXTRA CODE

Euro experienced

urnorammore

ran take in to a jear to rome

to arins with f on the Amica

> After that you may also have to link extra code (start up code, code for library functions and so on) to your program and only then can it

be run. If there is a bug then it's back to the editor, make the necessary changes, recompile and so on changes, recompile and so on.
There are quite a few tools around
which help automate the process
but it is still fairly long-winded.
Most interpreted languages are

Most interpreted Ianguages are quite the opposite – you can stop a program, make changes, and then immediately rout the new version, interpreted languages are good for speed.

Some languages, most notably Basic, come in both forms and often the compiling facilities are so well integrated into the system that you barely realise that a compiler is beling used.

# Assembler packages

## Devpac 3 Hisoft

Price: 669 95

There's no doubt that the current Devpac package provides the ultimate Assemblar anvimoment available to the Amina user at the present time. The editor offers multiple-file editing with full mouse-controlled cut-and-paste and the ability to open individually scrollable

multiple windows on the same file. There are bookmark set and locate facilities, macro recording facilities for memorising keypress sequences, and powerful Assembler/debugger integration options. As well as the

editor, Assembler and debugger, the Devpac 3 package includes Blink, the Amiga's linker, Commodore FD file converter and other utilities You also get the Assembly language include files, the standard run-time and link Ibraries plus extra maths and iff parse libraries), startup-code etc, and some example pro-

grams to get you started. Macro 68 Helios Software

Price: £130



Macro 68 is a fully featured, customisable, macro assembler for the 680x0 family of processors. Some of its more unusual features include support for Copper list programming, ARexx controllability, and recognition of both old and new style Motorola 680x0 syntax. Unlike Devpac it doesn't have an easy-to-use front end but most coders tend in fact to use Macro 68 in conjunction with an ARexx-based editor anyway An awful lot of work has gone into Macro 68 and in practice the Assembler does admit

tedly provide facilities that advanced coders could find very useful

Having said that, it is not a particularly user-friendly package and in particular the man ual lacks the soft, tutorial-style sections that make life easier for the newcomer to 680x0

# Basic packages





Amos users can quickly but graphical interfaces...



...but the language rema





quality games which the speedy Blitz Basic 2 is responsible for

## Amos

### Europress Software

Easy Amos: £34.99

Amos Professional Compiler: 524.99

Amos Professional Compiler: 524.99

Amos is a games-oriented Basic-style language which was designed to be easy-to-learn, powerful, and to take full advantage of the Amiga's graphics consolitible. It succended no amost all counts and, as a result, has become

the language, is a good package for the total beginner.

It is also are eleverally familiar with another Basic, or just wish to have access to some of the more advanced facilities right from the word go, then off for the Professional version because to fifther star more governful features. Amos Pro, Incidentally, provides some very powerful Amiga-specific orabicisticsual discriptions.

The long-awaited Pro Amos compiler arrived during the latter part of last year and, depending on the code being compiled, it can offer anything from slight to substantial speed increases.

The compiler is compatible with both the Easy Amos and Amos Professional packages but users of Easy Amos ought really to consider upgrading to Amos Pro before getting the compiler.

## Blitz 2 Hobbyte

Price: £48.90

BMIZ basic is genting quite as a rearrie for itself because, as a compiled Basic, it is extremely fast. Programs are normally created using Blitz Basic's integrated editor/compiler environment (called TED) and an interactive run-time debugger is provided which allows you to examasy – you just select compliant orom the menu. Because of it peed, Blitz is great for games pro tramming and this is where it hain applications lie. Blitz 2 proides some language extension sitest New Yorce and built-in in

vides some language extension called NewTypes and built-in lipprocessing support.

A lost of the Blitz 2 facilities see

to be aimed at the more advance programmer and this coupled to the rather unusual language extension means that it doesn't seem to be particularly suitable for those approaching Basic for the first time

# GFA Basic v3.52

Interpreter: £50

Compiler \$30 extra

GFA Basic has been around for some time and although it still has its hardcore followers, interest from new users seems to be on the decline. Part of the reason for this would seem to be due to a general lack of support from Data Media. The package runs CK on older machines, and on the A1200, but since the release of CFA Basic v3.5 (the last major release) problems have appeared

on some macures.

GFA Basic desm't work properly on the A3000 or A4000 machines and users of various non-standard Arrigas also sent to have held a variety of proteins. Since it seems that there are used GFA upgades or official fixes it seems that the problems of the property of the p

### **HiSoft Power Basic**

HiSoft

Price: £29.95

This is a perfectly respectable Basic which has been around a while and is aimed primary at Workberich 1.3 users who want a cheap entry point into Basic on the Amiga.



# HiSoft Basic 2

Price: £79 (expected)

Unlike the Amos and Blitz offerings, HISoft Basic has not been specifically aimed at the Amiga games programming fraternity. It has simply been a very good, and very well supported, compiled Basic whose core facilities are broady compatible with Microsoft-style Basics found on many other machines.

As we are going to press, a new version – called HiSoft Basic 2 – is being released, which offers a host of new Workbonch 23 oriented goodes. One major effect of the changes will be to make using the Amiga's Infultion and other operating system functions much easier. We also know that a new refetor (actually the one that is now provided with Obeyasc) and a debugger are

being provided.





# PD packages

As well as commercial products you'll find many languages available as public domain offerings. Cursor is a three-pass Basic compiler for programs written in Amiga Basic. NorthC, PDC, and Dice are popular C compiler packages. There's even Gnu C++ available for the more ambitious among you.

analysis clibbs deserves a mention there because he produced what is now firmly established and respect, for the distributable Amiga Assemblar package, called A88k. It forms the basis of a lot of PD Assembler packages and you'll also find it present on almost all public domain C compiler disks.

# **Uerdict**

Best C compiler

SAS C/C++ - there is absolutely nothing to touch this package.

Needless to say it also provides the best C++ translator as well.

Best Amiga Assembler

Devpac 3 – again this package is in a class of its own.

### **Best Basic**

We're going for Amos because it has proven support, good Amiga-oriented facilities, and a large established, and relatively content, user base. But the improved HiSoft Basic 2 (which we've not yet seen) is also certain to be very good indeed.

Since this could provide some surprises it might well be safest to wait until the HiSoft offering arrives before making any commitment.





# Jargon buster



function library: A set of pre-written useful subroutines collected together in a separate file.

interpreters and compilers: High-level languages come in two main varieties interpreted and compiled. The difference is that with an interpreted language you'll write a program and as it truns the interpreter takes each statement in turn, translates it (ie works out what it has to do), and then executes the equivalent machine code.

otimiser: A program that can automatally rearrange, ie optimise, the code bu've written to make it either run ster or occupy less space.

cortable programs: A program cortable if its source code can be tre erred from one type of compute inother and made to run with little o change. The more work needed to

# Supplier contacts

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# Basic packages





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quality games which the anna de Blita Basia 2 is

### Amos **Furonress Software**

Easy Amos: £34.99 Amos Professional: C49 99 Amos Professional Compiler: £34.99

Armos is a names priented Basic-style language which was designed to be easy-to-learn, powerful, and to take full advantage of the Amiga's graphics canabilities. It succeeded on almost all counts and, as a result, has become very popular indeed. Easy Amos, which is a sort of cut-down core version of the language, is a good package for the total beginner

If you are already familiar with another Basic, or just wish to have access to some of the more advanced facilities right from the word go, then opt for the Professional version because it offers far more powerful features. Amos Pro. incidentally, provides some very powerful Amiga-specific graphics/sound extensions.

The long-awaited Pro Amos compiler arrived during the latter part of last year and, depending on the code being compiled, it can offer anything from slight to substantial speed increases

The compiler is compatible with both the Easy Amos and Amos Professional packages but users of Easy Amos ought really to consider

### Blitz 2 Hobbyte Price: £48.90

upgrading to Amos Pro before getting the compiler

s some ranguage extension of NewTypes and built-in I

# GFA Basic v3 52

### Data Madia Interpreter: CEO

Compiler \$20 extra

GEA Basis has been around for some time and although it still has its harricore followers interest from new users seems to be on the decline. Part of the reason for this would eeem to be due to a general lack of support from Data Media. The package rune OK on older machines, and on the \$1200, but since the release of CEA Basic v3.5 (the last major release) problems have anneared

GEA Basic doesn't work properly on the \$3000 or \$4000 machines and users of various non-standard Aminas also seem to have had a variety of problame. Since it seems that there are no planned GFA ungrades or official fixes to eliminate those problems at the moment, we can only suggest, until were hear something positive from Data Media, that you do not jump on this particular bandwagon

### HiSoft Power Rasic HICOH

Dring: C20 05

This is a perfectly respectable Basic which has been around a white and is aimed primary at Workbench 1.3 users who want a cheap entry point into Basic on the Amiga



### **HiSoft Basic 2** HiSoft

Price: £79 (expected)

Unlike the Amos and Blitz offerings, HiSoft Basic has not been specifically aimed at the Amiga games programming fraternity. It has simply been a vergood, and very well supported, compiled Basic whose core facilities are broadcompatible with Microsoft-style Basics found on many other machines. As we are going to press, a new version - called HiSoft Basic 2 - is being

released, which offers a host of new Workbench 2/3 oriented goodies One major effect of the changes will be to make using the Amiga's Intuition and other operating system functions much easier. We also know that a new editor (actually the one that is now provided with Devpac) and a debugger are





# PD packages

As well as commercial products you'll find many languages available as public domain offerings. Cursor is a three-pass Basic compiler for programs written in Amiga Basic. NorthC, PDC, and Dice are popular C compiler packages. There's even Gnu C++ available for the more ambitious

among you.
Charlie Gibbs deserves a mention
here because he produced what is
now a firmly established and respected, freely distributable Amiga
Assembler package, called A68k. It
forms the basis of a lot of PO
Assembler packages and you'll also
find it present on almost all public
domain Compiler disks.

# **Verdict**

Best C compiler

SAS C/C++ - there is absolutely nothing to touch this package.

Needless to say it also provides the best C++ translator as well.

Rest Amina Assembler

Devoac 3 – again this package is in a class of its own.

### **Best Basic**

We're going for Amos because it has proven support, good Amiga-oriented facilities, and a large established, and relatively content, user base. But the improved HiSoft Basic 2 (which we've not yet seen is also certain to be very good indeed.

not yet seen) is also certain to be very good indeed. Since this could provide some surprises it might well be safest to wait until the HiSoft offering arrives before making any





# Jargon buster



useful subroutines collected together is a separate file.

interpreters and compilers: High-leve languages come in two main varieties—interpreted and compiled. The difference is that with an interpreted language youll write a program and as I runs the interpreter takes each statement in turn, translates if (e works ou what it has to do), and then executes the equivalent machine code.

ptimiser: A program that can automatally rearrange, ie optimise, the code ou've written to make it either run ister or occupy less space.

portable programs: A prograportable if its source code can beferred from one type of computanother and made to run with little change. The more work needed if the program running on a new man the less portable the code is consi-

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38 Bredford

CALLERS WELCOME

ptical drives have recently taken a bit of a back seat to the DAT tape as a means of mass storage and back-up, at they have always offered a few major sertages, and with 4th Level's Mo-Miga 1.2 applye drive the formal looks set to make a me-back in professional circles.

The Mo-Miga unit is a 5.25in disc offering arms per side for a total of 1.2Gb driven, ideally, by an A4000 equipped with the A4091

As such, it is a professional user's device and me which is aimed primarily at those with huge data requirements such as videographers and musicians. Fitting either internally or externally, the drive works faster than SCSH hard drives, and in its final form with on-board 1MD RAM

mache, should be even faster.
The manufacturers claim 2Mb per second minimum transfer rate under AmigaDOS and up to 5Mb in fast SCSI-II burst mode – figures which we couldn't test as we looked at a pre-production service

what was suprising, though, was the speed of the drive running under standard AmigaDOS ing systems. Just under 1.4Mb per second transfer rates (DikSpeed 42 with 51% buffer) and an access time of under 40ms gives the drive a huge advantage over all previous optical sources (though SoSH In of both that a lot to do with this). Mo-Miga will of course work with older SSH interfaces, but performance is reduced.

SCSH-Interfaces, but performance is reduced. Much of the unit's speed is gained through the Mo-Miga device driver. This important piece of coding sits between AmigaDOS and the drive and communicates directly using SCSI commands, so that when Mo-Miga's own filing sys-

tem is used a faster synchronous burst mode can be utilised for streaming data to disc very quicky. Under the more usual desictop working conditions, Mo-Miga handles small files well considering the disadvantages of the optical modium. A new filing system developed by 4th Level, which will be ahipping with the finished drives, will handle small files much more efficiently and faster than at the moreor!

From its performance on our pre-production unit, the new system seems set to make Mo-Miga a very useable general purpose drive. Other software supplied with the device

makes it possible to soft up a cartridge to work like a bulletin board. The Audit program is designed to enable the system operator to track all user of the machine, and can be a valuable aid to security.

Passwords can be set, and various levels of user access set so that some may perform all function whereas others can only read data, and so on. Security can be varied from partition to partition and disc to disc, so for example it is possible to allow full use of general software while locking needle out of sensitive data areas.

write locking begind cut or serissitive data areas.
Other software includes Mo-Miga Exchange to allow users to swap discs without worrying about unauthorised or untimely use of their data, and a variety of utilities for controlling the disc sprinning after a period of inactivity, thus saving war and toru.

In all, this is a well thought out and fairly complete system rather than simply an optical drive, and one which should render sterling service in any professional environment. Home users might never see a Mo-Miga, but RBS systops, videographers, and musicians

would be advised to give the unit a try.

# Half a Mo!

Mo-Mays copacity and speed makes it an ideal drive for multiple partitions holding a suriety of organism. The problem with using microsciles in such as way, however, is that the Arings can become contract when what it such as way, however, is that the Arings can become contracted when what it hought was a fixed and drive is no forger Here. Swap cartridges and by care quickly run into problems. To body-sever the disraper, Mo-Magris such were used a status operation for each problem and other commands relating to any suchaire held on that purition. In addition, the partitions are audiomatically demounted.

This approach requires that the user moves any assigns from the userstartup script to the relevant partition startup script, but once done the advantage of not panisking the Arriga every time a disc is ejected makes up for the initial hassle.



- Constitution of the

# Wide open spaces

With the new Mo-Miga optical drive, your data can have as much room to run around in as you like. Stevie Kennedy goes for a gallop

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The processing from a flat of the first in surface a profit-like of the processing from the processing of the processing

Audit allows the superuser to keep track which actions have been carried out, an

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Jeann about Amina

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## CLADITY 16

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which allows rapid access direct from memory. A wide range of CONTROLLABLE effects (including novelties) can be added to the samples including Visitable Deby. Variable Echo and Visitable Surthers.

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unDino lockustrine have held the too enet in the serious sampling busineed for upage with a combination of selent sound quality, unrivalled flexibility a natural affinity to other third-narty hard

in the face of new competition from both m the tace of new competition from both SunBize have decided to consolidate position with release of version 3 of their To 15 sentral coltuero Although the actual hardware remains iden-

and the new front-end certainly shouldn't be montant element of the new package has to the introduction of drag-and-drop technoloas part of Cuelst control

For those untamiliar with the software, the Tuellet is basically the program's internal sequencer. After recording and editing your samples, it enables you to arrange them over In a brilliant piece of design, the Cuelist has

seen completely overhauled and now proides a graphical rather than numerical approach to the problem of sequencing

Better still eventhing is now totally mouserown with a new dran-and-drop approach



Quite simply the best direct to disk annoling software in the business

enabling graphic representations of each samnie to be shunted between tracks and along the time-line with a simple mouse click. Perhans even more important is the arrival of a range of tools which allow samples on the

same track to fade, crossfade or butt up with adiacent samples - again no typing required. Thanks to this feature, hours - if not days of painstaking editing can be avoided, and more importantly any alterations are completely non-destructive. If you don't like a mix or crosstade, simply grab the sample and slide it

closer or further away; it's literally that simple. As you'd expect the software offers a variety of linear and non-linear fade styles - all user definable of course - which when added to the unbelievable simplicity of simply sliding the samples back and forth makes Studio 16 easily the best pro audio solution on the

In addition to sample mixing you're also direct into the Cuelist, which again is a dream for professional musicians and videographers.

Add to that the finishing touch of totally automated ping-ponging - again within the Cuelist - and you have the makings of a masterpiece. For those unfamiliar with musical terminplogy ping-ponging is simply a means of The Amiga's leading 16-hit sampler just ant a major refit Paul Austin auprseps the imprauements

Digital realities



combining existing tracks into a mono or stores ore-mix - thereby freeing the compopost tracks for fresh recording

Combine the nower of the Cuelist with the program's existing ability to record and adjust fader and pan positions in real time and you have amushly the hest truly non-linear direct-to-disk recording and editing system on any platform. However in the case of SunRize internal talents are only the begin-

As you may already know. Studio 16 has a natural affinity with the Amina's premier sequencing package Bars &Pipes Pro 2. thanks to the ability of both SunRize boards to generate SMPTE timecode which can be nassed internally to software.

### MILITIMEDIA

Better still, the SunRize controls can evan appear within the B&PPro2 interface. As a result you're free to combine the Midi and multimedia talents of the standard sequencer with the sampling exploits of Studio 16

As you'd expect, the primary use for the SunRize within B&PPro2 is to provide live virtual tracks which sync precisely with the Midi output of the sequencer, thereby brings vocals, guitar and other formerly analogue elements into a truly digital environment.

It's also possible to append individual samples to specific Midi notes, thereby enabling drum tracks and vocal hooks to be built-up from the profusion of CD-based sample libraries on the market.

In addition to software. Studio 16 also provides a direct link to digital video via the same SMPTE generation used by B&PPro2. As a result, either the 12 or 16-bit board can recorder to provide a 16/12-bit soundtrack to

The software is in mu aninina

the solu credible antian for anunce involved in nonfessional

accompany the 24-bit video of the PAR card In addition, if the PAR is used in combination with the optional AD3000 TBC/real-time digitiser, you have perfect audio/video sync which could even enjoy simultaneous Midi and multimedia support from BAPPro2 As you've probably gathered, the combina

tion of the SunRize hardware and the new coftware is in my opinion the only credible option for anyone involved in professional Amiga aurlio

Although the opposition both offer excellent sound quality, they simply can't match up when it comes to usability. Neither offer SMPTE or Midi support at the moment, and certainly can't compete when it comes to joining forces with other products. Unfortunately there's a price to pay for near

perfection and in the case of the Studio 16 it comes to a heart stopping £200 for the software upgrade alone Obviously if you're happy with the existing

software stick with it, but if you're a heavy user who's looking for improved productivity and unbelievable ease of use you'd be insane not to invest in this excellent - if rather expensive - upgrade Est



SunRize software upgrades are available from: Promier Vision Tel: 071-274 4407



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Alex Gian on Arexx interfacing, plus hints and tips for budding users of the language



### Ilidon 177



# Adam Phillips looks at time-coding, one of

the most crucial elements of any production



# Music 179

Paul Overaa judges two answers to the problem of affordable musical scoring



# Comms 181

Phil South fills us in on the latest in the world of communications



# EBI enmA

Write your own snowing text routine with Phil South's help



# Publishing 185

Retouching your photographs can improve your life, as Ben Pointer found out

# GUIDE



### Up and Running 168

Comms expert Phil South on how to start your own RRS without spending a fortune



# AmigaDOS 170

Steve White continues his voyage along the paths of the Amiga's operating system



### Assembler 172

Beginners' quidance from Mark Jackson on the most powerful programming language



### **Classifieds 184**

Snap up a second hand bargain in our readers' own advertising spot



# Can vou kick it?

The 1994 World Cup is coming this Summer and along with it are about a billion football games. The one which looks like becoming the firm favourite for the top root is Kick Off 3 from Anco

It's the follow up to the legendary Kick Off 2 which shattered sales records and and totally unique new features

Unlike its predecessors, the third game in the series will be viewed from the Unlike its predecessors, the third game in the series will be viewed from the diving headers and 30 different set plays for corners and free kirks giving the most realistic dead hall situations ever

Over 2 000 frames of animation have been used to create smooth, fast flowing action which the creators say make Kick Off 3 the most realistic soccer game.

We shall son if what they say is true when it arrives later this year, but by all





# The Return of Dark Seed

announced that Dark Seed will soon be available for the Amiga CD32. Dark Seed. winner of the highly coveted Software Publisher's Association Award for Rest Fantasy Role Playing/Adventure Program, has sold over 135,000 units worldwide, and continues to be a bestenthusiasts

Cyberdreams collaborated with Surrealist HR Giger to produce the gothic horror adventure. Giger is world renown for his work on feature films such as Alien,

Poltergeist and Alien 3. Giger revolutionised the look of sciencewhich depicts the synthesis of biology and without the influence of man

In Dark Seed you play Mike Dawson, a science-fiction writer who has just moved into a Victorian mansion. As you explore your new home, you discover a gateway to a parallel universe inhabited by sinister and horrific beings

whose sole intent is to destroy all of Software nublisher Cyberdreams has

Mike has only three days to solve the mystery or he will undergo an evil and

The CD version of Dark Seed is expected to have an enhanced soundtrack including

digitised speech and even more spectacular Giger-inspired graphics. Although it's not scheduled for an Amiga

release, Dark Seed 2 will be released later this year on the PC, Macintosh and Sega CD systems. It will pick up from where the firm Dark Seed left off and will involve even more diabolical machinations by the aliens of the Dark World.

Dark Seed 2 will take advantage of the latest computer technologic and feature more digitised sounds and anmations, plus more importantly an expanded story and improved puzzle structures.

release it on the Amiga because I know dying to get their hands on the sequel.



The H.R. Giper inspired adventure, featuring the trials and tribulations of a science-fiction writer, will appear on the CD32 later on in the year

# Empire take off

Not a company to rest on their laurale Empire have not a huge bundle of got a nage bundle of new and until the end of the year We've already provioused Dreamush and Cubernace both of which are due for a Summer release but Empire have not some more delightful nunnets of software



growing game market with their

turked un their sleeves Due for release in June is the creatively-titled Empire Soccer which apparently captures all the excitement and fast paced action of the World Cup competition, Empire Soccer will feature an extraordinary depth of gameplay coupled with some dazzling high resolution 256-colour graphics.

On the nitch you'll be able to perform moves such as diving headers, banana kicks, overhead kicks, back passes and nower shots. Empire are trying to put emphasis on the games smooth scrolling and it's highly reactive ball and players

Empire's record release. The Dawn of Aerial Combat is a return to the skies with a state-of-the-art World War I flight circulation. Each awast is played out in superh 3D with full control of 15 aircraft. The name takes a detailed look at dozens of actual cituations from WW1 and provides background information on real-life ares and planes

Schadulard for a Sentember release The Dawn of Aerial Combat is looking very good indeed and you can expect a in-depth System preview in the near future.

# SYSTEM Lechnologu

The section where we shine a snotlight on the major players in the computer industry and their latest and forthroming hardware and software

# Send is heat one of



Valhalla from Vulcan

Vulcan Software are a brand new software house who are hoping to make a name for themselves in the Amiga marketplace.

Their first release is Valhalla: Lord of Infinity which has been in production for almost a year and is sched-

Billed as a speech adventure, Vulcan claim that Valhalla is the very first game of its type on the Amina The finished version will have a handful of disks entirely dedicated to the aural side of the product

The game is viewed from a topdown perspective of the main chararter, Valhalla, an innocent elfish kind of creature

The finished product will be a collection of logical problems which get gradually more and more complex as you progress through the

Programmed by two graduates, Lisa Tunnah and Paul Hale Carrington, Valhalla is looking very impressive and Vulcan's first entry into the cut-throat world of Amiga games could well become a big



product and it has been billed as the ld's first speech adventure



dvish creature who is trying to turn wrongs into rights

# Ocean get Mighty

Michty May is an inch-high adventurer who is currently a ton-selling toy across Furone and the US. Not only does be appear in a range of toys. but he has his own television series and range of videos. It thus comes as no surprise that Mighty Max, via the software talents

of Ocean, is going to appear in his very own computer game. True to the futuristic theme of the cartoon, the game features an movative split screen two player mode. During the fast-paced action,

Mighty Max must recover as many as 400 components of the world's nost nowerful weapon before his arch-enemy. SkullMaster, uses it to destroy the Earth. In two-player mode, each player will have separate components to assemble, and each is able to sabotage the others attempts. With five scenes, each with five levels, of frantic head-to-head action. Mighty Max is, allegedly, set to make a mighty mark on the Amiga at the end of the year.

Other Ocean news involves their Hit Squad budget label. Recent negotiations have lead to Ocean acquiring the rights to republish 12 of

Virgin Interactive's software titles Paul Millar, the Hit Squad Sales Manager, commented: "The Hit Squad is synonymous with value for money and quality and the Virgin titles will certainly strengthen our position as the best budget label

"All of the 12 titles are outstanding in their own right and I am proud to have them in the Hit Squad portfolio."

The Virgin deal will add to the label's already impressive line-up of titles such as Lure of the Temptress, Jimmy White's Whirlwind Snooker,

Dune, Archer Maclean's Pool, Realms, Supremacy, KGB, Reach for the Skies, Shuttle, Dune 2, Legend of Kyrandia and Cannon Fodder. All of these signings are due for release within the next year





In this section we tell you which nieces of software have shined over the last few months and why they should have a place in your names collection

### Skidmarke

Acid Software's racer has not gorgeous graphics, superb sound, is highly playable and unbelievably addictive. It's a very polished rarer that totally destroys all of its competitors. I could go on for hours praising this game, but I really only need say two words - buy it.





### Simon the Sorcerer

Adventure Soft's game is cram-packed with puzzles, funny guips and silly asides. While it's a title that you're not meant to take too seriously, it will give you plenty to think about if you're to complete it. Simon the Sorcerer is a very large well thought-out graphical adventure that'll keep you happy and out of harm's way in the land of giants, fairies and dwarves.

### Man Utd Premier Legaue Champions

I've thrown away my copies of Sensible Soccer and Goal herause Krisalis have created an ultimately more satisfying football game that will appeal to the true football fan.

The graphics are nicely presented and highly realistic. Couple this with its level of playability and addiction and you've got a hell of a game on your hands. Goal and Sensible Sorrer fans will want to have this game's babies. Buy it and float to football heaven.



### Labyrinth of Time

The bottom line is that Labyrinth is a superb addition to the adventure genre. It has amazing stylised graphics and a level of depth and playability seldom found in computer games these

days It's great news for punters who've put faith in Commodore and the CD32 because this is a title which starts to truly show a little of the machine's capability.



## Hero Quest 2: Legacy of Sorasil

Legacy is very easy to pick up, using a point-and-click system in conjunction with the mouse. This is typical of every aspect of Sorasil - generally it's easy to use and even easier to find your self absorbed within.

This combination of D&D style rules blended in with the visual aspects of combat and spell-casting will make Hero Quest 2 an instant success with RPG lovers.

### KOAN

OK, so it might not have spectacular graphics or sound, but it has it where it counts and that is in the gameplay and addiction departments. I'm finding it really hard to fault K240, but I suppose if you play enough it will eventually get a bit unvaried, but the later aliens are incredibly tough and will take a lot of experienced K240 playing to beat.

Gremlin's space strategy is a truly engrossing game that will keep you awake until the early hours and I heartily recommend it as this month's game to get your mitts on.



# The scores on the doors

### Our ringrous senting system explained

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he rain doesn't denress you in Manchester You net that much of it that often a while that it becomes just a mild irritation. In this instant it's doing me on favours. I'm late lost and having

It can't be that tough though, this is Chorlton-cum-Hardy The Charlton of Charles and the Wheelier fame. The home of the most famous asimation studin's in the United Kingdom, Cosgrove Hall.

The company that bought you Danger Mouse. Durkula Wind in the Willows, and, perhaps to their eventual cost, the full-length animated film The Big Friendly Glant

Rack in the middle 80s Cosprove Hall was undoubtedly the largest employer of Manchester's creative population, and churning out hour after hour of tele-

vision quality animation That is, until the recession began to bite harder than one of Baron Greenback's monster creations.

and Cosprove Hall began to collapse. After embracing animation

and cartoons the TV comes nies saw them as old hat, and cut huge holes in the hud-

Suddenly, the streets of Manchester were littered with animators and background artists. Fortunately





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though, as one medium began to dry up, another one emerged. In this case it was due to the advent of CD technol-

ogy, and the software industry's desire to improve the quality of its product with introductions and link ani-

As this research information runs through my head once more, I suddenly notice the rain distorted sign I'm after, the key to my destination and home to Fat

Fat City, along with a couple of other Manchester based animators, have managed to break into a field that could have never become a reality if technology hadn't intervened.

The man who initiated this slight swagger away from TV animation into the world of computer games is Fat City company director, Vincent James. Sitting back in the comfort of Fat City's paper-

strewn offices, I sip coffee and wait for Vincent. feels homely, and I can't work out whether it's











MY FAVOURITE





because everywhere I look I'm seeing wall-mounted televisual icons from my youth like Danger Mouse, Penfold and Duckula, or whether it is just plain comfortable.

Vincent appears, and after a short bout of cursing busy schedules we get down to the business of the morning. After a few words about some of the framed shots on the wall. I eventually managed to ask Vincent how he got started in animation.

"I left school with no formal kind of art qualifica-

tion. In fact, I had a job at Aerospace, But, I hated it that much I left for a job in a design studio. "They were knocking out rag-mags and that kind

of thing, and ever so often there'd be some form of spot cartoon, which I got into doing." "This went on for about five years, until Cosgrove

Hall approached me. Having seen some of my strips they asked me to join."

Vincent explains that Cosprove Hall were just on the verge of massive expansion: "When I started

# How it's done...

Fat City receive the script some ideas nenerated by meetings and a storyboard

A first draft of the moving animations is drawn and then charmoned into a blueline animation. This is then transferred onto video and shown to Millennium

Following an approval by Millennium. the animation is tidied through a procerr called clean-up. In this procedure the blue-lines are inked over and tidled up

Then the line drawings are photoheat imaging. Then the background artists, Aileen Raistrick and Michelle Graney, paint the background cells on the reverse of the cell using water-based paints.

The different layers having gone through the same processes are all put together. To avoid mistakes all the action is tied up using a field size. Basically, this is a square which aligns each layer, and allows the animators to know exactly where something is taking

From here, the finished cells are taken to film. Animation is generally filmed on 16mm 35mm and Hi-hand video. From here the film is sent to be processed.

If the rish print meets the required standard. then it ones to editing and solicing. Then, the rush print is sent back to the processors and the answer print comes through.

Then if Millennium are satisfied with the answer print, the film goes to dubbing for sound to be added.

The only exception to this whole procedure is if lip-synching is required: then, this needs to be added at a much earlier stage.

there, there were about 60 of us, six months later and there were 120 - it was crazy."

On this note, the conversation swings around to Vincent's work at Cosgrove Hall. "While the majority of the animation staff were involved on BFG, five of us were busily creating Duckula in collaboration with

the American cable channel Nickelodeon." "I was frustrated and decided to freelance. After











vew



that I went to Leads and worked on a project called Fiddly Foodleburg. It was a totally spaced-out cartoon series. I mean totally drug-oriented and created by

this burnt out old hippy. \*But some good did come of it, as I learned all the other techniques of animation like ramera and sound things that at Cosprove Hall you'd never have been allowed to learn. Oh, and I met Aileen, who does all

the painting of the backgrounds in Pond." And this moved us very neatly onto the subject of James Pond, and Fat City's association with Millennium Interactive. Pond Three features an animated introduction which some of you may well have seen extracts from on the CD32 version of Pond 2.

Vincent explained how the two companies came together "I met Millennium because of a mate I had from my freelance days. He said he'd got some design work

from this computer place." "They turned out to be Millennium, and needed someone to design their animation sequence for them Answay. I met them and got the job."

"We were going to do the backgrounds but we soon found out that it wouldn't be that sensible a thing to do the main reason being that it's just too technical for us "

### PPORIFMS

"They had a lot of trouble with our drawings. You see, computer artists repeat things and loop different backdrops. It was killing us!

"We were just drawing backgrounds, and they thought they were lovely, but they ended up in the bin because they would have soaked up that much memory."

With this in mind I asked Vincent what kind of problems they encountered during production.

"Problems, problems, yes, there were plenty. We produced a test piece that didn't work [laughs]. We did watercolour wash backgrounds, and of course they have a watery look to them. And, because the girls mix paints randomly, the colours are impossible to match."

Having visited Millennium Interactive on several occasions, I've always found them to be quite a progressive go-ahead team. The products they release are the relationship is like. "They're not awful [laughs louder], they're a good

bunch of guys. But in terms of animation they don't really know what they're on about. They tend to be really finnicky about little things."

\*Basically there's a clash between art-based creatives and computer creatives. They both want to achieve roughly the same thing but go about them in completely different ways." As the tempo and volume of the conversation shifts

up a gear, we slip into computer games in general:

During my visit to Fat City Films I met up with Paul Order to move Johnson who was given the arduous task of explaining the techniques employed in manufacturing animation for the Pond and Pinkie sequences

to be transferred into DPaint."

to ecualiques emproyed in manufacturing animation for the rond and rinkle sequences.

While in conversation Paul, a 25-year-old graduate in animation, told me that before he'ri worked for Far. while in conversation ratif, a 23-year-old graduate in animation, total me that defore he City and done a stint at Catalyst, the company that animated the introduction to Sorrer Kid.

ay any some a sum or cataryst, are company that arismated the introduction to some novements off Fat City "Millennium send down a set of storyboards and rough character designs. Trial and error has already told.

us that there are certain things you can't do on a computer." "For example, characters can't walk up or down slopes any steeper than 22 degrees. If the hill is steeper then the character just doesn't look right."

en the character just doesn't rook high.
"Answay being well aware of the pitfalls, we then draw rough pencil animation cycles. Obviously, we'll

redesign anything we think's a little flawed." resign anything we thinks a little neweo.

Then, the pencil animations are cleaned up and turned into what we call blue-line animations (which sneak for themselves). These are then transferred from film onto video, and we send them off to Millennium



ments for James Pond Four. They fax down some

rough outlines, and we give them back three differ-

"They then transfer them into an Amiga and use

"More importantly, we're actually doing a game

As it's a project that's been kept pretty tightle

"Not long ago, you couldn't have this type of an

"I remember the early attempts to convert animal

"I'm not too up on computers, but I hear people

Drawing to a close, I ask whether computer game

raving about full motion video. The potential fall

tion to CD. It was all jerky because it missed frame

Now technology has shifted a little further and the

mation in computer games. Now we have inserts a

called Mega-Mite. It's kind of reversing the process

under wraps. Vincent takes me down another avenue

ent versions of actions. like thrusting or iumping."

them in DPaint."

that we've worked under before

between levels and all sorts."

COMPUTER GAMES

put it straight onto a CD."

interactive animation is huge."

and begins to enthuse about the future:

"What happens at the moment is that the nonartists, in the shape of programmers, make the games, and use us to fill in missing bits." "But these guys aren't trained animators. In fact.

they don't know the first thing about techniques of character movement, they just quess." "Most of the games lack invention. The games

houses think they create stylised characters, but they have no idea how to bring something to life "Most of them are still in the mid-80s using bloody

air-brushes on muscle-bound blokes or marine-boy clones. They haven't got a clue." Following this line of enquiry further, I'm curious

to establish if Fat City have designed any computer game characters of there own "Yes, we've done a couple of things. We did some work on a game Millennium have got coming out soon called Pinkie. For Pinkie we did some of the in-

game animation, and the title sequence." Vincent went on to explain how he came to be working on Pinkie "I first saw Pinkie when it first arrived at

Millennium. I was down there by chance, and these guys started hawking this thing they'd got."

"It was one of the nicest things I'd seen. I loved the colours and the palette they'd used on the backgrounds - quite psychedelic." "We're also doing some of the character move-

are proving to be a lucrative new avenue for animal \*On the whole computer games have been were

healthy for animators. At the end of the day it's work I mean you want to make a Tom 'n' Jerry, but you've got to pay the bills." Glancing down I notice my empty coffee cur

Vincent follows my stare, offers to re-fill my mug but politely informs me that he's got to fly off to Lees Having one of final query, I push my luck and ask har who his favourite cartoon characters is.

The answer comes immediately, and with a authority that is without question:

"Felix the Cat without a doubt. He is the ben designed character of all time. Simplicity in a essence, and 50 years ahead of its time. With this, the meeting comes to a close, Vincent

on his way to Leeds and I'm back on the animate streets of Choriton.



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Which computer(s), if any, do you own

# Introduction

the she forthcoming World Cun this lune many software houses have seen a great opportunity for a swift market. ing ploy - namely bring out as many football titles as possible to cash in on World Cun fever which is bound to hit the country. But never before are we going to be so spoiled for choice as the reviews on these three pages show.

# Sierra World Cup Soccer '94 Sier

Sierra are making their way onto the football simu-Jation scene with Sierra Soccer. From what we've seen the game will have a whole host of ontions seen the gar

It can boast built-in intelligence for accurate computer simulation, a new free kick and corner directional system allowing you to choose height

and distance 4,000 frames of player animation, and a 3D view for fast and smooth oraphics

Other features will include a replay ontion with fast forward, rewind and freeze frame; animated convenes of referees and injuries to players and digitized sound and speech effects.

Norm um the wen up the animated



# Fantasy

# World Cup USA '94

This major World Cup tie-in will contain many variables you can alter, like being able to change the glue factor; whether you prefer to play the ball sticking to your foot or whether you like it to bounce away from you. Many features from other football games have been added to World Cun the most comprehensive release

The game is set for release around June - just in time for the start of the World Cup.

# Kick Off 3 Anco/Imagines

Variation will be dealing with the ending

The SNES version is nearing completion and it's already Incking impressive, but the Amiga version promises to be a lot faster as well. The game can boast 2,000 frames of animation and state of the art round offects

New ontions will include practice, arcade and rimulation modes. At any point in the game you will be able to access match reports or nive team pen talks to nive your players specific instructions



# **Sponsorship**

A common trend in sports games, football games in particular, is to get a big name to endorse your product. What bigger name than Manchester United? We talked to Tim James Krisalis's DR man, about their Manchester United Trillogy Tim James is far from being boartful when he caus that the trillogs has been the most successful product that Krisalis have released

The original idea of managing director Tony Kayanagh, it was obviously a good move, but how much of it do they believe was down to the product. rather than the name behind it?

Tim is quick to point out that no matter what a product is called, the actual name is what counts, and it's all down to how successful the program. mers have been

However in the early days with Krisalis still establishing themselves Tim believes that having such a licence behind their first United release did a great deal to increase their credibility

Having such a club behind their game could have its drawbacks, namely that fans from rival clubs will avoid their game on principle. But Tim has no doubts that having Manchester United behind them does not have disadvantages.

He believes that as one of the most successful clubs in Europe they have gained great respect from football fans even those from rival clubs. As opposed to choosing other big clubs such as Liverpool. Arsenal and Leeds Manchester United have earned much admiration for what they stand for However, Manchester United didn't have a great deal of say in the devel-

opment of the game, unlike some of Krisalis's other releases such as their Graham Taylor licence where Taylor played a large part in helping create the right statistics and features for the game. Manchester United simply placed their trust in the experts and left them to it As for the future, there are no United releases on the horizon but Krisalis

have just renewed their contract with the team. So, who knows, perhaps Manchester United – Premiere League and FA Cup champions?



Vick Off 2 was set to hit the shelves cometime in May on

many formate including Amiga and the CD22, and it's sure

distinct playing styles, compete for the World Cup. The

main change is to be the game's view from overhead to

Off 2 is overseeing the development, while Enigma

Steve Screech one of the original programmers of Kirk

to be heavy competition for the other releases Thirty-two ton international teams, each with their own

# Sensible World of SOCCEY Sensible Software/Renegade

Renegade and Sensible Software are looking to release The Sensible World 11of Soccer sometime in August of this year. The game promises to be different in that it will combine all aspects of a good management game, while retaining its original playability. As team manager, the player can choose from 1.500 world club sides from

any one of the world's main leagues. Try your hand at either manager, player or a combination of the two. Thus the game should appeal to both the management/strategy buffs and the arrade player



top-down adding a slight angl



Getting the Manchester United licence was obviously a good move for Krisalis

# **World Cup** Striker

Rage Software

Taking a peek into the distant future, Rage plan to release a sequel to Striker sometime near Christmas. Efforts have been made to make the game as realistic as possible, using animation from real

A lot of work has gone into the computer intelligence aspect of the game, as a common complaint about Striker was that it became too easy to beat

# Empire Soccer Empire Software

This game will involve special team powers as well as the usual moves such as Super Rarge

enabling you to knock down an opponent for up to ten seconds. Other features include a full statistical game analysis at half time and Comiral Cameo. requencer for goals, bookings and the like. The game uses 256-colour graphics and 400

frames of arrade-style play Character and the 24 antiqued terms in this year's World Con and one business have studied to match the playing style and ability of the real squad, and quide them to World Cun maren

Five skill settings will ensure that the game will appeal to all, from the povice to the eynert. Expect this one to hit our shelves around June.



# The management

If all this football areada madness is already becoming too much, there are alternatives.

Management games are becoming increasingly nopular with those who prefer a game that requires a bit of thought and strategy with their football. The Premier Manager duo and Championship Manager

are among the most nonular of this particular genre The idea helind them is to take on the role of team manager and lead your squad to success. Things such as keeping your ground squad and money under control become part of your job In short all the responsibilities of a manager become

Even a platformer has taken up the football theme in Krisalis's Socrer Kirl with a football-kirking sprite. The game was acclaimed for its brilliant graphics and unusual playability.

Alternatively, if you'd like a football game but don't want to bother with all the rules then try the sequel to Brutal Sports Football, called Brutal Sports Socrer - soon to be released.

While Brutal Sports Enothall was based on American Football, this release will centre loosely around British football, with the same idea behind it: of beating the living daylights out of your oppopent





role of manager a concerning as which new players to buy



### Sensible Soccer Renegade

This is a basic northwer from the original but the sound effects seem to have been enhanced to really create the all-important match

Playability remains as smooth and addictive as ever. The sprites do seem a little inferior to more recent games and lack the animation but when gamenlay is this good it perhaps isn't that essential and there are plenty of options to tailor the game to your needs.

### John Barnes European Football

Another basic port-over for the CD is John

Barnes Furonean Football, released on Krisalis's budget label. Buzz. It is set around the European Football Championships and contains advanced features such as intelligent defensive walls, aftertouch and action replays The game runs at arcade speed and makes use of a stereo soundtrack.

# To the future...

With all the leans in graphics and sound appearing across the gaming genres, the question on most footy fans' lips is - what's the next generation of Sensible Soccers going to look like?

The Sena Saturn, to be released at the end of this year, could give a solid hint as to the direction the genre is moving in. Saturn Soccer is from the makers of the much-touted Virtua series (racing, fighters) and from the early preview shots

Featuring multiple imaginative views of the action and full polygon graphics. this is shaping up to be quite a title on the visuals side. Whether it can match the playability of the likes of Sensible Soccer is another question altogether. Likewise, FIFA Soccer on the 3DO features panning, zooming and digitised play-

ers, producing breathtaking results, but as Steve Dunn, the programmer of Sierra Soccer, says: "The playability (of the next generation) could be fractionally better, but not desperately better."

Tim James of Krisalis is very much adamant about putting playability before graphical enhancements. He sees the next step as heading towards more individuality for the players - how well they run, kick and handle. These are techniques which they have already used in their Manchester United Premier Leanue Champions, and he hopes that bringing more managerial skills to the game will produce a more rounded and varied experience

If you shout at a player, you'll be able to see the results in the next match - he may well be better on pitch and move faster or, alternatively, sulk and not play to

the best of his abilities Virtual reality is regarded by some as being the ultimate way forward, and ven viable option for the future - could it be possible that a few years down the line

we'll be able to slip a VR head unit on and take part in the ultimate football experience as we race around Wembley stadium with the roar of fans echoing in our The one important factor that has been present in many of the classics is sheen

playability - this must be one of the most consistently addictive genres, providing the player with hours of fun and frustration

Hopefully, the introduction of CD technology, faster processors and fancy capabilities won't detract from the previous quality of gameplay which has made the genre what it is today.

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From left to right: Stuart Atkinson (graphic artist ); Gary Antcliffe (programmer and creator of SPAC mode); Gary "Jim" Mason (graphic artist and co-designer); Rolf Mohr (background artist, game designer). Not pictured: Ma (veson (music); Jeremy Heath Smith (top honcho)



ore Design are one of those companies who strive for quality and not quantity. A bad game from Core is a very rare occurrence. Over the next few months, you are going to be constantly bombarded by their products and I'm happy to report that, true to form, there isn't a bad game in their latest

batch of releases. One such game planned for a July 94 release is Universe. This graphic/text adventure has been created by the same development team who were responsible for the critically acclaimed Curse of Enchantia

It's all about a journey into a futuristic parallel universe which contains a dimension of cosmic rivalry and warring alien races. The story begins as an ordinary lad called Boris Verne is visit-

149

ing his eccentric Uncle George who is an

Boris, being the naive chap he is, sits in a strange pod machine and get transwhere the adventure begins. System

popped down to Derby to talk to Gary, Jim, Stu and Rolf, the team who developed Universe: this is what they had to say about life, the universe and the game that could become the one of best graphic adventures on the Amiga:

### O: What did you do before you started work at Core Design?

Gaz: I worked for another software company and did such games as Scooby & Scrappy Doo, Yogi Bear and numerous others [budget titles] that I can't be arsed to remember.

Jim: I spent three years in oblivion at university supposedly studying computer systems engineering. Stu: I got up in the mornings, pre-

tended to go to college but didn't, hung around outside in minus 90 degree temperatures and hung out with my girlfriend. Rolf: Before Core Design, I had done several illustrations for book covers.

worked for Games Workshop etc. all after doing an architecture degree. O: How did you come up with the

idea for Universe? Rolf: Universe was an idea that I origi-

Stu: The main character, Boris, also scales, which is pretty unusual on the Amina Roris was rotoscoped to get real istic basic moves (eight-directional wall cycles, pick up etc). Any other moves are hand-drawn and animated by us.

### O: Universe will appear on the Amiga CD32. What additional features can we expect to see?

Rolf: Due to the fact that the A500 version is already in 256 colours, them shouldn't be that much of a difference graphically. We will be using more shades though, as the A500 only has 16 shades per colour whereas the CD32 has

Jim: We're also looking into speech or the CD32 version, but we're not too sumabout that at the moment Gaz: Of course there will be the expected CD music rather than the four channel Amiga stuff.

### O: What do you think of the new C based technology?

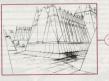
Stu: Which CD technology? The CD3 doesn't in our opinion live up to the

nally had for a film script. That never went anywhere so I decided to turn it into a game.

O: What makes Universe different from every other adventure? Are there any unique features?

Gaz: Yes there are some unique features; SPAC (Super Pre-Adjusted Colours) mode for one. SPAC mode allows the display of up to 256 colours on a normal Amiga 500.

Jim: Also, the music system is similar to LucasArts' IMuse in that it changes depending on the current mood of the game. We've never see that before on





One of the many impressive naires of artwork used in the creation of University

Jim: Yes, it's just a A1200 with a CD drive bolted on as an afterthought. Gaz: It's the only CD drive I know of which can't actually fade musici

is, alu

on the

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ech on

e the

w CD

CD32

Rolf: But it does have the Planar chin Gaz: It's just a pity it's not any use. All: Yeah... It's really great

0: Explain the processes involved in designing a game (from simple sketches to finished product):

Rolf: We'll tell you when we find out. differently

Stu: There's not really a definitive way of designing a game. Everyone does it Jim: We start by having a meeting where everyone in the team sits around, drinks coffee and talks over ideas that they'd like to see in the game. We then work out which bits of the initial design are feasible.

Gaz: And then we do the business Stu: Rolf will start by roughly sketching out the general layout of the scenes before he starts to paint them. Once they're painted, they are scanned in using a flat-bed scanner and a PC and

touched up if necessary. Rolf: We then subject the nice picture to SPAC mode which converts the original scanned image so that the Amiga can display it in 256 colours.

Jim: This usually needs considerable touching up, but it's worth it in the end Stu: We (Jim and myself) then do the background animations and sprites in the palette dictated to us by SPAC

Gaz: Generally the process is a long one which would take up far too much space here to really go into any depth.

9: Your previous adventure. Curse of Enchantia, used a icon control system. Universe will use a text system. What benefits do you get from this new system of control and how easyldifficult was it to implement?

Rolf: Conversations between characters in Universe is one benefit Jim: Yeah, it's not really possible to have a conversation using icons, is it? Gaz: Benefits? It works!

Stu: I no longer have to draw stupid things like "pay respect to the dead" in a 24 by 24 pixel icon

Q: Universe will incorporate some arcade sequences. This has been done before unsuccessfully in games like Operation Stealth and Indiana Jones. What will these sequences be like in Universe?

Jim: We are aware that previous adventures have suffered considerably due to the inclusion of arcade sequences so we've kept this in mind. Generally, adventure players don't want arcade pieces in their games so we've not dwelled upon them in Universe. Gaz: The ones that are there are short and simple and should make an inter-

esting break in the game. Rolf: You won't be spending hours trying to get past them in other words

O: Finally, in not more than 20 words, tell our readers why they should run out to their local shopping emporium to









can get a detailed run-down what objects you have







Beneath



rogress through Beneath a Steel Sky





You take on the role of Robert Foster, who as a youngster crash-landed in a desolate place known only as the Gap. With his parents dead, Robert was taken in and fostered by Tribesmen.

Treated as one of the tribe. Robert learned to survive by hunting and scavenging. As years passed he started to discover new talents such as building robots and one of them, Joey, became his constant companion.

Then one day the eldest tribesman had a premonition of the evil that was coming to the Gap. That evil was the security helicopter. After the Commander had threatened the old tribesman with death, Robert came out of hiding and was promptly abducted by brutal security forces and

brought to a place called Union City. His fate is in your hands as he talks to people and explores the area around him, in an attempt to discover why he was brought to the city.

Right at the start of the adventure you find that Foster has escaped from the wreck of the helicopter in which he was kidnapped. You must ensure that he eludes security in order to discover his past and his destiny



Joey the robot is your constant companion and in times of strife you





tee







### ADDITIONAL INFO

Dave Gibbons began his comics career in 1973. A frequent contributor to the magazine 2000AD, he illustrated such renowned strips as Harlem Heroes, Dan Dare and Roque Trooper for that publication.

Gibbons has also worked on the popular Doctor Who strip, and in 1982 he began his association with DC Comics, drawing the Green Lantern series.

His work with Alan Moore on

Writer/Artist combination award at the 1987 Jack Kirby Comics Industry Awards ceremony.

Monthly magazine, Q, said Watchmen was "The most advanced comic yet, one which elevates the medium from the mere childish diversion to the level of an anticome."



Although it doesn't happen very often there is a chence that you will kill Robert Foster and thus end your game. Clever people will, of course, have saved their game

### Jonathan Maddock grabs his trusty mouse and clicks his way into a state of adventuring bliss, courtesy of Virgin and Revolution Software

# Sky

### SOUND

There isn't a lot to shout about on the sound front and is infact quite weak. The atmospheric introduction music is adequate enough, but you've heard it several times before. Actual in againe sound effects are few and far between. This is about the only disappointing thing about Beneath a Steel Sty. A nice touch of gentle music planing throughout wouldn't have gone a miss.

I know there are people out there who don't like their adventur-

I know there are people out there who don't like their adventur ing thought-processes disturbed by meddlesome tunes, but for these kind of people there is always the volume profets.

those kind of people there is always the volume switch.
Some of the in-game sound effects are really bad, especially
the alarm at the beginning of the story which sounds like a
bad case of flatulence, and although it does cause much
hillierty it isn't really an exuse for bad sound

50%

offects

Develope: Develope: Develope: Develope: Territoria Saftwares
Detec: 25.89
Conver. America: per 1.5 Wey
Conver. America: Develope: Saftwares
Supports: Sees. Associated Recommended: 6000, 80023

What you thought was a dirty video (Pussies on Parade) actually turns out to be a rather harmless picture showing a few shots of some cats





### GRAPHICS

Visually, Beneath a Steel Sky is just about as sexy as Amiga graphics get. glues a lot of it is down to the amazing stalents of Dave Glibbons who not only is responsible for designing part of the actual game and creating the background graphics, but also kindly provided Beneath a Steel ky with a brilliant scene-setting 8-page comic book. The pame starts with a brill. But well-animated introduction

of the security helicopter crashing with the hero escaping amidst a hail of bullets, but then you are plunged straight into the actual adventure.

Revolution's adventure features some exceptional character sprites and some jawdroppingly good backgrounds and when compared to previous games of this genre it literally outshines them all.

The animation is smooth and fluid and you really get a sense that each sprite has its own character and personality. Even just small sections of Beneath a Steel Sky are worth mentioning.

For instance, if I told you there's a bit where a cat jumps off a bed, you wouldn't be that impressed, but it is so well animated that you actually feel like telling

I have tried, but failed to knock the graphics in the game simply because they are so damn perfect. I doff my cap to Dave Gibbons and the graphic artists that have obviously worked so hard on Beneath a Steel Sky.

90%







cylinder for his own personal use. I for one would not let this man operate on me!

### FLASHBACK

There are loads of previous adventures I could compare Beneath a Steel Sky to, in fact far too many to name here, but classics like The Secret of Monkey Island 2 spring to

mind.

There are certain points in Revolution's graphic adventure where humour pops up and this is very reminiscent of the witticisms found in US Gold's swash-buckling Monkey Island 2.

One of the better adventures that you could compare it to is a previous release of Revolution Software, Lure of the Temptress. Lure featured some luscious graphics, some good atmospheric

sound effects and incorporated the then revolutionary Virtual
Theatre system.

The story is all about a chap called Diermont and his mission to

free the Turnvale Village from the evil clutches of Selena, a apprentice sorceress.

At the time the game received a walloping 92% and a Gamer

Gold award. The reviewer at the time summed Lure up by saying "If you're the more patient type of gamer who wants a challenge that will give you months of enjoyment, look no further than Lure of the Temptress".



By using one of the terminals you'll be able to gain access a wealth of information about the city and its residents

### COLMICI

Beneath a Steel Sky is just about one of the best graphic adventures I have played to date on the Amiga. Everything about it just oozes quality and over the last couple of weeks it's been a real pleasure to play.

Before I praise it anymore I should point out its few unfortunate faults. Firstly, it comes on 15 (count 'emf) disks and you will ,without a shadow of a doubt, need a hard drive. The actual installation process takes well over an hour, but why it should take this long is completely beyond me.

I played Beneath a Steel Sky on the A1200 and it kept crashing about every 15 minutes. It's not just me either because another member of the AC team, who was as deeply engrossed in Virgin's adventure as me, experienced the same problems. Putting these faults, which do take the edge off the actual brilliance of the game, saide, I would heartily recommend Beneath a Steel Sky to any adventure fan. Why do I recommend it though? Well, the graphics are good enough to marry and have children with, the gameplay and actual story-

line are first-rate, it's easy to play and you just couldn't wish for a better adventure. The actual puzzles contained within the game do vary from the obvious to the baffling, but you have a lot of fun trying to work them out and when you do a sente of achievement washes over you.

Beneath a Steel Sky is not aimed at the very young market though, because it does have a small amount of swearing and innuendo contained within it. Nothing that shocking, but I'd just thought I'd let you know.

Beneath a Steel Sky was just a whisker away from getting a Platinum award, but due to the amount of bugs! suffered I'm now a little bitter and I've consequently knocked the score down. No matter what software comes out, there is little excuse for letting buss get into a dame.

bugs get mole game. Revolution Software have surpassed the amazing Lure of the Temptress with their latest adventure and I congratulate them on making such a fine adventure game. If it doesn't go to the top of the software charts then I think there is simply no justice in this world.



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### ADDITIONAL INFO

When the South began the born bardment of Fort Sumter. Charleston, in April 1861, they were taking the first armed steps in a war which was to last four years and cost the lives of 617,000 were destined to die in the charnel houses that were the hospitals of the time.

Despite the initial successes of the Confederate forces, their early military superiority, dashing tactics (particularly in the Shenandoah valley under Jackson and Longstreet). and fanatical commitment could only delay the day when northern industrial and numerical superiority ground them into the dust.

Bull Run, where Stonewall Jackson earned his nickname, was to be followed by a succession of victories and defeats until the turning point of the war at Gettysburg.

There the Confederate invasion of Pennsylvania died, along with 23,000 Union troops and 28,000 Confederates, and Robert E Lee had suffered his first defeat.

The psychological effect of the battle on both sides was immense, Rebs back until, on April 9, 1865, Lee signed the terms of his surrender to his old rival Ulysses S Grant in the courthouse of a tiny town called Appomattox.



see Ceneral Crant, and I would rather die a thousand deaths

General Robert F Lee just before his surrender to Grant

It had been the bloodiest war in US history, more costly even than World War 2 was to prove.



# 3 Lue

Stevie Kennedy dons his uniform as the war gamer's favourite slaughter subject makes an appearance on the Amiga

ana







... but the scrap is soon raging as hot as you like



### GRAPHICS

The game's graphics vary in quality and consistency depending upon which screen is being viewed, so while the static information screens and the strategic mans are quite well drawn, the representation of battles is poor and based entirely on the existing Impressions battle system which hasn't changed much for a couple of years.

To the tabletop fanatic used to pushing immaculately modelled and painted figures across intricately detailed fake countryside, the battle scenes will be a particular disappointment. Soldiers are drawn in blocky lo-res and move jerkily across the screen, and the battlefields themselves are about as basic as one can get On the other hand, information screens showing historical events from the war

itself are easy on the eye, and the man of North America is un to the task Graphics during the manoeuvre and strategic phases of the game don't impress

n an artistic sense, but they are good enough and the various control ontions are presented clearly and neatly More realistic battle scenes would have given The Blue and the Gray a much bet-

ter visual appeal, but as this is a more cerebral game than most, it is not as damaging a weakness as it might otherwise have been.





tne

Without becoming too gruesome, the game does make an attempt at battle noises, with musket volleys, neighing horses, and booming cannons at the appropriate moment, but there's a distinct lack of other touches

I would have liked a Rebel Yell when the Confederates charge (which, true to life, they often do in this game), and some sort of general battle hubbub, but overall the sound isn't too bad. Music is OK as far as it goes, which isn't far, and there are a couple of attempts at the battle hymns of

# iray

### OPINION

Sixty per cent might seem a generous score for a game which falls over in the graphics side and has a few simulation flaws, but as Impressions are aiming at the war gaming fan and as the battle system is basically sound. The Blue and the Grey unwieldy subject.

The superb manuals help a great deal, and as there are good campaign and battle tutorials the game should be approachable by non-war gamers as well as the experienced weekend general.

To aid the beginner, there's also an excellent 180-page history of the Civil War which covers the material in some depth and in a very readable style.

It takes some time and a lot of patience to get to grips with this game, particularly as the early battles are made

After a few practice battles, though (in one of which my three division Union army was routed by a single understrength Rebel infantry division) the pieces start to fall into place and the depth of the battle system starts to show Fighting out a huge affair, such as the first battle of Bull

Run, can take a very long time, because when there are 30,000 soldiers on each side you have to knock speed right down and scroll back and forward like a mad thing to keep track of what's going on.

Add the fog of war option and unit re-supply and things become even trickier and time-consuming. On the whole, though, the war gaming fan will find

enough in this game to warrant buying it, particularly as the tabletop variety takes even longer to organise and play. Other gamers will scratch their chins in a thoughtful manne and give it a wide berth, but that's only to be expected.

### SIMULATION

Split into strategic and tactical sections, the game's simulation of the Civil War is by no means perfect, but. it is good enough given the limitations of a two-disk package and a

four-year continental war Strategy is probably the weakest

section, and players are limited in what they can do to affect the outship transports properly, destroying railway lines, and judging where and when to commit reserves or raise new divisions are the only real strategic decisions

As the north's victory was so dependent upon its numerical and economic strength aided by a naval blockade, some sort of economic dimension to the game would have helped. However, as the war itself locate and destroy as many enemy troops as possible, the lack of more subtle elements is acceptable

In battle mode, poor graphics don't help much, but the battle sys-



can be grouped into large formations or used as individual units, and they can be told to form lines two deep, assume skirmishing formation, or even squares Each unit has its own firepower,

attack, and defence ratings as well which have a direct result on gameplay, and different weapons can have an effect too. Union troops, for example, have

the Sharps and Enfield carbines whereas Confederates use mostly older muskets, and cavalry can be told to use either sabres for maximum effect in charges, or carbines for more static manoeuvres. In play, moving troops around can

be a real pain, and the control system during battles is rather clunky at speed is kept down (there are ten settings), tabletop players should feel at home with most elements.

If you can see past the graphics and have the patience to play a full battle, then there is a good war gaming system trying to break free of the game design, and fans of the genre should find enough depth to keep them going.



### NTRODUCTION







Another foray into doom, gloom and the ultimate demise of the human race? As ungodly beings emanate from the void, Simon Clays casts a glance at the world of Perihelion

# erihelion



Both the introduction and in-game music have obviously been given some thought. How many times in the software world has a game had a graphical style that didn't quite match the feel of

But, not so in Perihelion. The curious graphical images complement perfectly the whistle of wind rushing through a building and the deep nasa reverb of the synthesizer.

### OPINION 60%

Perihelion is an extremely interesting departure from the normal RPG style Dungeons & Dragons title. While it's still largely a first-person 3D title, the design ers have attempted to tread a different path on many other aspects of the game. For instance, many titles of this genre have a very similar style for representing spells and spellcasting. They are either awarded on graduating your characters rank, found lying around in corners of arcane buildings, or bought from dodge

In Perihelion the designers have opted for a similar technique as Dungeon Master, with the acolyte in question having to construct the spell from runic sym-









### STORYLINE

As the name suggests, Perihelion is a solar-centric culture, leftovers from an ancient, technocratic society which all but vanished in the aftermath of a nuclear holocaust.

The principle relic, as a reminder of that era, is a ruined metropolis named MidLight. Our tale begins on this strange futuristic world of Perihelion, where the society is constructed of mutants and surgical and genetically enhanced groups of humanoids.

One such character is Finian, a Bionocron, and student of psionics. It's during his pilgrimage to the Psionic Training Institute that the plot unfolds. As part of his mental separation of mind and body, he must approach the

school through the desert. After a hazardous passage, Finian finds himself in his simple room enduring a preparatory state of meditation before he faces the time of the Mannis.

As he meditates deeper, putting aside the physical pain he has faced through the desert, Finian has a vision. He is out in the desert again, only this time he's not

asone.

Finian feels a force, an entity so powerful it totally engulfs his soul. He can only gaze in horror as this great evil moves about him, eventually yanking him high into the air.

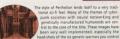
Suddenly, the entity relinquishes its grip on and he spirals towards the yellow sand below him. As the dusty void immerses him, he hears a voice, a foreboding, malevolent boom that tells him that the time has come.

The story is relayed back to the head of the institute, who having called a meeting of the Council, informs them that he senses danger, and that their leader Rex Helion must know of these events.

As a response to Finian's prophecy, Rex Helion orders that Project Awakening must be initiated, the premise of which is to safeguard against this unborn evil,

So, there they stood. Six unborn souls ready to do battle with a malignant force that has itself yet to be born. To Rex Helion, Emperor of Perihelion it counsided pure folly. but how many times have the posionics been right before?

GRAPHICS



The intro sequence too has been well handled. It blends moody futuristic city landscapes with some excellent snippets of

animation, and works to great effect.

Though play is a montage of styles, it's comprised mainly of 3D first person perspective. This again, is highly stylised, and reminded me of a

downtown Mega City 1 from Judge Dredd.

Its only let down is the repetition of locations. As you wander around the deserted ruins of cities, turning one corner or looking at a building

entrance soon leaves you feeling as though you've inherited some of the aforementioned psionic powers of precognition. Still, on the whole Perihelion looks the part. One can tell that some

trouble has gone into the design, arting and feel of every screen that the user interacts with.

the user interacts with.

To the designers credit, much of the effort and polish that have gone into this aspect rubs off on the user's enthusiasm and make it just a touch more pleasant to use.

68%





The state of the state of

### ADDITIONAL INFO

Many of the characters in the game have undergone cybernetic surgery. The term cybernetic is derived from the Greek kubernan, "to steer".

It's the science concerned with how systems organise, regulate, and reproduce themselves, and also how they evolve and learn. In the laboratory, inanimate objects are created that behave like living systems

Applications range from the creation of electronic artificial limbs to the running of a fully automated factory where decision-making machines operate up to management level. Cybernetics was founded and named in 1947 by US mathematician Norbert Wiener,

originally the study of control systems using feedback to produce automatic processes. The idea of cybernetics became that popular that TV series were spawned, the most popular being that irrepressible man in the red tracksuit Stewe Austin, none

other than the Six Million Dollar Man. Through the eighties ideas were expanded, and with special effects technology vastly improved, films like James Cameron's Terminator were born.



e die rame symbols to e corre par que

bols. The computer network that your mutated characters can log on to and access is also a nice extension of concurrent themes.

Not only does it feel right that your characters should have the technological insight to be able to perform such a task, but its also relevant to the completion of the story.

The only aspect of Perihelion that let it down slightly was the combat. It's a completely understandable notion to take the user to a separate screen to an mence battle; it grants the opportunity to make tackical decisions, and and effect repairs. But it's where, if a computer game can ever manage it, the fantasy of behind real is for.

However, while it's a little samey in places, Perihelion is a very competent adventure, and I look forward to the next offering from this development team.





INTRODUCTION



Jamps give Darkmere an atmospheric edge During play, Darkmere concentrates its efforts on effects, and

uses mood music during loading sequences. The sounds effects within each level are crisp and amplify the mood of the play to great effect.

Whether it be the grunt of an angry orc, or the howl of wind through the trees in the forest, they're all extremely well executed.



FLASHBACK

signposts and flickering





Even a hardy advers







GRAPHICS 79%

Consisting of three different levels, Darkmere uses a richly stylised technique. Each is brimming with detail. For example, as you approach the tavern the signpost above door is swinging in the wind and the lights that illuminate the paths flicker in the light as a breeze passes.

The landscape is also extremely detailed with masses of graphical objects to examine, search and interact with The animation of your muscle-bound Ebryn, and indeed all of the characters within Darkmere, is extremely well executed. The character sprites are fairly large and move and fight extremely

smoothly. As you journey around the many varied locations you'll encounter many little extra animations that, although unrelated to the plot, add

that extra dimension of realism. For instance, as you make your way around the town you'll encounter rats, and during a forage

through the forest, rabbits hop by. Darkmere is probably the most detailed, isometric title ever to emerge for this genre. The graphics are extremely well suited and are cleverly crafted to give a very atmospheric

really show off the graphical prowess



### STORYLINE

Set in times of olde, Darkmere is a sad tale of unrequited Ebryn. As a young man, Gildorn killed an evil dragon, but was ousted from his homeland for interfering in human destina

Back in his own land, Gildorn was proclaimed King and a time of great prosperity and order began. Sometime later a young female elf was found wandering the outskirts of the surrounding forest

Remembering nothing but her name, Berengaria was given shelter by the King. Over the following months. King Gildorn grew closer to Berengaria, eventually falling in love

with her The romance blossomed and a wedding soon followed. Glad tidings continued with the news that Berengaria was pregnant, and following tradition, Berengaria disappeared

into the forest to give birth. Time passed, and when the queen did not reappear, Gildorn became anxious and decided to go searching for her. Fit to die for a cause? Ready to take on

an army of darkness? Sharpen your blade and enter the domain of the Darkmere

For days he rode, then in despair he came across a leafy glade and found a new born child, his son.

Years passed and the son grew stronger, but the queen never returned. The King grew more and more melancholy as still she didn't return. Instead he took to gazing into his crystal, staring for hours and hours upon time in a vain search for his beloved Berengaria.

The more he gazed, the more the land became a magnet for evil. The orcs returned, thieves and cut-throats every one of them. They ravaged the land and went undetected by the King as he withdrew further into the crystal

Greater evils were rumoured to be spreading around the surrounding lands and forest. Eventually Ebryn approached his distressed father and told him he was going to restore the kingdom to its former glory.

Agreeing that his sorrow has caused neglect. Gildorn tells Ebryn to find his old friend, Malthar the Mage. To aid Ebryn, Gildorn gives him his Elven Blade that is bestowed with Elven power, and a crystal that will allow Ebryn to call for help

With that Ebryn leaves the castle and sets off to uncover the malodorous evil that curses the land.

AWARD

### ADDITIONAL INFO



Questing for good has been a talent the Anglo Saxons have relished in for many centuries. Perhaps our most famous religious liberator is Richard I (the Lion-heart). King of England from 1189, he spent all but six months of his reign abroad fighting for Christianity in the Middle East.

Richard and his knights believed that Saladin and his Muslim followers were in dire need of religious instruction through force. This is regardless of the fact that the Muslims tolerated gentiles, and lived side by side until the Christian invasion.

In the third crusade of 1191-92. Richard won victories at Cyprus, Acre, and Arsuf, but failed to recover Jerusalem from Saladin

Saladin was sultan of Egypt, and born of Kurdish blood. He was renown for his knightly courtesy, and made peace with Richard in 1192. Following this, Richard returned home to claim his throne from his

brother John. Unhappy with peace, Richard looked closer to home and duly went to war with the French. In 1199 he died fighting in France.







the next level takes you into the forest





### **OPINION**

This must surely rate as one of the best 3D isometric adventures ever to appear on the Amiga. It possesses a haunting style that is completely unique, and seldom achieved in many computer titles. Character interaction is extremely simple to grasp,

and the menu system which helps you negotiate your character through a seemingly endless environment is the essence of simplicity to use. However, by far the most impressive facet of

Darkmere is the graphics. They pay such attention to detail and create such a mood that it gives the adventure an immediate head-start over everything

else it competes against. If I had a criticism - and it's only a minor one - it's that the majority of battles that you engage in are exactly the same and don't require any particular skill to win. For example, whenever you fight against one

of the abundant supply of orcs, you just hold your Fire button down, point the joystick into one of the attack positions, and the stupid ore just keeps walking into you until it spontaneously Nevertheless, Darkmere is a pretty classy title. It's

contained in a huge playing area (be prepared to map), has interesting and very moody graphics, and contains objectives and puzzles that will hold your attention for a good while.

INTRODUCTION

First came Robotron, then Smash TV, its violent sequel. Now, from Ice, comes a game with blood and bikinis - Total Carnage, a conversion of the Williams coin-on. Adam Phillips reviews

OTO

### STORYLINI

Out of nowhere came the power-mad General Akhboob who is as mentally balanced as Jack Nicholson in The Shining. While the latter was restricted to a single hotel and a fire axe, unfortunately the former has access to an arsenal of missiles and the entire

He has managed to create an army of mutants from radioactive waste produced at his nuclear generator. With his endless supply of disposable creatures and hostages,

the General is ready to take on the globe and claim it as his own. Only two men are brave, strong and simple-minded enough to even consider taking on the General at his own game - Captain Carnage and Major Mayhem, the

Doomsday Squad. The simple directive is to enter the complex, rescue hostages, disable Akhboob's forces, get inside his stronghold and go after the big man himself.

### ADDITIONAL INFO

Violence has always sold games. From the early days of IK+, Barbarian and Moonstone, to the recent Mortal Kombat featuring spinal columns being ripped out of opponents, it's clear that blood-letting is a money spinner.

Total Carnage comes from the makers of Smash TV, a game which included multiple bloody deaths in a glamorised scenario. While the argument rages between software companies and parental/teaching groups to find out what kind of effect this all has on the younger generation, plans have already been mobilised by ELSPA (European Leisure Software Publishers' Association) to introduce a voluntary ratings system to guide the parent on the most suitable purchase for their youngster.

Total Carnage is not a title to be that concerned about - while the enemy may explode in a shower of blood, there are no screams of pain or burning corpses as found in such titles as Syndicate or Mortal Kombat and the gore is very much in the comical sense, especially with the cartoonised and roughlooking graphics.



Gun turrets cause short-lived problems... find the best vantage point and blow them away



If you're a shoot-'em-up fan games that pump the adrenaline and pack a challenge, then side-step Total Carnage and go for Chaos Engine, Alien Breed 2 or Uamatron, a PD title by Jeff Minter The latter features excellent sampled sound. crude early 80s style graphics. but superior gameplay and with power-ups and heart pumping addictiveness, it's one of the best, cheapest and most absorbing overhead blast fests available for your

### GRAPHICS

The overhead viewing angle is, in most cases, an effective one and Total Carnage is no different. The largest problem with the presentation is that the graphics of the sprites and the backdrops simply look worn and crude compared to the likes of Chaos Engine and Alien Breed 2 which were released a few months ago.

The characters' legs have a remarkable perspective where it seems they shrink from the pelvis down into feet that take size 0 shoes. While it is appreciated that the graphic artist was simply trying to achieve a realistic look for the overhead angle, it simply doesn't work.

The animation is fair on the whole with the relatively bloody deaths of mutant soldiers as they explode on meeting a bullet. The scrolling is slow and fixed — when the game wants you to move, you move and if it doesn't, you stay where you are or risk walking face first into a homicoidal axe-wielding manial.

Another regular difficulty is moving your way to the top of the screen and having to wait for the slow scrolling to catch up. And like much enhanced software, it's hard to see why this is specifically an A 1200 version.

47%

inns. a Fries 200 80 Earl dist listili. The Saparts. Al280 Recommender, 50020 will will

# Carnage





### PHIN

With this kind of licence, the sound is usually a clash of music, screams and other high pitched, audience-grabbing aural effects.

Surprisingly, Total Carnage is a little restrained in this department - there is no music over the intro and option screens and during the game itself, gunfire and the impact of bullets make up the main bulk of the sound. These admittedly are solid effers and add impact to the gameplay.

effects and add impact to the gameplay. Speech is also a welcome inclusion with a voice crying out "total carnage" as a wealth of mutants waddle on to the screen towards you. Other samples include the hostages who cry for your help, and when retrieved thank you for your time and

Sadly enough, the only women to appear in the game are wearing bikinis with a ball and chain who flatter your ego every time you rescue one of them by proclaiming that you are a hero in a bimbo voice. Equal rights have yet to enter the gaming arena...

60%



The flame thrower is a formidable weapon wiping out mutants with a single, flickering touch





One of the game's most frustrating and annoying moments is on Level Three when a gang of axe-wielding maniacs come at you from all directions... expect to lose plenty of lives here

effort



All male hostages are fully dressed - all female hostages are in skimpy bikinis... why?

### OPINION

### **50**%

Shoot-'em-ups have become some of the most tired releases in software. With the steady increase of technology and companies opting out of fresh, original and playable ideas to stick firmly with the easy road of licences, customer's wallets are beginning to suffer more and more.

Total Carnage is a typical example of a reasonable conversion of an average coin-op that will sell simply

because of the name and hype attached to it. If you enjoyed the original then you'll glean a certain amount of satisfaction from this. Indeed, the proceedings can be relatively involv-

Indeed, the proceedings can be relatively involving, especially in two-player mode, and with 20 battle zones to wage war through, there is certainly a hefty challenge to be met.

The numerous power-ups for weaponry and air strikes also add incentive to see how much damage you can cause in the shortest amount of time. At the end of a wage-earning day, though, and after reaching into your pocket and fishing out £30, Total Carnage is not really worth the money.

The action, while constant, is never really adrenalin pumping and has more in common with a hard slog with the Fire button than exciting and

The graphics also detract appeal from the overall package, leaving Total Carnage with averageness as its main quality, and consumers with a dry and tepid emotiness in their wallets.

INTRODUCTION

Tina Hackett dodges the napalm as she reports from Virgin's latest war zone, Apocalypse





### Mankind must out an end to war or war will out an end to mankind

John F Kennedy to United Nations General Assembly. September 25, 1961

# pocal

X

### SOUND

A great deal of the atmosphere has been conjured through the excellent sonics resulting in an almost chilling realism. From small details like the background jungle effects to the many different weapon noises, they all combine to portray an authentic war zone atmosphere. A vital factor in a successful shoot-'em-up is how accurate the weaponry sounds. Apocalypse creates this well.



such as this howitres

need the help of



STORYLINE

Mission Apocalypse. Rebel forces have invaded the insignificant island of Majipoor taking hundreds of prisoners. Chosen from one of the Elite, it is your mission to destroy the enemy forces and rescue as many prisoners of war as possible. Find the five key enemy bases situated in the dense jungle, attempt to blow up the

battleship docked somewhere on the island and rescue your best buddy being held in a ruined temple in the heart of the jungle.

Above all, rescue captured scientists and military experts. A medical team is at your disposal. Use your piloting skills and the multitude of weapons available to you to get through this arduous task.





ADDITIONAL INFO

However intentional it was, the game can be closely related to the Vietnam war and so a title of this nature will inevitably raise questions on moral implications As the conflict was so controversial in the first place and com-

paratively recent, the game could cause offence. More so perhans across the Atlantic than here, but even so it is perhaps worth considering the inspiration behind the game. The routes of the conflict can be traced back to 1954, to the

Geneva Convention when Vietnam was split into the Communist North and the Pro-Western South, right up until 1975. It was later known as "America's longest and most unpopular war". For the first time the full horrors of war came under the

scrutiny of the general public via the new medium of television. Anti-war protests broke out, some resulting in outbreaks of vio-

One such protest took place on October 15, 1969. This was the Vietnam Moratorium, and was the biggest anti-war demonstration ever organised in America

The war resulted in the loss of 200,000 South Vietnamese soldiers, one million North Vietnamese soldiers and 500,000 civilians. Losses were also high on the American side with 56,555 US soldiers killed between 1961-75, a fifth by their own men

For instance, in August 1966 20 US soldiers died when US planes accidentally napalmed their own troops. Neutral Cambodia also suffered, estimating one million killed or wounded by US bombinas.

# ypse



AMIGA

BRONZE

AWARD

OPINION

ruthless but homins missiles can lock or

### GRAPHICS

Apocalypse is a multi-directional parallax scroller which makes for a technically stunning game. The backgrounds update at the same rate as the helicopter flies giving a con-

astoundingly authentic.

vincing feeling of flying over the terrai Jungle settings have been cleverly used to recreate the terrain almost to the extent of looking like a scene from the aforementioned Apocalypse Now. The immense amount of foreground and background detail make Apocalypse

However, the multi-layered backdrops and different levels of platforms used causes problems, especially when gameplay becomes hectic. One moment's lack in concentration and you

find yourself exploding into the ground as it is sometimes difficult to make out which is merely foreground detail and which is a landing plat-

form Sprites are well-animated and despite their size show a great amount of detail, displaying all the

gory effects of explosions.



with rocket launchers, other times with high velocity machine guns



longevity, the game becomes exceedingly More depth in the gameplay, rather than just an advanced shoot-'em-up, would have benefited the It is also let down by the fiddly control system, and game, and a save game option would have removed

> However it is graphically brilliant and the realistic, sampled sound effects make the game stand out above others in this genre.

As far as being a highly realistic war game goes,

although the helicopter is easy to fly, the Fire button changing direction resulting in firing accidentally sometimes at your own men

Apocalypse looks and sounds the business, evoking a powerful image of war. But it does verge on the excessively difficult side, and although this provides



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Ik outside and collect the beer. Go to the

centre of the forest. Wear the beard to go

into the dwarf mine. You will find a dwarf

with a spear; offer him a bribe or simply give him the

Walk back up the stairs, go past the dwarf at the

table and enter the mine. Go to the door and you will

see a hook which you should pick up. Try the door and

talk to the dwarves. Leave the mine and remove your

should take the top left path. You will come to the

stone table. Now walk right back to the four paths. Go

left and left again; you will find a wise owl. On talking

three paths again. Take the middle path to the right

Continue over the bridge and you will meet an Oaf.

Talk to him and ask him about beans. Simon will walk

away after watering the beans. Go back and look at

Go to the centre of the forest. Put on the beard and

go into the Dwarf mine. Go down to the drunken

dwarves and use the feather on the fat dwarf lying on

Go to the troll bridge. Going right you will see the

to him, he will lose a feather which you can take.

Keep walking left to the four paths. There you

beard.

his back. Get the key and head upstairs. Enter the mine. Use the key on the door, go in and say to the Dwarf: "I've come to make you an offer" (and it's in the inventory). Give the Dwarf the beer voucher, saying "pah, think nothing of it". He should reward

SNIPPET Bab's Rad Nau There are a multitude of codes available for this unusual puzzler. Here are just a few to

start with. More next

Level 15= WDPDEWOF

Level 20s VDPEFWNG

Level 30= SEAGGVPH

Go to the village and through the archway to Dodgy Geezer. Give him the gem, making sure he doesn't rip you off. Now go to Calypso's cottage and use the beans

in the compost. Pick up the watermelon. Go to the front of the cottage, go right and then straight up behind Blacksmith's cottage. Go left and open the box. Look at the empty boxes. Pick and look at the spell book

Take the rat bone, use the paper on the door and the rat bone in lock, pick up the paper and use the key in lock. Walk out, take the bucket and go down stairs. Take the mints, pick up the Flaming Brand and open

the Iron Maiden, talk to the Druid, remove ring, and talk again. Use the bucket and Flaming Brand on the Druid. Quickly get into the Iron Maiden. Open Iron Maiden, go to the frog and get the hacksaw which you should use on the bars. Go back to the village and to the shop and pick up the hammer. Going out of the

shop, walk left, right, taking the middle path. Walk right and go first right. Use the watermelon on the sousaphone. Go to the centre of the forest and up the steps to the right. Walk into the cave entrance

Go right, into the house. Walk to the ladder, use hammer on the plank. Go to Scull Island and take the Frogsbane, Walk back to the ladder. Continue right and use the sousaphone. Enter cave, remembering to read the sign. In the cave, give the cold remedy to the Dragon. Go back inside and pick up the fire

extinguisher. Go outside and look at the boulder, using the hook with the boulder (by clicking on boulder). Simon will climb up. Walk to the hole. By using the rope with the magnet and then using them with the hole you can collect gold pieces - you'll need 48. Walk behind cave and take and look at the rock. Go to the village and walk through the middle archway. Use the rock on the anvil



Go into the shop and pick up the white spirit. Leaving the shop, walk back through the archway and into the house. Give the Frogsbane to the frog and leave to on back through the archway to the hole.

Talk to the hole and give the fossil to the hole Enter the cave and go right until you see the hole Look at the dirt and take the Milrith Ore which you can use with the anvil on going back to the village. Going back to the centre of the forest, talk to the woodcutter. Enter his house and take the climbing pin

Use the fire extinguisher with the fireplace. Move the hook and pick up the mahogany. Walk back to the fireplace to leave, to find the tree stump. Talk to the stump and go to the crossroads. Take the bottom right path and use the hair. Look

at the floorboards and use the woodworm with them Use the ladder with the hole. Open the tomb and on inside. Open the tomb again, pick up the loose ban



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the beans, and pick them up.



h Walls sage and the staff. Go to the pub, into the back room. give the wizards the staff, and nay them Now go to the Dragon's cave. Behind it you will find

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cy ledges below the climbing pins. Go onto them, conlinue right and talk to the tree. Use white spirit on the aink splodge and talk to the tree again. Go to the Witch's cottage, Inside you'll find the Witch: challenge her to a fight

Keep trying the magic words on her until you defeat her. She'll turn into a Dragon, on which you can say "abracadabra", turning her into a mouse. Click on the mouse hole and escape.

Go to the Dragon's cave, walk behind it and use the climbing pin in the hole. Walk right and talk to the snowman. Consume the mints and walk up the steps.

Now go to the Tower of Doom and walk to the door Use the broom and consume the potion. Pick up the leaf, look at the bucket and pick up the stone. Go left

and use the hair with the tap. Pick up the lily leaf and

use the match stick with it Sail to the seeds and take them. Use the stone with

the seeds. Use the oil on the tap, move the hair and sail to the puddle centre. Talk to the frog and walk to him. Look at the edge of the water and pick up the Tadpole. Talk to the frog. Consume the mushroom. Open the door and go inside. Pick up the branch, and go back and use it on the chest. Pick up the shield and the

Go down the spiral staircase. Move the lever. Pick up the chest and use it on the block. Move lever again and take candles. Use the spear on the skull and pick the skull up. Go upstairs to the bedroom. Take the magic wand and talk to the mirror. Look at the book Take the pouch and use the sock in it. Use the pouch with the hole.

Go upstairs, and look at and take the book and the

chemicals. The chemicals can be used on the shield and the shield used on the hook. Talk to the Demons, and talk again telling them you can send them back to Hell. Ask for their names and draw a square on the floor. Go down and talk to the mirror asking to see the Lah

Go back to the Demons, talk and send them back to Hell. Go into the Teleporter and go to Rondor. Talk to the attendant; look at the brochures. Use the Elastic band with the sapling. Pick up the pebble. Use the catapult with the bell, walk to the pits and

across the bridge. Pick up the floor wax. Use the wand on Sordid. Go back to the counter. Take the matches (found on the right). Go back to Sordid and use the matches on the pits. Use the wand in Lava. Now go back to Sordid and use floor wax with Sordid.

Congratulations, you've now finished the game!

fassil to the hole

# Simon



### orcerer

Jurassic Park Here are some level codes to help you with the popular Ocean

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Although fairly old, Alien Breed is still an excellent arcade blast-'em-up and an undoubted classic. Compared to its sequel it perhaps isn't as sophisticated but despite this it doesn't appear as dated as you might think.

Viewed from a top down perspective, you take on an alien army who have infested a Federation research station. Based in the future, you are positioned in a galaxy on the brink of war, and with the aid of various weapons it becomes your role to blast the aliens and complete the missions.

Alien Breed is a highly atmospheric game and the tension created works well as the action becomes more and more frantic, with aliens appearing out of nowhere which you need to destroy Good graphics contribute to the atmosphere considerably, with settings such as

dingy corridors and space terminals. The added small details make highly realistic backgrounds and create a futuristic feeling.

The eerie music also conjures up a great deal of the atmosphere. Other sound effects, such as gunshots and aliens yelping when hit, work well, and sampled speech has been used to generate realism.

Extra features have been added to this new edition, such as new missions and bigger levels, so newcomers to the game and Alien Breed veterans alike will find the game a challenge. The two-player mode also adds an extra dimension to the

This is blasting mayhem at its best, and it's well worth a look if you didn't catch this excellent title first time round.

Classic arcade platform action completes this double act in the form of Owak, a

### Brutal Sports Football

Appearing across many formats, Brutal Sports has proved highly popular, and

behind it is based loosely around American Football. The main variation is that this version is based in the future, has no rules

and the primary object, other than scoring goals, is to beat the pulp out of your opponents!

This is all depicted through gory graphics of decapitations. kniffings and all other forms of physical violence imaginable. All this could encourage a high moral tone, but in this case it is more than necessary and what's more, it's fun!

As a mixture between a beat-'em-up and a futuristic sports sim, you get to guide a team of mutated creatures to League success. Winning is achieved by opposition.

Pick-ups are also a major factor in deciding your victory or failure. These take several forms and can be found scattered around the pitch. Rabbits speed

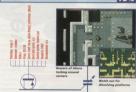
up your players whereas tortoises do the opposite. Devices such as lightning or ice-cubes strike down your unfortunate oppo-

nents, but of course they can make use of these pick-ups too All this makes for a hunely enjoyable mixture of frantic American Football and hilarious beat-'em-up action. The two-player mode provides an opportu-

nity for competing against a friend, and even more excitement. Extra additions to this CD version include graphical details sh of aliens, enhanced sound effects and a rock sound track.

comes highly recommended.

72%



### Alien Breed Special Edition & Owal

highly playable title whose sprite is a duck. The game could be accused of being a Bubble Bobble clone but this does not detract in any way from its quality. And although platformers these days hardly have a reputation for originality.

The aim is relatively simple. Clear the screen of baddies, collect bonuses and grab the keys to open the doors to the next level.

Life is made more difficult with the inclusion of dissolving platforms, time limits and all manner of strange enemies to hinder you. Firing eggs at the enemies will eliminate them; points are awarded for success-

fully doing so, and after each of the eight worlds you'll face one of the tough end-

The game contains a two-player feature which works well in providing variety, and the puzzle angle also adds another element guaranteeing longevity.

Graphics are colourful and complement the overall fun feeling of the game This is also picked up in the accompanying tune which is in keeping with the lively gameplay. The controls are well designed and make the game instantly playable. Qwak, although not exactly intellectually demanding, will provide hours of fun gameplay and a good laugh along the way as well.

Alien Breed 66% Owak 60%



you will face in DID's spectacular space game



ship and repares to take on the might of an alien race

system o



that's going to be on everyone's lips in 1994.

Jonathan Maddock checks out their for incoming release, billed as the ultimate space game

ollowing hot on the heels of TFX (previewed in last month's System) is Digital Image Design's Inferno, which is currently being tipped by those in the know as the ultimate space game. Inferno utilises the same 3D graphics engine that DID used for TFX, but they have updated and included

some improvements into the graphics system.

Way back in September 1992, Ocean released a DID

space adventure to rival the classic Elite, but dogged by the time scale they were working to, DID found that the product had speed problems and was plagued by bugs.

Inferno is the sequel to Epic, but Amiga technology be consequed in leans and

game software entitled Epic. This was going to be the

Epic, but Amiga technology has progressed in leaps and bounds in the 19 or so months since Epic was released. DID's sequel will have far superior graphics and sound, plus it will contain a world several times larger than the one seen in its predecessor.

It has been in development for well over a year now which translates into ten man years of hard work. Inferno is set 90 years after Epic left off. You are invited

to do battle anywhere through an entire solar system consisting of seven planets, three moons, allien and human installations and interplanetary space zones.

It's basically a typical story about humans vs aliens fighting a space war. You are taken on an impressive 3D graphic journey around beautifully scrolling landkapes.

In between the intense action of space combat you can sit back and watch the Inferno story unfold with incredible animations and characters that can actually talk. Now that CD technology has been introduced via

### Infe

Commodore's CD32, there are limitless options available to a software house when the time comes to do the music and sound.

Although it does cost a lot more money, professional musicians can be drafted in to produce some startling and exciting pieces of music for today's games. The Manchester-based company initially pursued big-name artists such as the KLF or The Orb to provide the musical such as the CLF or The Orb to provide the musical such as the CLF or The Orb to provide the musical such as the CLF or The Orb to provide the musical such as the CLF or The Orb to provide the musical such as the CLF or The Orb to provide the CLF or The Orb to provide the musical such as the CLF or The Orb to provide the CLF or The Orb to the CLF or The

Manchester-based company initially pursued big-name artists such as the KLF or The Orb to provide the musical compositions.

After much thought, Ocean appointed Nick and Min Fiend from the band Allen Sex Fiend to write the music that would hopefully bring that important bit of atmo-

sphere into Inferno.

Alien Sex Fiend might seem a unusual choice to do
the sounds for a computer game. They can be best



n example of Sean Phillip's scene-setting artwo



The hero flies his craft over a bustling city

An in-game shot from Inferno

### The third dimension

DID have one of the best 3D engines around and it's been modified and developed over the last five years. Five or six graphic artists have been handling the 3D work for Inferno for well over eight months

Sean Hollywood, art and design director at DID, is the man most responsible for the superb visuals found in the

"In terms of Inferno, development was first started to see if we could logistically do what we wanted to. We thought of some new design and graphical techniques that we would all

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like to incorporate into the whole package as well as 3D techniques for the in-

game stuff. "We develop on a number of multiple fronts. The design will go on in tan-

artwork \* Inferno features a comic which introduces the player to the characters within the game. The man responsible for the art found inside it is Sean Phillips, renowned 2000AD artist famous for, among other projects, his superb sketches of Judge Dredd and Devlin Waugh. "The comic is part of



an Hollywood, DID's art and design director, is the man responsible for Informo's amaring visuals

the instruction manual - a kind of introduction to the characters and the world they inhabit. We sat down and decided that we wanted to concentrate on the interaction between the humans and aliens which isn't part of the game, but is something we were able to do extremely well in the comic."

Sean continues. "The characters are science-fiction clichés. You've got a human, blonde-haired hero and you've got your ugly, evil aliens. The characters can't die at the end. We've got to make sure they finish in the comic as they start in the game."

Sean Phillips, the renowned 2000AD artist ng talents have gone int creating the Inferno instruction manual

described as a Goth band and are heavily guitar-based, but they're also highly talented and can be incredibly diverse. They have over the last decade released 11 albums and gradually built up a large and faithful following. Once Alien Sex Fiend had discussed exactly what Ocean wanted from them they set about writing the soundtrack, along with a guy called Barry Leitch. Barry is one of Ocean's top in-house musician who has been responsible for the music found in over 80 games including the

Nick Fiend found it a considerable change writing the music for Inferno. He compares the process with that of creating an album:

"You get the same result - five weeks of differing moods. Although I'm not that musical I do know what I like, so it's relatively the same process except I haven't been able to mix it or put a guitar on it. All I could really do was direct which is very frustrating.

The music has a very ambient feel to it. It's highly atmospheric and changes in conjunction with what's happening in the game. Alien Sex Fiend are hoping to give the soundtrack a more techno feel to it and then release it as a record independent from the game.

CD32 owners have been going through what I can only call a soft-

ware rough patch. Microcosm raised a few eyebrows but ugh it had some pretty amazing graphics it was

desperately lacking on the playability Inferno has superb graphics and sound, but more importantly DID have spent a lot of time developing the gameplay, so CD32

owners start saving your money Inferno

cult band Alien Sex Fiend who along with Ocean's



in this preview, Inferno looks absolutely amazing. Just wait until you see these graphics

will become the game to buy for your machine.

I personally think that DID's space game will become one of those titles that will delight

every single gamesplayer. TFX and Inferno are groundbreaking as far as technological

and herald a new era in computer gaming. From going to get better... and



to Inferno will amaze you. and by the time you've layed the game you'll

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ome people love to use BBSs. and spend all their time (and of course money) playing with conferencing systems, sending huge wads of cash every month to a big building in Cleveland, Ohio.

to drive expensive cars is fun for a while, it soon nalls and you realise that what you want most is to start your own system, and so not have to worry about paying for your

Once you get past that initial leap, you because while setting up a BBS is physically quite easy, technically it is fraught with difficulties the larger your system gets. The trick is to start with a plan, and being the kind soul I am. I thought now would be a

good time to tell you how it's all done The Three Point Plan goes like this: there is a simple method, a medium method and really devilishly complex method. You can start at one end and work you way up to

thé most complex configuration, or jump right in at medium or complex, it's up to

But I would advise that you hone your syson skills on a smaller system before you start laving our dosh hand over fist for a fullsize ten line BBS and conferencing system

It's one thing to make an error on a small system where you only have yourself to blame, but try cocking up when you have 100 angry subscribers out for your blood, and you'll wish you'd listened to my advice.

### SIMPLEST

The simplest sort of BBS can be set up in an afternoon, as you already have most of what you need in your machine, if you're into comms in any way that is. All you need is a computer (One Amiga: checkl) a modem, and a bit of host software.

There is a patty little one which comes with NComm which will do the job. All you have to do is set your modern to answer, set up the software and wait for people to call.

### Serving t

neonle you have set up a BBS or nobody will call you

You don't need to have another phoneline dedicated to the BBS, as you just have to limit the amount of hours the BBS is active, say between 9pm in the evening and 8am the next morning, or even just evenings at weekends, and such. Most BBS freaks will stay up late to catch a BBS.

Amiga needs to have a hard disk to store the BRS software and make the system run reasonably fast. The modern should really handle speeds up to 14,400 baud, although 9.600 will suffice. The comms software you use will generally be free or shareware. although if you really must spend the dosh there are some very good programs commercially available too.

The following hints really go for all types of BBS. Before you can run a BBS, your modern needs to be able to automatically pick up the phone and connect the user

who's dialling you up to your computer. To set a modern to answer the phone you have to type ATS0=4, which is the Hayes code for auto-answer, the 4 in this case means that the phone will ring four times before being answered.

To set the modern back to non-answer mode, simply set ATSO+0. Sometimes the software will handle this automatically, but check this out before you go typing in INIT

Secondly you have to set up the software. This can be easy or hard depending on the software, and usually just involves writing all the text for the menus and messages which

The Elite BBS v.31 Copyright 1991 by Min Flita RRS Utilities Manu

Can have the following aptions: Parameters change Create Elite files Create Elite files
Edit users accounts
Make transfer listing
Search for a file in transfer sect
Expand the Mail.Reys and Mail.Dat
Expand the Board.Keys and Board.D

the user will see on the system. This obviously involves a little bit of planning, so design what you'd like the system to

Finally you have to advertise that your is they can expect if they call it. Is it a machine specific board, full of Amiga files? Is it about gardening or conjuring? Is it a full-colour, all-singing, all-dancing board

Forward planning is everything in this world, and if you want a system that people will come back to, it has to be clearly laid out and easy to use

The drawbacks of this simple system are that only one person can access your BBS at



ion and installation are two very important aspects for any new Sysop

o| Config Operation Replies **Brchivers** 6 o | Select Packet Registered To: \*\* INREGISTERED EVALUATION COPY \*\* Open Parket ... Config AniGAK... Bhout BeiQMK. Rename Packet. HELPIII ... Delete Packet.. Quit and Exit

### the system



down norba but Elite BBS is not a had

a time, and you'll only have limited room on your hard disk for files, and limited amounts of files to download. You could expand this a lot if you have a

CD.ROM with the Fred Fish or Aminet software on it, but by and large you'll be limited to whatever software you already

### CATCHY TITLE

I a

A few points: Think of a catchy title Calling yourself the Greasy Sausage BBS is unlikely to win you many fans, except perhaps among greasy sausage eaters.

Wizard's Demesne, or Warrior's Tomb. The ritle of your BBS should reflect the kind of

BBS it is, so slipping the word Amiga in there might help. If it features a lot of file and chat areas then the word Exchange is popular. Organise the menus is a logical way, and

minimise the amount of input you demand from the punter. Oh ves, and if your BBS software

permits, why not use ANSI colour graphics? These enhance the look of your board and make it look professional - unless you're not so clever with ANSI graphics of course. in which case it looks like disorganised

your own RRS on a single line, and you've built up a user base of enthusiastic come to expand to the next level of being a syson - the dedicated line.

This involves getting a new BT line running into your home so the BBS can run 24 hours a day. OK, so people can only access the system one at a time, but at least they have a wider choices of times of day to call, especially with the new cheap daytime phone rates.

If you are running a 24-hour BBS, then the trick is to expand your hard disk, get better software which handles more features, and thereby increase the

As you are starting to lay out money for your system, it may be as well have a subscription too, meaning that sooner or later you can make your money back on the stuff that you've paid out for. Subscriptions are best paid by cheque, and when the cheque has been validated, you can upgrade the user to a higher access level. This could mean they have access to areas closed to the general nonpaying public, or they could have unlimited time, as opposed to a non-paying quest. limit of 30 minutes or so.

To boost the amount of uploads you get. you can also get the software to specify upload/download ratios of 2:1, so to download one file the user has to upload two, or something like that, or perhaps if you think that's a bit barsh, how about 1:5 every five they download. Now you're really cooking, and the system is starting to look and feel like a real system. After that the sky's the limit. If you BBS is

commercial enough to pull in the users, you can add all sorts of stuff with the money you'll make: Internet and Fidonet feeds. Usenet news, on-line games, and most important of all multiple lines.

### MULTIPLEX

And in this day and age an ISDN line wouldn't go amiss. ISDN is a really fast 64,000 bits per second but also two lines simultaneously.

So you can transfer files and talk to your bookie at the same time! It only cost the same as two lines too, so if you are. thinking of this it might be a good idea to

Multiple lines in the conventional sense means one line for every serial port and you either have to get a lot of machines all running the same software (not a good ideal or you have to get a multiple serial port card for your Amiga.

The ones which spring to mind for this purpose are the GVP IO Extender board 15 1991, the Dual Serial Roard from ASDG (\$299), and the Comports 8 (\$479) and Amiga PCMCIA Serial Comms Adaptor Computers in the USA. The latter unit A600 or A1200 via the PCMCIA slott If you earn a lot of money out of your

at the trials and tribulations of setting up your nun hulletin hoard system, and rauprs samp of the nitfalls and technical problems you might encounter

Phil South looks



BBS you can even quit your job and become a full time sysop, which has happened in a wide variety of cases. It is a big job, and you'll soon have to hire some help if your system gets really big You will also guite early on have to declare your earnings from the system for tax purposes. This is simple, as all you have to do is hire an accountant ifree until they do your accounts) and they will sort out all this nasty paperwork for you All you have to do is keep a record of how much you earn and how much you spend on the system, and you'll be laughing. Not only that, you'll never have to talk to the tax man or answer any





Graphically uninspiring, but trinity is still one of the best



### Jargon buster

AMSI: Stands for American National Standards Institute. Generally refers to the AMSI Character set, the standard character set for computers, which although has certain inconsistencies between platforms like Amiga and PC. is the set used by BBS software. It also refers to the coloured graphics you see on BBSs.

bandwidth: The amount of information that can flow between two points at a given time. Also used to denote the amount of information a person can absorb before their brain swells up and soutirs out of their exis.

baud rate: Pronounced Toord?.
Commonly described as the rate at which your modem can send and receive information. Not the same as BPS, as baud rate is the amount of modulation changes per second on a given channel. Three hundred bits per second is 600 baud, if you want to be pickly – see bits per second or BPS.

BPS: Bits per second. The number of actual bits (rather than modulation changes) that a modem sends per second – see also baud rate.

Hayes: The Hayes command set is a set of codes understood by almost all modems in use today, based on a simple set of codes prefixed by the letters AT. So ATZ is reset. ATH is hang up and ATSO=4 is auto answer in four rings.

ISDN: Stands for integrated Service Digital Network, and is the only fully digital multiplexed comms system we have. When I say "we", I mean anyone with the money to have it installed. It replaces the old analogue way of doing things with a full digital network over normal BT lines. It is experience though.

RS232: One of the existing standards for serial ports, which just so happens to be the one adopted by the Amiga. This identifies not only the type of port but the cables you need to use that port.

shareware: Freely distributed software which you get to use for nothing for a specified time, but after that time you have to pay the author. It's a very cosmic way for software to change hands, and does wonders for your lamma, except if you don't pay up and use the software for free, in which case you're damined for all time.

terminals terminals used to be dumb devices who's only job was to communicate with another computer. They consist of a screen, a keyboard and an RS232 socket, plus a bit of simple software in ROM. You can emulate one of these old-fashioned devices with a terminal emulator program, like NComm.

letters form the Inland Revenue because your accountant will get all the letters too and deal with that for you as well.

Another slightly negative aspect of being a sysop is that you might unwittingly fall foul of the law, if your BBS is discovered to contain any copyright software or porn.

Piracy and porn are the scourge of the BBS business and every day you read in the trade press about a BBS being raided and all the disks in the building being impounded as evidence. This means not only any disks used by

This means not only any disks used by the BBS but also any disk belonging to A

you, your friends and also arry hardware you own, like modems and computers etc. This can be a very expensive mistake, and it would be wise to avoid arry mostible problems by being very strict.

about what you allow people to upload SHOT OFF

Post warning messages state that anyone putting your BBS at risk by uploading suspect material will be shot off the system and not have their subscription refunded, to cover the administrative costs of sorting the mess

it.
Also you have to ensure that the

system is virus free, by routinely checking everything which is uploaded to the system. Being a sysop is fun, but you also take on a

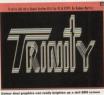
great responsibility.

The bonuses are that you are involved in something really good. You are getting people together and all your on-line exploits can be free. All the people you meet are

dialing you, so you don't pay a bean.

And it could end up being your job,
earning you fame and fortune, putting the
planets in alignment – generally a Good
Thing for all concerned.

So that's it. You too can be the best sysop in the world, and all for the price of a bit of shareware and a modern.



Cettour Action graphics can ready any are

RRRRS

(Fred Fish 797)

(Fred Fish 30)

[Net Amiga (Perspective Software \$129.95)

Fully featured BBS system, with scope for

NIG Professional

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with Trapdoor and DLGMail and is the best

ready to serve Fidonet package around. It's

A full professional BBS, comes bundled

Afters host script for use with the



Take to the CODE and rook states - to add full result the peak a result

### What software?

complex BBS operating system.
All it needs is 512k and a hard disk. Of from your desiler or direct from TelePro-Technologies, 7898A Gaetz Ave., Red D Alberta T4P 3N4, Canada.
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### EHCELSIOR!

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One of the linest and easies to use commercial systems. Full Gull control, BBSLINK links BBSs together, Fidonet, Usenet and Internet mail, private mailboxes, CMWK offiane reader, and Albeox interface.

> I dealer or contact Syscom Design. Box 452, Clair Shores, MI 48080.

### (Fred Fish 621)

Shareware. Industry-standard comm

### TAGBBS

Trinity@BS.

(Fred Fish 883) Shareware. Used to be a really good TrinityBBS
(shareware)
A really good system which is free to download from any BBS which has it. The receive much the heart of the Burch

### FliteBBS

(Fred Fish 444)

A trimmed down on-line message and file handling system, which includes a message base, private mail, file library, and support fo XModem, Ymodem and ZModem. Not bad.

### Henglink

(IHD Global Computer Center \$165)
Multi line BBS with Fidonet support, with extensive menu configuration to allow the system to look like any popular system or

Capacity for over 6,500 message and file bases, and compatible with Xenolink, Paragon and Aftexx external door programs. 512k and hard drive needed.

Paragon and Access essential book programs. 512k and hard drive needes From your dealer or direct from IHD Global Computer Center, 205 Eighth Street, National City, CA 91950. BRS: 010 1 (619) 477-2368.



1-4 The Mevs. SOUTHEND

### n last month's issue we created. the necessary drawers and a basic startup-sequence needed for an AmigaDOS disk to autoboot. Now we will be adding the necessary files to make the disk load with a minimum

If you take a look at the startup sequence we created last month you'll find that it is made up of the following C commands -

Echo, Assign, LoadWB and EndCLL Any commands in the startup-sequence will need to copy the necessary files across

from your Workbench disk. Type in the following: Conv. crache to Mubishire

Conv classian to Bubinker copy classing to systakic

As we add more commands to the startupsequence so you will need to copy them

into the C directory. Certain applications require their own fonts. Fortunately, AmigaDOS compensates for this by storing fonts in the Fonts drawer and assigning the label FONTS: to it. From the Shell type in the following:

Edit the startup-sequence again and underneath Assign ENV: Ram: type in:

Assien FONTS: Mylick:Fants

To save the startup-sequence press Esc, x and then Return. Now, whenever you copy an application over to MyDisk you can copy any necessary fonts into the Fonts drawer. When the

### Stepping into

application is run it will look for its fonts in the FONTS assign directory.

In order to give the disk MyDisk some default preference values we need to copy across the file system-configuration that resides in the Devs directory of your Workbeach disk

System-configuration is a small file that contains simple preference information such as the default printer (Generic), screen resolution and colours

Obviously, if you want more control over your preferences you will need to copy across the Prefs drawer and associated files. Don't worry about this for now as we will be explaining this in greater depth in a future issue. For the moment simply copy the system-configuration using the

At this point we may as well copy over the device driver files as well. Device drivers are required if you want your Workbench to be able to communicate with external hardware such as a printer or modern

The files we need are clipboard device (controls writing and reading clips to CLIPS); parallel device (controls access to the parallel port); printer device (controls access to the printer device, and serial device

### Get unur floony disks to auto-hoot in this second instalment of Steue Illhite's exclusive AmigaDOS 3.0 tutorial



Here you can see the basic Shell commands that need to be entered in order to create the correct directories and copy the necessary files across to MyDiak

which controls access to the serial porti In order to copy these across type in the following in the Shell:

copy dessiparallel.device to MyDiskideus copy deux; serial device to Mybisk-deux

In a later instalment of this tutorial we will be showing you how you can get a printer up. and running from your auto-booting disk.

The devices above will then come into use. We now need to add a single file to the L directory. The file we need is called porthandler and basically provides the AmigaDOS interface for the SER; PAR; and

PRT: devices. These devices basically allow output to printers and moderns Don't worry too much about them as once they are copied onto the disk the user need never worry about them again. To copy the file across use the following

copy Liport-handler to MyDiskil

Last, but by no means least we need to copy a couple of libraries across to the Libs directory. The two files are called asl library and diskfont library. Asl library provides the file, font and screen requesters that

AmigaDOS uses and Diskfont library contains information that allows Workbench 3.0 to interpret fonts and read them. Diskfont's major advantage is that it allows

two or more programs to multitask [be loaded and running simultaneously) and use the same font. Copy these files across with the following commands:

copy libs:asl.library to MyDisk:libs copy libs:diskfont.library to MyDisk:libs Now the basic files have been copied across you can test your disk by inserting it into DFO and rebooting your Amiga.

The disk should load with no problems. Open up MyDisk by double-clicking on the

disk icon and take a look at the top window This bar should inform you that MyDisk is 14% full, 718k free and 119k in use. Use

Show All Files from the Window menu on Workbench to see the drawers and their contents If everything is as it should be you have successfully completed the first section of the tutorial. If not, we would advise you restart the tutorial from the beginning.

We can now create the preferences files and assigns MyDisk needs so that we can eventually use a printer. In order for us to use the preferences programs we need to create an area for any preference files to be stored. These files are loaded when any preferences program are run.

The preferences files reside in

### Command syntax

LoudWB [-DEBUG] [DELAT] [CLEANUP] [NEW-PATH]

Copy [FROM] [Path | Pattern] [TO] [Path | Pattern] [ALL] [AU[ET]

Ed [FROM] [Path | Pattern] [SIZE 400] [WINDOW] [TABS 400] [WIDTH 400] [HEIGHT

Versian [ibrary | device | file>]

### Editina in Ed

teleft arrow | Left edge of the Ed window t+right arrow End of the current line To right edge of current line

Start of the first line on the screen Start of the next word Space following the previous word To the next tab position

Move 12 lines down through the file iff possit

Delete the character under the cursor

If the cursor is over a space, all spaces up to the pe deleted. If the cursor is over a character, all characters up to the next spaces are deleted

**Amiga Computing** 

### aAmigaDOS 3.0

effecting the originals. Obviously, when you

Before we go on to improve our auto-

booting disk let's take a look at some of the

AmigaDOS and how to get around them.

detail. Although it looks fairly basic it

features a very useful facility that is not

Let's take a look at the Shell in closer

If a mistake is made when typing in an

AmigaDOS command, most users will simply

re-type the command. However, this is not

necessary as the Shell has the ability to

actually come to save the preferences the

originals are written over

immediately apparent.



### By using the Show All command from the Workbenc menus you can check the contents of MyDisk

Sys:Prefs/EnvArchive/Sys/ which is pointed to by the assign EnVARC. At this point we also need to edit our startup-sequence. Load up Ed and the startup-sequence from MyDisk and delete the following line:

Assign T: Ram: Assign ENV: Ram:

Now, below the Echo command type in the

Following: Makedir Ram:T Makedir Ram:Clipboards

Makedir Ram:[BVV Assign CLIPS: Ham:Clipboards Assign T: Ham:T Copy >WIL: EMVARC: Ram:(BVV ALL NORES

Save the startup-sequence and then open up the Shell and type in the following commands:

Makedir Sys:Prefs
Makedir Sys:Prefs/Enu-Archive
Makedir Sys:Prefs/Enu-Archive/Sys

What we have effectively done here is created an area where the preferences debut. His can reside – MyOis Prefs/Enr-Archive/fys. We have also created individual drawers for ENV, T and CLIPS stops RAM from becoming d

You will notice that we have not assigned ENVARC which points to the preferences defaults. This is because ENVARC is built into the ROM (lead Only Memory) and therefore doesn't need to be manually assigned in the startup-sequence.

The reason we copy the ENVARC preferences defaults into ENV in RAM is because they are quicker to load and also you can use your preferences without

### Jargon buster

DEVS:Clipboard.device: Controls writing and reading clips to CUPS:

DEVS:Parallel.device: Controls access to the parallel port.
DEVS:Printer.device: Controls access to the printer device.

DEVS:Serial.device: Controls access to the serial port

**DEVS:System-configuration:** Contain basic default preferences such as printer, colours and resolution.

L:Port-handler: The AmigaDOS interface handler for the SER:, PAR: and PRT: devices. LIBS:Diskfont.library: Library modules for finding and loading font files.

LIBS:ASI.library: File, font and screen mode requester modules.

FONTS: Stores fonts and their descriptions.

**ENVARC:** Stands for environment variables archive and points to the location where all the preferences default files are stored.

retrieve previously entered commands with the cursor up and cursor down arrow keys. Another common problem is a failure to copy libraries when copying unitaries or

copy libraries when copying utilities or installing applications on a hard drive. Remember, all ArrigaDOS disks have the same structure, it is important when copying programs to make sure that any relevant libraries are copied also.

If you have ever seen a requester pop up telling you that you need a library version something or other then you can be sure that you haven't copied all the necessary floor servers.

Nes across.

Sometimes the requester will appear informing you that you haven't got a

informing you that you haven't got a certain library in the Libs directory when in fact you have. The deciding factor here is the library version number. Almost all library files contain version.

information which you can use to find out how old or new a library is. You can then

### AmigaDOS 3.0 Part 2



copy or keep the latest version.

To find out the version number of the distront.library, for example, type following in the Shelt:

This will return the statement

"diskfont library 39.3".

As version is fairly useful it should really be copied onto MyDisk. It is only 4k in size so it won't take up much space on the disk

Type in the following command: copy coversion to MyDiskic

Now that version is installed you should have no problems installing the correct libraries for applications. This mover's CoverDisk includes a superb unity called shoopDO's which is ideal for finding out if programs are calling any libraries or other such files.

The programs are calling any libraries or other such files.

any calls made by applications. Anything that is missing is registered as a fall. You call then copy the missing files across. In next month's issue we will be finding out how to get a printer up and running as well as copying the preferences programs.



re you ready for another trio into the wonderful world of 68000 machine-code? Following on from last month when we took over the system and set up a 32-colour screen. We'll now add the main character of the game, that little vellow blob that answers to the name of Parman

What we want is Pacman moving around the screen under joystick control so we'll need a routine to read the loystick. and another to draw the sprite onto the

Of course we want the sprite to be animated too, as it would be a bit boring if he wasn't. That's really no problem though; we just need to change the frame. What? Trust mel.

First of all we need to decide whether sprite. Perhaps I'd better explain what the physically drawn onto the screen bitmaps with the blitter; this takes time but there are no restrictions to the number of bobs (Blitter OBjectS), their size or the number of colours they have.

## Packing it

On the other hand we could use hardware sprites, which are much easier to use and don't take any processor time at all to draw. There are drawbacks though (aren't there always?) - in their basic form there are eight hardware sprites which are a fixed 16 pixels wide and can have only four colours, though two sprites can be "attached", giving one with 16 colours.

### COLLISION

There is another advantage to using sprites of the hardware variety in that we can use the hardware collision detection registers to find out what sprites have run into other sprites, or a background colour. It is much better to use the hardware collision registers if you can as they are

OUR_SPRITE		
DC.W	SYYXX, SNNBB	(CONTROL WORDS)
DC.W	S, S	
DC.W	S S	(GRAPHICS DATA)
DC.W	\$0000, \$0000	(END OF SPRITE)

YY = Y-coordinate of sprite NN = line after the last line of sprite BB = other bits

Fin. 1 Lawout of sorite structure

nivel perfect in their collision detection and of course take no processor time to Don't you just hate those games where

the programmer has taken it upon himself to code his own collision detection routines but hasn't done a very good job of it, and you are left furning when your ship explodes even though you know the other ship didn't touch you?

right. I know that there are times when you can't use the hardware collision detection registers, but they could at least do as good a job at coding their own routines!

There are other ways the hardware helps detection routines, eg the blitter has a function where you blit two areas together and you are told whether the two areas touched, even with a single pixel, so there really is no excuse for not coding a decent collision detection system To keep things simple I've decided to use hardware sprites for Pacman and the ghosts. As four colours are a little limiting. for Pacman I'll attach two hardware spring to form a 16-colour one. The ghosts will need to be four-colour sprites though.

All right, now we've got that sorted our I'll go into how we go about actually setting up our sprites. The first thing to do

in the form as shown in Fig I. The first two words in the structure are the control words which contain the sprite's x and v co-ordinates, the scanline

attached or not. Following this is the actual graphics data of the sprite, ie what you will actually see on the screen. At the end of all this are the control words for the next sprite - ves. DMA channel, providing there is at least

one scanline between them vertically

# Are you ready? H was have

followed the should see these results

### Reading the ports

You can test these bits with the BTST instruction (short for Bit TeST), eg btst #9,d0. To test if the

wait for the Fire button of the joystick plugger into port two (the normal joystick port) to be

and there is the key code of the key being If you have a copy of the Amiga coders' bible,

## tall in

Adding the Parman character to our game is the subject of the second part of Mark lackson's Assembler series

> Colour 1 Colour2 Colour 3



simple step once you

greater

to sprite zero, sprite three to sprite two sprite five to sprite four and sprite seven to sprite six. You couldn't, for example, attach sprite two to sprite six.

Sprites 2&3 Sorites 4&5 Sorites S&A Col 28

Transparent

The sprite pairs are used for other things too. like hardware collision detection: you can only test for collisions between sprite pairs, eg if sprite zero or

one has hit sprite four or five, or sprite six Some thought therefore needs to be given to which sprites you use for which things: if you were writing a Breakoutstyle game with the bat and ball as

hardware sprites, you wouldn't want to make the bat sprite 0 and the ball sprite 1 as you couldn't use the hardware method to detect a collision between them. The sprite pairs come up again when you come to set the sprite's colours. Each sprite pair can have a separate set of

Col 30 Fig. 3 Allocation of colour for hardware sprites



colours, the hardware sprites using colours 17-31. The colour allocation is

shown in Fig III. The video priority between hardware sprites is fixed: sprite zero appears above sprite one, which appears above sprite two, and so on. However you can set the order in which they appear in relation to the playfield ithe normal screen), or playfields if you've set up a dual-playfield screen, with BPLCON2. We want all sprites to appear above the playfield, so we'll set

### BPLCON2 to \$20. BLITTER

You may notice in this month's source code that I've used the blitter to copy the "are you ready?", "paused" and "game over" graphics onto the screen (after copying what was already on the screen into a buffer of course, so we can restore it after)

Well, I haven't got time this month to go into the inner workings of the Amiga's infamous blitter chip, but you can look

• I'll be back next month with more tales from machine code land about setting up our screen with all those little dots and paths and things, while not forgetting the hardware collision detection.

However, if you don't want any more sprites you put two zero words in to mark This all sounds pretty easy so far, but

nothing in life is as easy as you first think! To make life more difficult. Commodore decided to split up the bits that make up the x y & n co-ordinates, so the layout of the give a horizontal range of 0 to 447 and a vertical range of 0 to about 300 requires nine bits of data (eight bits only give a range from 0 to 255).

### SIGNIFICANT

ine

per

The most significant bits of the y coordinate and the line after the last line of the sprite co-ordinate and the least significant bit of the x co-ordinate are stored in the last three bits of control word two, while the other eight bits of each of them are grouped together as bytes and stored as

Some coders don't bother using Y8. N8 & XO for ease of use (or because they're too lazy to code a proper routine); this means that the sprite can only be positioned on an even x co-ordinate and can't enter the bottom \$6 lines of the screen!

Of course, we'll use a proper routine. To see how the bits are set in the control words look at the source code on this month's CoverDisk. The way I do it is to work on the co-ordinates as separate words and then every frame, set the control words

Now as I've said before, the main Pacman sprite is going to be a 16-colour attached one. It is very easy to attach two sorites once you've done all of the tricky stuff of setting the control words on the first sprite - all you have to do is copy the control words from the first sprite to the second one so they both appear at exactly the same position on the screen, then just set the attach bit of the second sprite's second control word (bit seven). Simple as

The sprites you attach must be sprite pairs though, ie you can attach sprite one

From here we'll look at other sprites and collision detections, as above in BombPac

Bit number	15	14	13	12	11	09	08	07	06	05	04	03	02	01	00	
Word 1	Y7	Y6	Y5	Y4	Y3	Y2	YI	YO	Х(3	Х7	Х6	X5	X4	ХЗ	X2	XI
Word 2	N7	N6	N5	N4	N3	N2	NI	N0	Α			-	-	Y8	N8	X0

Fig. 2 Format of control words

ontinuing our saga on interfacing with ARext, this month we are looking at function hosts. In contrast to a command host, which allows specific commands to be sent to it, a function host allows new functions to be added to

ARexx, as if the host was a library.

The functions added are global, and they will be available to any calling Allexx program; the

program does not even need to know that the host is running, as this is taken care of by the resident process.

There are advantages and disadvantages to using function hosts. On the minus side, the

global naming convention used by function hosts could cause a name clash.

It may also be better for a user to know that he is sending his messages to a specific package.

this way he has a clearer idea of what is going on.
On the plus side, function hosts handle

results in a neater manner than command hosts, since you do not have to use the:

OPTIONS RESULTS;.....; ASDRESS 'hostaddress' 'hostcommand'; s=RESULT;...

kludge. With a function host all you need is an expression like:

x=hostfunctios(arguments)
to achieve the same end. Ultimately, the choice

of which interface to use depends on the programmer and the specific program requirements.

Broadly speaking, there are two cases when you are likely to need an ARex interface. Their retaintning it but no means clear cut, and there

can be a great deal of overlap. They are when the program needs to be controlled externally, perhaps remotely, and when it needs to provide a batch language for its users. In the first case, a command host is probably

a better idea, while in the second case a function host may do a better job, especially if lot of results are involved. Since – for the purposes of ARexx – a

function host behaves pretty much like a library, it could be used to prototype a library of useful functions.

By now, you should be quite familiar with the Affect hierarchy of function resolution, i. et program defined functions, 2. built in Affect functions, 3. libraries and function hosts, and 4 external Affect macro programs (in REXX: or the current directory).

The RXLIB command (without any arguments) will show you all the libraries and hosts available to the Aflexs system at any time. This command is also used to attach new libraries, but function hosts are responsible for attaching themselves to the system. This is described below.

We have already said that despite their apparent differences, function hosts and command hosts are quite smillar in their underlying structure. The main differences are in the way that the message gets to the host, and the way that the arguments and results are

handled.

However, both hosts are quite similar in their basics. Once it gets a valid message, the host must decode the RexxArds (see previous issue)

so that it knows what the command/function is and what the arguments are.

From then on, it is entirely up to the programmer to decide what action to take. When it is time to reply to the message (preferably as soon as possible) the appropriate Rexulvings are created, stuffed into the message slots, and the message is then replied to. In order for the function host to register itself

In order for the function host to register itself with ARex, so that ARex can check if any undefined functions belong to it, it must send a special command [rm\_Action] to the resident process. This is known as the RXADDFH command.

This is known as the RXADDFH command and is defined as the four-byte value '07000000'x. It is the first command that must be sent by the host. After this, the function host will be checked for all calls which are not program-defined or built-in.

When the RXADDFH command is sent, its first argument is the name of the host's port. and its second argument is the port's priority.
Likewise there is a RXREMFH command for when the function hosts wants to disconnect from the Albert system.

Since just about every element of the Amiga's OS kernel has a priority, ports are no exception, and this can be used to give a small increase in speed by giving the port a slightly higher priority than other Altexx ports running at the

This means that this port will be the first one encountered when the system list are searched. Incidentally, you may have noticed that this is the same technique employed by the RexView utility which was included in the last issue.

By creating a port called REXX and giving it a slightly higher priority than the regular REXX port, it allows it to intercept any messages going to REXX so that we can monitor them before they are passed them on to their

# Functi

### **Back to ARexx basics**

I have devoted most of the space in the last four issues to fairly technical subjects, so here, out of consideration to new users, we'll look as certain neat tricks that will enable you to streamline the use of your system, and also get a feel of how best to use Alexx.

All of you will have noticed the Workbench menu called Tools which normally has only.

one item – ResetWB. Some (probably most) of you will also know that there are several unlines awaitable (ep Tool Manager, Toolsbeamon and so on) that allow you to launch programs of your choice from these menus. Most of these utilities are freely distributable, so it is really worth your while getting copies. Whereas these tool manager-

Workbench Window Icons Tools WB-Extra ARexx Workbench Trace Conso Open+Start DirSize Close (D->here TS What Is? TE version >> markers >> icons HALT ARexx MorkRench ol AmigaShell 6.WorkBench:WBStartup>

Using a tool manager

to add oustom ARexx

legitimate owner. This may not be the most legal of ARexx programming techniques, but it stagel

Here is a code fragment showing how a function bost would add itself to the system. our examples so far, ie an ARexx program which combines rexisupport library calls, along with a number of exec. library calls where rexesupport is not flexible enough. We use rxgen.library to access the Exec functions

directly from ARexx. (See Listing II. For the cake of clarity we do not include any /\*assume all libraries properly open \*/ checks here, but, of course, they are essential if the program is to have any semblance of robustness. The host must also release the system at some stage using RXREMFH.

· We will look at a complete version of this program next time. See you then,



nterfarino lus hints and ips for budding users of the anquaqe

### /\* modifiers for adding a function host \*/ RXADDER + "07000000"x REFS\_MONTET - 20 ActionCode = BitSet(RXADOFH, RXFB MONRET) /\* We now allocate a RexxMsq to send \*/

/\* we will need the following definitions for ragen \*/
/\* in addition to those we have already. They are \*/
/\* derived from the FD files. See the ragen docs \*/
LIBS\_rece.Pathsg. = 'FEST'a||AB||'20090a'x

LIBS.rexxsys16b.CreateRexxRsg = "FF70"x||ASS||'20090a01"x LIBS.rexxsys16b.EreateRexxRsg = "FF70"x||ASS||'20090a01"x LIBS.rexxsys16b.BeleteRexxRsg = "FF64"x||A||'2009"x /\* There are they Alexs action codes and \*!

# on hosts

packet = GenkCall("rexxsyslib","CreateRexxMsg",port\_addr,",") /\* include a check for port creation\*/
/\*place values in RessRsg \*/
[ALL Export(Offset(packet,28),ActionCode,4)

/\*(first check that REXX is up and running)\*/
rexx\_addr = Gen4Call("exec","findPort","REXX")
TAIL Gen4Call("exec","PutMuo", rexx addr\_aacket)

type programs allow you to launch applications without having to open up drawers, their main strength is that they allow Workbench mouse selections to be used as parameters. This means that you can select a Workbench icon and pass it to an ARexx script as an argument.

I have found several excellent uses for this. Here is one I use all the time. Do you sometimes use the Workbench to examine files that are deeply nested on a hard disk drive or even a CD-ROM, and then need to do some more elaborate work, which requires a Shell?

You have to open a Shell window and type in the directory you need, which may be a very long name indeed, eg:

### Wark:subdir1/subdir2/.../subdirN.

If you have to do this a lot, it can get irritating The following little script can be attached to your tool manager utility and will automatically open a Shell window with the current directory set to the icon you have clicked on, no matter

PARSE ARG '22'x here '22'x /\* Determine if our selection is a directory, \*/
/\* a simple file, or an icon (.info) without a PARSS VALUE Statef(here) Will type . WHEN type - 'FILE' THEN CALL SetDirMane() WHEN type = 'DIR' THEN CALL COMMENC)
OTHERWISE DO

here = here || '.info' IF Emists(here) THEM CALL GetDirMame()

ELSE DO /\* You should MEVER get here \*/ SAT 'Strange Error selection: ' here 'Oa's 'is not a file or Die!'

how deeply nested it is! I have called the script François's excellent ToolsDeamon

Note that the first line in the GetDirName[] function assumes that you have added RegExp.library to your system. I described this library, and the regular expression syntax, back must use an alternate way to extract the directory name only from the full path name.

There are several ways to do this. Here is a macro based on using the position of the last ":" the argument is of the form Devrdir1/dir2/dir3 etc and does not check

> /\*birkage.ress : get the directory name\*/ fullnamewarg(1) col=lestpos(':',fullname) sla=lestpos('!',fullname) PARSE VAR fullname dirname +mark filename

FAIT 5 END

GetDirMane: here = RESubstr(here, 1.+[1/]1) CALL COHere()

Praoma('d'.here) ADDRESS COMMAND 'newshell >nil: If you use the above method, then you should substitute the first line in the GetDirName() function with:

here . birMane(here).

and add the above macro to your REXX directory. Another approach to this problem AmigaDOS command list <fullname> Mormat %f in an Alleux script

There are several other uses for this kind of script in conjunction with a tool manager. since they allow such a high degree of customisation, they will be mainly dependent on the user

They can be used to replace much of the work of bulky directory managers. Some of the commoner uses I have found include a friendlier interface to archivers like zoo and ha, getting directory sizes and information about files, as well as several specialised and

Some of these uses could be handled by AmigaDOS scripts, but most would be too awkward, especially if they had nontrivial parsing or mathematical requirements.

With AmigaDOS you might find the need for custom commands, whereas ARexx lets you write them yourself. It provides an ideal and integrated way to link up everything in your system. Happy experimenting.

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diting is where the video finally comes together - it's a time when a bad film can be rescued and a good leo ruined with clumsy, inappropriate

Time code is the heart of any editing suite. The system offers a means of identifying each consecutive frame of recording with a cumulative time counter. This reading is given in eight figures - hours, minutes, seconds and

It allows material to be lined up down to the point of reference when asked to perform a cut One of the most common problems

encountered with amateur videos are the timing of the cuts. This isn't usually down to

02.36.58.23

MINUTES SECONDS FRAMES HOURS

The time-code display as found in professional editing suites

### Time-coding made being used - without the time code, you'll be In professional broadcasting, frame simple

the editor but more the equipment that is relying on luck to give you accuracy.

accuracy has to be exact. Simply working with two video recorders connected by a couple of leads is not enough - there is no and the same speed without spending some cash on necessary Amiga hardware to aid you in your endeavours.

There are different types of time code systems on offer, the two most common for the amateur being VITC and RCTC, VITC (Vertical Interval Time Code) is found on VHS

If you want your video to look as if it just rolled out of the BBC, then accurate and polished editing is vital.

video recorders and camcorders. The code is

written onto the tape as it passes by the This is done by placing the necessary information as lines at the start of each video track. Fortunately, when replayed, this info is out of sight and is only read by the recorder.

during shooting and if not then, during a copying process that'll lay down one for you.

### SHOOTING RCTC [Rewritable Commercial Time Code]

allows the user to rewrite or add the code after the material has been shot, as well as recording it during shooting. This leads to unrestrictive nature

of time code is the help it can offer when logging the tapes. As discussed a few months back in these pages, logging is a process where all the shots on each tape are written down with their respective time code readings.

In the editing suite, this means that shots can be found easily and with speed thus saving money and frustration. It's vital that the tape you are going to record your video on to is time-coded as well.

Without, the machine will be able to read the tape that images are to come from but it won't be able to place them on the receiving recorder. The preparation process is called black'n' bursting.

This simply means that you place the record black onto the tape therefore preparing it for editing. This is easily achieved by placing the cap on the lens and detaching the microphone to rid the tape of any unwanted noise

Another useful tip if you're doing several cuts of the video: it's advisable to make copies of the original footage and use these for the off-line versions (the rough cut, second cut, and so on). This puts less wear and tear on

the originals and helps prevent any harm via dirty heads or coffee spillages (after all, no-Above all, if you want your video to look as

if it just rolled out of the BBC, then accurate and polished editing is vital.

### Clever camcorders Some camcorders have built-in time code

generators or, usually, an add-on that can be plugged straight in to the unit Whenever the machine begins to record, it'll automatically start to lay the time code down on the tape and it's common to see this displayed via the viewfinder.

You'll find that, once in an editing suite that has the right compatibility and a time scode reader (either provided by the original camcorder or a VCR with a reader), the time will appear on the editing console digital display.





Adam Phillips takes a close look at time-coding. one of the most crucial elements of any editing



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ot everyone either wants, or can afford, an Amiga music system built around heavyweight sequencer and obation software like Dr T's KCS and Copyist

There are however plenty of users who are finding that some sort of notation facilities are a useful extra to have around and at the more affordable end of the market there are two Amiga music programs that, to some extent, fit the bit.

One of these is Deluxe Music 2, the new version of Electronic Arts' Deluxe Music Construction Set program which made a relatively quies entry into the marketplace during the latter part of last year.

Because of its price, integral score handling tectiles, the ability to operate with both Mid and internal Arriga sounds, and the fact that it is primarily, aimed at home users, the program superficially bears comparison to the other all reducible notation-inverted contender — Dr Ts Tiger Cub. I say superficially because while these two packages have all the above garden common, they are actually aimed at very collisions. If an aim is a concerned,

Defuxe Music 2 is not a sequencer as suchit's more an interactive musical notation program. Composition revolves around Deluxe Music's Score Window which appears on the screen, together with the Tool Window and Plano Keyboard, when the program first loads. You enter music into this window in one of

You enter music into this window in one of four ways: By loading a song from disk; by selecting notes from a Tool window and dropping them onto the staff; by playing them on the on-screen plano keyboard; or by entering them wa a Midl keyboard; connected to your Amiga with a Midl interface.

Detuxe Music 2 is easy to use and the latest version has many new features. Up to 48 staves can be used, you can have multiple song projects open at the same time, and there is improved note resolution (64th notes and rests and septuplets are availables).

A stand-alone player module, keystroke macros and an ARexx interface have been added and the Midl options now include some long awaited Midl file support.

The key element as far Deluxe Music is concerned however is that the score display facilities are interactive. Once entered into a Deluxe Music 2 clever interactive score handling which looks promising providir the bugs are ironed out



# The importance of dots

score, notes and chord positions are still completely flexible so you can click on notes and drag them to a new position. You can also move notes and chords horizontally in the same manner.

Because of this, Deluze Music is particularly.

suitable for educational purposes and you can, for instance, mark sections of a song for repeats then have the notes, of the song flashed as the section is played. When you are learning to read music such facilities are quite useful.

### TEETHING

One piece of bad news that hasn't received the attention that it should is that Deluxe Music seems to be having more than its fair share of teething troubles.

I've even been able to crash the program at times by just attempong to load a Mid file joome load OK, some don't). To their credit Electronic Arts are rapidly sorting out the problems, so if you've already bought a copy and are having difficulties them get onto EA's technical support team (0753 549442) for the latest update clisk. Dr. Tr. Tiger Cub goes in rather a different direction to Deluxe Music. Basically Tiger Cub is a 12-track Midi sequencer with rock solid timing that also offers good internal sound facilities. In addition to this the package includes a QuickScore module which is able to convert Tierer Cub sequence data into conventional

musical scores.

Unlike Debuse Music, though, the score handling facilities are view/print only (although some notation display adjustments are provided). To edit notes your must leave QuickScore and return to Tiger Cub's sequencer

style eating.

These edit facilities revolve around a notation scheme whereby notes are displayed as horizontal bars with the horizontal length of a

bar indicating the duration of the note.
The height of a particular note stem represents the note on velocity: it measures how hard notes are struck [both of these aspects can be edited individually using the mounted.

The graphic editor works on a single track at a time using a track window which provides guidgets for inserting, copying and moving notes, changing the edit screen display magnification and so on. There's also a controller window available for editing controllers, pitch bend data, aftertouch and

Tiger Cub can be used without any Midi equipment at all but in all honesty it functions best as an entry-level Midi sequencer. In this guise it does a very good job indeed.





Na niinrhes

pulled this month as Paul Dueraa checks out two music programs that provide affordable score notation facilities



### Buy lines

 Deluxe Music 2 costs £67.90 and is available from Hobbyte Computers (tel: 0727 856005).

◆ Tiger Cub costs £59.95 and is available from Key Audio Systems (0245 344001). You might, incidentally, be interested to know that a company called Avalon Music Development (rel 081-699 7004) now provide a UK technical helpline for registered users of all Dr Ts music software.



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ust a thought. These items I'm about to describe to you are essential reading for the comms nut. Don't just think about reading them, get them today. First I would humbly suggest you go and buy the New Hacker's Dictionary (MIT Press) edited by Fric Raymond. This book is a band. copy version of the famous Usenet Jargon File, which was collected together as a sort of frequently asked questions file on the kind of language used on the nets and in computer

It grew and grew, and indeed even after this book was published it still continued to grow and is available on-line in many forms. This book is a sort of document of where the jarroon file was at in 1991, and although it's a big thick book, it's meant to be dipped into at random and cross referenced. It contains entries like the following:

fritterware n. An excess of capability that serves no productive end. The canonical example is the font-diddling software on the Mac (see macdink): the term describes anything that eats huge amounts of time for guite marginal gains in function but seduces people into using it answay.

like kicking dead whales down the beach adj. Describes a slow, difficult, and disgusting process. First popularized by a work done under one of IRM's mainframe. OSes. 'Well, you could write a C compiler in COBOL but it would be like kirking dead whales down the beach." See also fear and loathing.

hack 1, n. Originally, a quick job that produces what is needed, but not well, 2, n. An incredibly good, and perhaps very time what is needed. 3. vt. To bear emotionally or physically. "I can't hack this heat!" 4, vt. To. work on something (typically a program). In an immediate sense: "What are you doing?" "Tim hacking TECO." In a general /time extended) sense: "What do you do around here?" "I hack TECO." More generally, "I hack foo" is roughly equivalent to Too is my major interest (or project)". "I hack solid state physics." 5. vt. To

me letters and email about your

BBSs, and although I can't

quarantee I'll visit them and review them. I will always give

them a mention. Send your

details to the usual address.

First up is Robert Dale who

I enjoyed your recent article... and you asked for details of other bulletin boards (a follow up to Lee Sander's letter). Well, you're more than welcome to give mine a bell on 081-683 3536! It's called Darkside, is on-line 24 hours using a 16k8 HST modem, has over 200 echoes from Fido, Amiganet and Mercurynet and runs on the Xenolink Pro BBS software

File buffs are catered for with 1.2 gigs of hard drive file space (about % full at the moment) and a CD-ROM on-line (currently the AmiNet CD, but with several others available.) The BBS has been



### Game, net and match

pull a prank on. See sense 2 and harker livense 5). 6. vi. To interact with the computer in a playful and exploratory rather than goal-directed way. "Whatcha up to?" "Oh. just hacking." 7. n. short for hacker, 8, see nethack

As you can see a comprehensive and year readable tome for the light-hearted hacker. It also has the best definition of the word backer should check this book out before writing

anything about computers. It would save us all

The second item of reading matter is Wired and regularly features new areas of the net to go and explore, plus a number of really good related topics.

You can get it from Counter Productions. PO Box 556, London, SE5 ORL, Send for a free catalogue of other great and weird books and





running for just under a year now, and has attracted over 350 regular users. Well worth a look IMHO."

In case you didn't know, IMHO is net-speak for In My Humble Opinion. Also you might like to try this suggestion from Paul Sherlock

7 am writing to tell you about a BBS system called Wacky Carrot. It is based in West Malling in Kent on 0732 871878. I started downloading files but could not run them, so I left a message for the sysop and he was extremely helpful, talking me through all the compacting and archiving

What a nice chap. It's worthwhile learning about compaction and archive utilities, just in case you happen across some wacky ones on the Net. I'll perhaps do a run-down of some of the weirder ones next

**Amiga Computing** 

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like to see your programs, and the last few months have seen a cascading pile of disks coming my way, containing programs and games. The stuff has all been of an unusually high quality and I'm very impressed. It just goes to show if you place a programming tool of sufficient complexity in the hands of enough people, you can create a lot of creative stuff.

thing or two from you. A big thanks to everyone who has sent in a program recently. If you want to send something to me, then check out my submission guidelines below. One of the best routines I've seen this month is a

unique method of sending text anto the screen. created by Malcolm Lavery. Mal has contributed a number of routines on disk and we'll be visiting his source code periodically over the next few months

of the screen. The effect is quite hypnotic, and very

```
Securing Test
Screen Open 0,320,256,16,Loures
```

Srreen does 1.330.256.16.Loures After the usual guff we set the palette to black and

white:

Then double buffering is switched on and synchro is switched off. This means you have more control over the screen refreshes

Slobal B.AS.TEXS.POS

and then we're into the main program loop:

snowing text is called IN, but of course you could

The variable TEXS contains the text you want to

ITS SHOWING TEST JUST FOR YOU TERS-TEXS+"SO PUT ON YOUR WELLIES AND COME OUT"
TERS-TEXS+"NOT VERY EXCITING THIS METHOD IS IT " B11 B11111111

And then you can grab letters from the text from

### Winter in July

various positions in the line using the following

lek 1,0 Test 10.10.75\$

and this routine outs the bobs to the screen

For X=10 To 300 Step 8 Sext X 1:-500 For Ket0 to 300 Step 8 8dd 8.1

Sprinkle in a little AMAL to keep things moving

AS="Mave 0,740,50;Move 0,-10,5;Move 0,10,5;Move 0,10,5;" Anal F.AS CRECKCROAN AAA COURT . 466 I,1 Until COUNT:37

Channel R To Bob R AS="Move D.20,5;" Amel On R

and that's it! It's snowing text. Sounds like that should be a single by The Weather Girls. Or



but clever and

### Jiffy bags are go If you want to send in your routines to me, please by all means

do so, but send the programs as Ascii text, and ensure that they are typable, that is to say not too much stuff stripped in from risk as ARK files

Try to create any bobs etc using the DRAW and GET BOB commands, like this month's example. Also make sure that the program is short enough to go on the page. It's not very often I get to spread the Amos column over two pages, so do a quick word count on your program using a word processor and make sure it only contains about 400-500 words. Send the program on disk to the normal address If you have an Amos question, or a program to contribute, then

please write to Phil South, Amos Column, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.





Phil South with a deridedlu inspasonal hir undeniably neat snowing text rnutine

s long as your ad is ten words or less, it's absolutely freel Should you want more space, you'll find unrivalled value-for-money - for instance, 25 words cost just £10. Fill in the form below and send it to us with your payments (if

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by would we want to retouch a 00 Dr.T photograph? Well, there are three main reasons. The most obvious one is to 381 302 repair damaged photographs, usually old ones pastime, and possibly a profitable one too

Purists might argue that a digital version of the photo is not the same thing, that part of the attraction is the age of the photo, and even the smell of it, but if the image is fading, preserving

that image has to be the most important thing. restored to their former glory. Once in the computer, a slide-show of photos can be transferred to video tape, which is a bit tacky but

by far the cheapest option, or on to CD-ROM in any file format they wish, or printed on a dye sublimation printer - the results of which will be almost indistinguishable from a real photograph. sub printer has brought the power of this

small business. A second reason for retouching photos is to

fashion magazine industry uses photo retouching extensively for almost all portraits of models, especially cover portraits. Lips are smoothed, re-shaped and re-coloured

Zits and wayward strands of hair are removed. Eyes are brightened and often re-shaped to look sexier or more innocent Retouching fashion photos is a highly skilled and highly paid inb. To get proper photo-realistic

results you have to work with massive 24-bit or 32-bit images, perhaps 4,000 pixels wide by 5 000 pixels high. Lots of memory is required. Jots of hard disk space is required, and the fastest possible CPU is

required, and even then it can take a whole day to retouch just one photo. A third reason for retouching is what I use it for most - altering photos. There are a million

reasons why you would want to alter a photo One obvious reason is to combine bits of two or more photos into one graphic, or compositing as it is called. Another is to turn a mediocre photograph into a better one, which is what my

Take a look at the original photo shown There are two elementary things wrong with it. First, someone has walked behind one of the

girl's heads just when the photo was snapped Second, the group is not tight enough, in fact the girl on the right is being totally excluded from the group because she is so far away from the boy. Fixing this type of problems is a lot

photo a man has walked behind one of the niste hearts lost at the and the three don't appear to be friendly with on

### Finishing tauches

you have the correct tools. Top of the list has to be a fast Amiga with at least 8Mb of RAM (much more is much better) and a fairly large hard

If the Amiga is not AGA, then you really do need a 24-bit graphics card, but if you've got a Ham-8 screen will be plenty good enough.

### INRTHAL

Software-wise you need either GYP's ImageFX or Black Belt's Imagemaster (ADPro cannot do this sort of things. My preference is ImageEx because it has its own built-in virtual memory Imagemaster, alas, doesn't, and it doesn't work with GigaMem very well.

Removing the man behind the girl's head was achieved with ImageFX's Pantograph feature. This tool copies pixels from one area to another

The job was done in three bits. First I copied

pixels of the lower beach over the guy's trunks and thigh, then pixels of the sunbathing area over his upper torso, then I manually painted over his head, which was the easiest part because all I had to do was extend the door and wall of that building

Man removed, the next job was to bring these three young people together. And it is as simple What makes the retouching invisible to the human eye is the blending of the edges of the brush, or feathering as ImageFX calls it

I set quite a short blend, just four pixels, and for the girl on the right I first cut out a rectangular brush of the whole of the right half of the photo, cutting just to the left of the girl's skirt on the swimsuit.

as I could without overlapping him, then pasted it down. Little tip here: Use the left Amiga key

and the cursor keys for finer control over positioning brushes. Left Amiga-Left Alt is the button, and will stamp down the brush Lastly I cut out one girl after the other as lasso

brushes and move them even closer to the boy. every so slightly overlapping the boy with the girl on his left (the one with red hat) as she is leaning away slightly and still looked like she would rather be somewhere else

Save in IFF24 format, and that's it. If you know some retouching has been done and you look closely, you might just be able to see some tell-tale signs. But no one else will see them, and you will be hailed as a genius and, with any luck paid lots of money for your time and trouble







PIIRI ISHING



the man and brought the kids together. Have a good look and see if you can spot the





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